The 11th

INTERNATIONAL CONGRESS ON EDUCATION

제11차 세계식물원교육총회

Seoul COEX in June 2025

IN BOTANIC GARDENS

ABSTRACT BOOK

HOST: Korea Forest Service Korea National Arboretum BOTANIC GARDENS CONSERVATION INTERNATIONAL

ORGANIZER: Korea Forest Service Korea National Arboretum BOTANIC GARDENS CONSERVATION INTERNATIONAL KOREA ARBORETA AND GARDENS INSTITUTE

SPONSOR: 산사랑국민운동 한국산지보전협회 KOREA FOREST CONSERVATION ASSOCIATION

Korea Forest Welfare Institute KECC DOHWA ENGINEERING CharmJinju PYEONGTAEK (재)태안국제꽃박람회 조직위원회 문화도시노원 PROJECT TEAM PEARL

WELCOME MESSAGE

Welcome to the 11th International Congress on Education in Botanic Gardens and its Proceedings.
From 9 to 13 June 2025, the Korea National Arboretum and BGCI Patron Gardens are proud to host this Congress in Seoul, Korea.
This volume presents an overview of the entire Congress and provides comprehensive programme information to guide our discussions throughout the week.
Botanic gardens engage over one billion visitors each year and are uniquely positioned to propose educational solutions to urgent challenges such as the climate crisis and biodiversity loss. We hope these pages inspire you to share your research, forge new collaborations, and shape the future of botanic garden education.
Thank you for joining us in Korea. We look forward to your active participation and the lasting connections that will emerge from this gathering.

Paul Smith
Secretary General
Botanic Gardens Conservation International

Youngsuk Im
Director - General
Korea National Arboretum

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ABOUT THE CONGRESS

As climate change intensifies the global environmental crisis and accelerates biodiversity loss, the importance of conserving forest biodiversity is gaining increasing attention. At the 15th Conference of the Parties to the Convention on Biological Diversity (COP15), the Global Biodiversity Framework (GBF) was adopted, setting a global target to conserve 30% of the world's terrestrial and marine areas as protected zones by 2030. In line with this objective, there is a growing need to secure and systematically manage national tree genetic resources, as well as rare and endemic plant species. However, conservation efforts alone are not sufficient. Education plays a critical role in building a broader societal understanding of biodiversity issues and in fostering collective responsibility for conservation. Especially in the context of an education-focused congress, promoting educational engagement can support biodiversity conservation by fostering public understanding and encouraging its reflection in policies and practices.

The Korea National Arboretum is actively building comprehensive databases and conducting ongoing research to ensure the stable conservation and digital management of national biological resources, including plants, insects, and fungi. Furthermore, by incorporating the principles of the Sustainable Development Goals (SDGs) into its existing botanical education programs, the Arboretum is developing initiatives that allow young people to engage with and understand global challenges—such as climate change and biodiversity loss—through immersive experiences in nature. These programs are designed to foster informed decision-making and encourage responsible action. Nationally, botanical garden education is being advanced to meaningfully contribute to the achievement of the SDGs.

Within this context, arboreta serve a vital role not only in conserving biodiversity but also in educating the public on the value of plants and the natural environment.

In recognition of its leadership, the Korea National Arboretum has been selected as the host of the 11th International Congress on Education in Botanic Gardens (ICEBG 2025)—the first time the congress will be held in East Asia. Held under the theme "Education for Change – Botanic garden's role in addressing global challenges," the congress will provide a valuable platform to strengthen the global educational network of botanical institutions and to share forward-looking visions for sustainable development and international collaboration.

Notably, ICEBG 2025 will also be the first education congress to be held since the onset of the COVID-19 pandemic, as many national and international events over the past few years were either cancelled or moved online. This congress thus represents a timely and significant opportunity for the global botanic garden community to reconnect, exchange knowledge, and foster renewed cooperation.

ABOUT BGCI

Botanic Gardens Conservation International (BGCI) is a global membership organisation that connects botanic gardens through a shared commitment to conserve threatened plant species and to raise awareness of the essential role plants play in sustaining life.
With approximately 800 member organisations in over 100 countries, BGCI serves as the world's largest network dedicated to plant conservation.

Founded in 1987 as an independent charity based in the United Kingdom, BGCI was established to create a global network that unites the efforts of botanic gardens in protecting plant diversity. Today, it supports and strengthens its members and the wider conservation community by enabling them to apply their collective knowledge and expertise to address the growing threat of plant extinction.

BGCI's mission is to mobilise botanic gardens and engage partners to secure plant diversity for the well-being of people and the planet. Its vision is of a world where plant diversity is valued, safeguarded, and continues to support all life.

The BGCI network includes living plant collections of global importance, representing around one-third of known plant species. It also comprises advanced conservation infrastructure such as seed banks, glasshouses, and tissue culture facilities, along with a broad network of technical expertise spanning conservation policy, practice, and education. Through these resources, BGCI promotes an effective, science-based, and collaborative approach to plant conservation.

Guided by its Strategic Framework for 2021 to 2025, BGCI focuses on conserving plant species through coordinated efforts, fostering leadership and public awareness, facilitating the exchange of knowledge and resources across institutions, addressing global environmental and social challenges through education and engagement, and strengthening its organisational resilience to meet future needs.

As the leading voice for plant conservation, BGCI continues to influence international policy, drive scientific collaboration, and build a strong global community committed to securing a sustainable future supported by thriving plant diversity.

BGCI has an extensive Public Engagement programme, offering a wide range of tools and resources to support and enhance the educational efforts of botanic gardens worldwide. In addition, BGCI develops and delivers innovative, participatory projects that highlight the important social role botanic gardens play within their local communities.

ABOUT KNA

The Korea National Arboretum (KNA) is the nation's leading research institute that specializes in forest biospecies. The Arboretum was formally an affiliate of the Central Region Experimental Forestry Station of the Forest Research Center and reopened as an independent research institute on May 24, 1999, in an attempt to promote the conservation of Gwangneung Forest underpinned by government measures.

The arboretum plays critical roles in the field of plants and ecosystems: identifying, collecting, propagating, and conserving forest plants as well as collecting, classifying, producing, and managing forest biospieces. We are also committed to operating educational programs, spreading forest culture, and conserving Gwangneung Forest.
To accomplish our goals, we are working on diverse fields such as establishing a national plant resource management system, operating a plant conservation center, expanding specialized arboretums and enhancing their roles, identifying useful plants from home and abroad, building a forest biospecies center, expanding educational programs, promoting the arboretum, establishing an arboretum library, conserving the ecosystem of Gwangneung Forest.

Moreover, the KNA's thematic gardens opened in 1987 after a three - year construction period, and they now consist of 24 gardens with different plant characteristics and functions.

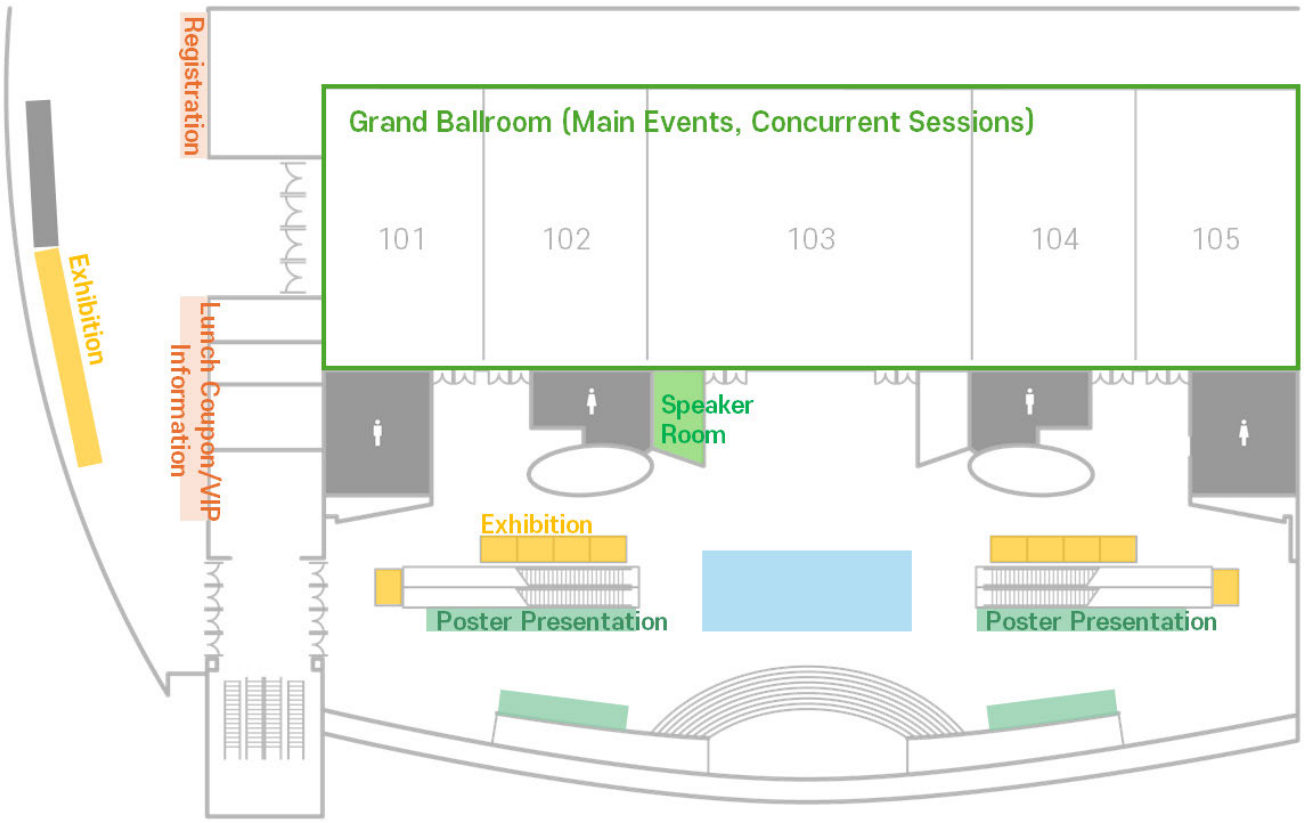
Our Forest Museum, opened on April 5, 1987, exhibits around 4,900 items including woodworks, relics, and materials presenting the history, present, and future of forests in Korea. Also, the Korea National Herbarium, opened in 2003, preserves and manages more than 1.16 million biospecies of plants, insects, wildlife animals, and plant seeds.

In addition, we have around 2,703 tropical plant species in the Tropical Plant Resources Research Center, established in 2008. The KNA initiated the Korea Biodiversity Information System to provide information on forest biospecies samples and plant databases collected from associated universities, research institutions, arboretums, and botanic gardens as well as the KNA.
We also operate the Korean Plant Names Index Committee with the Korea Society of Plant Taxonomists to standardize and name domestic plants.

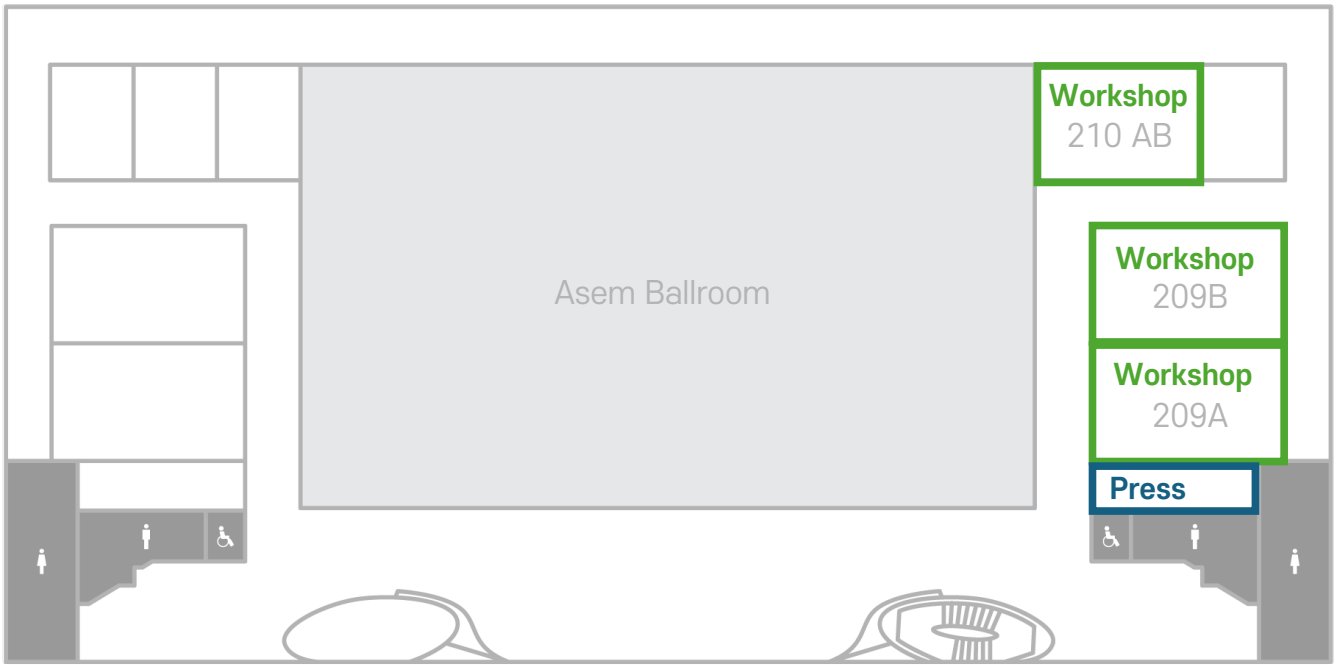
Likewise, the KNA has continued the tradition of research on forest biospecies in Korea, that first began in the 1920s. In particular, it has played a key role in securing biological sovereignty. Moreover, the KNA, as a national research institute, takes the lead in conserving and managing Gwangneung Forest, which holds more than 500 years of history since designated as the royal tomb site of King Sejo of the Joseon dynasty in 1468.

FLOOR PLAN

1F



2F



OVERVIEW

PROGRAM AT A GLANCE

DAY1. 9, JUNE (MONDAY)

ROOM 102-104
09:00-09:50
Opening Ceremony
09:50-10:50
Keynote Speech 1 **[Jae Chun CHOE]**
10:50-11:10 Break Time
11:10-12:10
Keynote Speech 2 **[Shahbaz KHAN]**
12:10-13:30 Lunch Time
13:30-14:30
Plenary Speech 1 **[Youmi LEE]**
14:30-15:00 Break Time

ROOM 101	ROOM 102	ROOM 103	ROOM 104	ROOM 105	ROOM 209A	ROOM 209B	ROOM 210	Outdoor
15:00-16:30								15:00-16:40
Oral Presentation	Panel Session	Panel Session	Lightning Talks	Oral Presentation	Workshop	Workshop	Workshop	Workshop
Topic 5	Topic 1	Topic 2	-	Topic 1	Topic 3	Topic 2	Topic 5	Topic 2
NB_O_4 NB_O_44 NB_O_47	PS_12	PS_44	HW_O_138 BS_O_54 BS_O_139 BS_O_174 BS_O_5 PT_O_78 EY_O_141	HW_O_6 HW_O_72 HW_O_143	WS_1	WS_45-1	WS_31	WS_17
16:30-17:00 Break Time								
17:00-18:30								
Oral Presentation	Panel Session	Panel Session	Lightning Talks	Oral Presentation	Workshop	Workshop	Workshop	
Topic 2	Topic 4	Topic 2	-	Topic 4	Topic 2	Topic 4	Topic 5	
BS_O_2 BS_O_17 BS_O_19 BS_O_55	PS_13	PS_30	NB_O_63 EY_O_173 EY_O_52 EY_O_179 NB_O_98 NB_O_133 NB_O_184	EY_O_1 EY_O_8 EY_O_24 EY_O_95	WS_40	WS_37	WS_47	

Grand Ballroom Lobby
18:30-20:30
Poster Presentation & Welcome Reception

DAY2. 10, JUNE (TUESDAY)

ROOM 102-104
09:00-10:00
Plenary Speech 2 Vivian MALEMA
10:00-10:30 Break Time

ROOM 210
10:30-12:00
[Workshop]
Topic 2
WS_49-1
12:00-13:30 Break Time

Outdoor	ROOM 209A	ROOM 209B	ROOM 210
13:30-17:00	13:30-15:00		
KNA Field Trip	Panel Session	Panel Session	Workshop
	Topic 5	Topic 1	Topic 2
	PS_42	PS_27	WS_49-2
	15:00-15:30 Break Time		
	ROOM 209A		
	15:30-17:00		
	[Panel Session]		
	Topic 2		
	PS_38		

ROOM 102-104
18:00-19:30
Congress Dinner

OVERVIEW

PROGRAM AT A GLANCE

DAY3. 11, JUNE (WEDNESDAY)

ROOM 102-104

09:00-10:00

Plenary Speech 3 **[Lujing CHEN]**

10:00-10:30 Break Time

10:30-10:30

Plenary Speech 4 **[Ingrid Sanchez TAPIA]**

11:30-13:30 Lunch Time

ROOM 101	ROOM 102	ROOM 103	ROOM 104	ROOM 105	ROOM 209A	ROOM 209B	ROOM 210	Out door
13:00-14:30								
Oral Presentation	Panel Session	Panel Session		Oral Presentation	Work shop	Work shop	Work shop	
Topic 3	Topic 2	Topic 3		Topic 4	Topic 1	Topic 2	Topic 1	
PT_O_64 PT_O_14 PT_O_56 PT_O_118	PS_35	PS_9		EY_O_119 EY_O_126	WS_23	WS_28	WS_10	
14:30-15:00 Break Time								
15:00-16:30								
Oral Presentation	Panel Session	Panel Session	Oral Presentation	Oral Presentation	World Café	Work shop	Work shop	Work shop
Topic 5	Topic 2	Topic 2	Topic 1	Topic 2	Topic 4	Topic 2	Topic 2	Topic 3
NB_O_49 NB_O_51 NB_O_57 NB_O_67	PS_24	PS_22	HW_O_90 HW_O_97 HW_O_103 HW_O_125	BS_O_36 BS_O_104 BS_O_106 BS_O_107	WC_19	WS_5	WS_39	WS_29
16:30-17:00 Break Time								
17:00-18:30								
Oral Presentation	Panel Session	Panel Session	Oral Presentation	Oral Presentation	World Café	Work shop		
Topic 5	Topic 1	Topic 2	Topic 1	Topic 2	Topic 5	Topic 3		
NB_O_83 NB_O_79 NB_O_85 NB_O_94	PS_11	PS_25	HW_O_135 HW_O_137 HW_O_176 HW_O_180	BS_O_114 BS_O_116 BS_O_132 BS_O_140	WS_8	WS_41		

DAY4. 12, JUNE (THURSDAY)

ROOM 102-104

09:00-10:00

Plenary Speech 5 **[Farmer TANTOH]**

10:00-10:30 Break Time

ROOM 101	ROOM 102	ROOM 103	ROOM 104	ROOM 105	ROOM 209A	ROOM 209B	ROOM 210	Out door
10:30-12:00								
Oral Presentation	Panel Session	Panel Session	Panel Session	Oral Presentation	Work shop	Work shop	Panel Session	Work shop
Topic 5	Topic 2	Topic 5	Topic 2	Topic 2	Topic 2	Topic 2	Topic 4	Topic 1
NB_O_120 NB_O_109 NB_O_115 NB_O_105	PS_20	PS_32	PS_49	BS_O_62 BS_O_43 BS_O_80 BS_O_89	WS_45-2	WS_46	PS_15	WS_26
12:00-13:00 Lunch Time								
13:00-14:30								
Oral Presentation	Panel Session	Panel Session	Panel Session	Panel Session	Work shop	Panel Session	Work shop	
Topic 5	Topic 1	Topic 4	Topic 1	Topic 2	Topic 4	Topic 5	Topic 2	
NB_O_123 NB_O_130 NB_O_86 NB_O_145	PS_7	PS_18	PS_48	PS_50	WS_16	PS_33	WS_51	
14:30-15:00 Break Time								
ROOM 102-104								
15:00-16:30								
Closing Ceremony								

OVERVIEW

CONGRESS THEME

The theme *"Education for Change: Botanic Gardens' Role in Addressing Global Challenges"* is reflected in five related topics.

HW / Enhancing health and wellbeing: Value of Botanic Gardens

• Exploring the connection between exposure to nature in botanic gardens, ecological awareness, and its positive impact on mental health.
• Developing educational programs that promote mindfulness, stress reduction, and emotional wellbeing through interaction with nature in botanic gardens.
• Recognizing and understanding eco-anxiety as a response to environmental challenges.
• Examining the role of therapeutic horticulture programs in botanic gardens for mental health.

BS / Breaking down silos: Building Interdisciplinary Partnerships

• Showcasing successful examples of interdisciplinary initiatives that integrate botany, climate science, and conservation education.
• Discussing the benefits and challenges of adopting a more holistic approach, interconnected approach to teaching in botanic gardens to address complex issues like biodiversity loss and other climate challenges.
• Creating partnerships between large botanic gardens and smaller local gardens to share resources, expertise, and best practices: 'Jardines Hermanos'.
• Setting up collaborative networks for enhancing educational programming and addressing common conservation challenges.
• Sharing benefits of using behaviour change approaches and behaviour-centred design frameworks to support positive action collaboratively.

PT / Harnessing the power of technology: Learning and Engagement for All

• Showcasing interactive educational tools within botanic gardens to enhance engagement and learning about climate challenges.
• Providing educators with adaptable teaching strategies to address evolving challenges in biodiversity and climate, fostering resilience and flexibility in their approaches.
• Incorporating gamification elements to the learning programmes.

EY / Empowering youth voices: Youth as Key Stakeholders in Climate Action

• Exploring effective communication strategies to engage and inspire youth in climate science and conservation: youth as change-makers.
• Fostering collaboration between youth, scientists, and educators to co-create climate research projects and drive meaningful action.
• Youth-led citizen science: Providing training and resources for youth to conduct climate-related research and contribute valuable data to scientific understanding.
• Empowering youth through volunteering: Creating opportunities for youth to actively participate in botanic garden initiatives through structured volunteering programs

NB / Leaving no one behind: Promoting Equity, Inclusion, and Community Engagement in Botanic Gardens

• Identifying and addressing socio-economic, cultural, and physical barriers that prevent marginalized communities from accessing and engaging with botanic gardens and educational programs.
• Engaging local communities in the co-creation of educational programs aimed at fostering awareness about conservation initiatives in botanic gardens.
• Incorporating indigenous perspectives, knowledge systems, and traditional ecological knowledge into botanical education and conservation efforts.
• Supporting efforts to safeguard and revitalize traditional languages, stories, songs, and ceremonies that are closely tied to botanical knowledge and practices.
• Integrating cultural heritage preservation into botanical education and interpretation programs within botanic gardens to foster appreciation for the interconnectedness of cultural and biological diversity.
• Examining how biocultural diversity contributes to the resilience and adaptive capacity of communities in the face of environmental change and socio-economic challenges

OVERVIEW

Workshop Session Format

Panel Session

- A panel session typically includes up to 5 speakers.
  There will be time for discussion with the participants at the end of the session.
- In a panel session, the chair introduces the speakers who then present on a particular topic or theme.

Workshop

- This type of session is structured for indepth exploration of one topic.
  The session is practical, interactive and actively involves all the participants.
- The workshop can be a science demonstration, a game, a show or a short training course.

World Café

- Participants are seated around tables and a series of conversational rounds begin.
- At the end the whole group gathers to share outcomes.

Round Table

- This session has an extended number of speakers (from 4 to 20),
  each seated at a roundtable to present their idea.
- This session also requires a chair to coordinate how it is run and bring the ideas together.

KEYNOTE& PLENARY SPEAKERS

Keynote

Jae Chun CHOE

Chair Professor, Division of Eco Science,
Ewha Womans University President of the Biodiversity Foundation Korea

9 June, 09:50 AM - 10:50 AM
Roles of Botanical Gardens in the Age of Climate Crisis

Shahbaz KHAN

Director of UNESCO Regional Office for East Asia and UNESCO
Representative to China, DPRK, Japan, Mongolia and ROK

9 June, 11:10 AM - 12:10 PM
Planting the Seeds of Change: Botanic Gardens and the UN Sustainable Development Goals

Plenary

Youmi LEE

Visiting Professor of Korea National University of Cultural Heritage

9 June, 1:30 PM- 2:30 PM
Gardens for Learning and Wellbeing : The Roles of Botanic Gardens and Arboreta in Korea

Vivian MALEMA

Director for Education and Empowerment Programmes of the South African National Biodiversity Institute (SANBI)

10 June, 9:00 AM - 10:00 AM
Breaking Down Silos : Building Interdisciplinary Partnerships through the Groen Sebenza and Fundisa for Change Programmes

Lujing CHEN

Founder of Yi Fang Jian Di, a popular science media platform

11 June, 9:00 AM - 10:00 AM
Into Plants and Into Oneself

Ingrid Sanchez TAPIA

Global Lead on Climate & Education of UNICEF, CEO of PlanetWise Development

11 June, 10:30 AM - 11:30 AM
Cultivating Young Voices: Botanical Gardens as Catalysts for Youth-Led Climate Action

Farmer TANTOH

Founder of Save Your Future Association

12 June, 9:00 AM - 10:00 AM
The Farmer Tantoh New Village Environmental Movement

KEYNOTE SPEAKER

Jae Chun CHOE

Chair Professor of Division of Eco Science, Ewha Womans University
President of Biodiversity Foundation Korea

An ecologist and ethologist who has spent his life observing humans and nature. After spending over a decade exploring the tropical regions of Central and South America to study animal ecology, he returned to Korea and has since worked to bridge the gap between natural science and the humanities, sharing and practicing knowledge and love for life. He has served as a professor at the Department of Biological Sciences at Seoul National University, co-president of the Korean Federation for Environmental Movement, president of the Ecological Society of Korea, and the inaugural director of the National Institute of Ecology. He is currently a Distinguished Professor at the Department of EcoScience at Ewha Womans University and the Chair of the Biodiversity Foundation. He received the Young Scientist Award from the Entomological Society of America in 1989 and the Korean Science and Culture Award in 2000. In 2019, he led over 500 animal behaviorists worldwide as the Editor-in-Chief to compile <the Encyclopedia of Animal Behavior>. He also runs a YouTube channel titled <Choe Jae-chun's Amazon>, where he shares a wide range of stories about humans and the natural ecosystem.

Education
Harvard University, PhD in Biology, 1990.
Dissertation: The evolutionary biology of Zoraptera (Insecta)
[Advisors: Bert HÖlldobler and Edward O. Wilson]
Harvard University, AM in Biology, 1986.
The Pennsylvania State University, MS in Ecology, 1982.
Dissertation: Community ecology of ectoparasites on Alaskan seabirds
[Advisor: K. C. Kim]
Seoul National University, BS in Zoology, 1977.

Research Experience and Professional Service
President, Ecological Society of Korea, 2006~2008.
Vice-president, Ecological Society of Korea, 2004~2006.
Chair, Division of EcoScience, Ewha Womans University, 2006~2008
Co-President, Korean Federation of Environmental Movement, 2007~2008
Junior Fellow, Michigan Society of Fellows, Sept. 1992~Aug. 1995
Predoctoral Fellow, Smithsonian Institution, June 1985~May 1988
Smithsonian Fellow, Smithsonian Tropical Research Institute, Panama, 1985~1988
Noyes Fellow, Organization for Tropical Studies, Costa Rica, 1984~1985

KEYNOTE SPEAKER

Jae Chun CHOE

9th JUNE, 9:50 AM - 10:50 AM

Roles of Botanical Gardens in the Age of Climate Crisis

I have served as the President of the Convention on Biological Diversity (CBD) during 2014~2016 and know very well that the researchers of biodiversity watch closely what is going on in the field of climate change. Climate change is among the most important causes to reduce biodiversity. Working as 'Climate Change Champion' of the UNFCCC since 2018, however, I learned that the experts in the climate change side paid little attention to biodiversity loss. The UN identifies the triple planetary crises—climate change, biodiversity loss, and pollution. These three crises are interlinked and together threaten the humanity. In addition to the obvious damages to the world ecosystems, there is also growing evidence that the crises contribute to a range of mental health challenges. Surviving through the COVID-19 pandemic, we learned the importance of healthy ecosystems. The healthier nature is, materially the more affluent and mentally the happier we become. To campaign this concept, I proposed the behavior vaccine and Eco-vaccine. Behavior vaccine is a way to protect ourselves rom pathogens by simple behavior such as wearing mask, washing hands, and social distancing. Eco-vaccine is a different way of saying 'nature conservation'. If over 70~80% of the world population get inoculated with eco-vaccine or participating in nature conservation, we will never suffer another pandemic. Botanical gardens have a special role in the campaign of world eco-vaccination.

KEYNOTE SPEAKER

Shahbaz KHAN

Director of UNESCO Regional Office for East Asia and UNESCO Representative to China, DPRK, Japan, Mongolia and ROK

Prof Khan joined UNESCO in 2008 at its Headquarters as Chief of the Water and Sustainable Development Section. Then he served as the Director of the Regional Bureau for Sciences in Asia and the Pacific in Jakarta, Indonesia, and UNESCO Representative to Indonesia, Brunei Darussalam, Malaysia, the Philippines and Timor-Leste (2015-2021).
Prof Khan has worked in Australia, France, Indonesia and Pakistan in various research, consultancy and policy positions. Before joining UNESCO, he was Professor and Director at the Charles Sturt University (Australia). His work has been widely recognized e.g. 2019 China Friendship Award, Great Wall Friendship Award China 2017, FEIAP Engineer of the Year Award 2016, UNESCO Team Award for Managing Hydro Hazards 2009, Land and Water Australia's Eureka Prize 2007, CSIRO Medal 2007, Biennial Medal of the Modelling and Simulation Society of Australia and New Zealand.
Prof Shahbaz Khan is currently Adjunct Professor at the University of Canberra and Western Sydney University (Australia), Adjunct Professor at the Lincoln University (New Zealand), Distinguished Professor at the National University of Science and Technology (Pakistan) and Distinguished Professor at the Capital Normal University (China).

Education
University of Birmingham, Honorary DSc, 2018.
National University of Malaysia, Honorary Doctorate in Environment and Development, 2016.
Imperial College London, MS in Applied Environmental Economics, 2007.
Macquarie University, MS in International Environmental Law, 2005.
University of Birmingham, PhD in Civil Engineering, 1995.
University of Birmingham, MS in Water Resources Technology and Management, 1992.
University of Engineering and Technology Lahore, BS in Civiil Engineering, 1990.

PLENARY SPEAKER

Shahbaz KHAN

9th JUNE, 11:10 AM - 12:10 PM

Planting the Seeds of Change:
Botanic Gardens and the UN Sustainable Development Goals

Botanic gardens play a pivotal role in advancing the United Nations Sustainable Development Goals (SDGs) by serving as centers for ecosystem monitoring, conservation, and public engagement. As living museums of biodiversity, they play a key role in protecting endangered species, research on restoring ecosystems, and helping communities adapt to climate change. These gardens are also outdoor classrooms, where people of all ages can learn about nature, science, and sustainability in a hands-on way.

Through programs like UNESCO's Man and the Biosphere (MAB), botanic gardens contribute to scientific research, conservation, and the exchange of traditional and Indigenous knowledge. They also help bridge the gap between scientists and the public, making science more open and accessible. By inspiring curiosity, fostering Education for Sustainable Development (ESD) and education in STEM fields, and supporting citizen science, botanic gardens empower people to take action for a greener future.

As we celebrate the International Decade of Science for Sustainable Development, let's recognize the role of botanic gardens in shaping a world where nature and people thrive together."

PLENARY SPEAKER

Youmi LEE

Visiting Professor of Korea National University of Cultural Heritage

She started as an official researcher at the Korea National Arboretum, served as the director general of the Korea National Arboretum and the head of the Korea National Sejong Arboretum, and worked as a business director at the Korea Arboretum Garden Management Institute, contributing to plant taxonomy and conservation research, education and policy development of arboreta and gardens throughout her life.
She served as a member of the IUCN SSC Korean Plant Specialist Group, of EABCN(East Asia biodiversity conservation network), CABCN(Central Asia biodiversity conservation network) chairperson, and as a vice-chairman of the UNESCO Korean Commission as well as a member of the Cultural Heritage Committee. She published many academic papers and books.

Education
Seoul National University, PhD in Forest Resources, 1992.
Seoul National University, MS in Forest Resources, 1987.
Seoul National University, BS in Forest Resources, 1985.

PLENARY SPEAKER

Youmi LEE

9th JUNE, 1:30 PM - 2:30 PM

Gardens for Learning and Wellbeing: The Roles of Botanic Gardens and Arboreta in Korea

Korea has long valued the harmony between nature and humanity, maintaining a tradition of practicing education and healing within natural settings. Traditional gardens such as Donggung and Wolji, the rear garden of Changgyeonggung Palace, and Soswaewon—a villa garden—go beyond being mere landscaped spaces. These gardens served as intellectual and cultural venues similar to Confucian academies or libraries, where academic research, literature, and philosophical thought were shared. As spaces for education and healing based on deep communication between humans and nature, they stand as representative examples of the educational and cultural value of traditional Korean gardens.

This philosophy of learning and healing based on nature has been carried forward into the modern and contemporary eras. The Hongneung Arboretum and Seoul National University Arboretum marked the beginning of this legacy, which has since continued through the National Arboretum operated at the national level, maintaining an educational function within the botanical garden system. Recently, the revision of the "Act on the Creation and Promotion of Arboreta and Gardens" has established "gardens" as a legally distinct concept from arboreta. This shift has expanded the social value of gardens beyond aesthetic landscaping, positioning them as spaces for healing and education. Notably, the introduction of the "garden city" concept in new urban developments led by local governments is becoming a significant turning point in promoting human-centered urban planning and the spread of sustainable ecological culture. Although arboreta and gardens are legally distinguished, the education and healing that occur within these spaces must be complementary. Arboreta are strong in scientific plant research, biodiversity conservation, and specialized education. Gardens, on the other hand, provide spaces for experience, culture, and healing, rooted in everyday life and emotional connection. Rather than being separated, these two domains can generate synergy through organic integration and evolve into a comprehensive ecological and cultural education platform. Therefore, while gardens and arboreta should maintain their individual identities, they must function as "partners on a continuum" in the realms of education and healing. Through this partnership, it will be possible to build a future-oriented garden-based education model that integrates biodiversity conservation and human-centered ecological learning. This presentation begins by highlighting the complex values of education and healing embodied in traditional Korean gardens, then explores the current trends in education and healing in modern gardens and botanical institutions, and finally proposes a direction for an integrated ecological and cultural education system.

PLENARY SPEAKER

Vivian MALEMA

Director for Education and Empowerment Programmes of South African National Biodiversity Institute

She has over 20 years managerial experience, 13 of which are as an SMS member in SANBI. Her role in SANBI has been in strategy development, implementation and oversight; fulfilling various leadership roles including being a member of the transformation committee, BAC chair and member, MANCO chair and member. She has led the development and implementation of the biodiversity human capital development strategy and fulfilled an oversight role in its high impact national programmes, e.g. Groen Sebenza and Fundisa For Change. The role involved managing multiple and complex mandates from donors/funders, multiple and complex stakeholders, significant budgets (+R600m) and multiple human resource teams internally and externally. In the role she ensured that targets for the Corporate Strategic Plan and Annual Performance Plan for her Directorate and Programme 3 are developed and met. In her role as an SMS member she has served in two boards thus sharpening governance, risk management and compliance skills.

Education
Gordon Institute of Business Science (GIBS), Global Executive Development Programme
Rhodes University, MED in Environmental Education
Northwest University, BA ED

Employment
Director at South African National Biodiversity Institute (SANBI), March 2010~Present.
Manager at Johannesburg City Parks, February 2004~February 2010.
Vivian Malema & Associates Consulting at Self Employed, January 2003~October 2004.
Technical Advisor at IBIS (Danish NGO), January 2001~December 2003.
Outreach & Coordinator at Delta Environmental Centre, January 1996~June 2001.

PLENARY SPEAKER

Vivian MALEMA

10th JUNE, 9:00 AM - 10:00 AM

Breaking Down Silos: Building Interdisciplinary Partnerships through the Groen Sebenza and Fundisa For Change Programmes

My presentation aims to demonstrate through the use of Fundisa For Change and the Groen Sebenza Programme how we succeeded to work with others across the sector building partnerships and networks that enabled us to build foundational knowledge and skills across various disciplines.

Fundisa For Change (F4C) is a teacher education programme implemented by a consortium of teacher education providers across the country. The programme aims to work with teachers and teacher educators to build foundational knowledge of teachers and teacher educators in the biodiversity conservation filed. This is borne out of necessity to train in-service teachers wo historically did not receive training in biodiversity education in their training.

The Groen Sebenza Programme on the other hand is a bridging into work programme working with unemployed youth (matriculants and graduates) aiming to bridge the gap between education and the world of work.

Both programmes involve working collaboratively with a number of organisations towards building capacities for biodiversity conservation and climate resilient communities. The presentation will illustrate the benefits that the biodiversity and the country has gained out of the two projects and the challenges of working within a multi partnerships approach.

PLENARY SPEAKER

Lujing CHEN

Founder of Yi Fang Jian Di, a popular science media platform

Ms. Lujing Chen is the founder of the popular science media platform “Yifang Jiandi” . she has over 14.5 million followers on the internet and garnered over 8 billion views of her content. On TikTok (Douyin), the hashtag she created, “#One Day One Plant,” has garnered over 8 billion views. As of January 2024, Ms. Chen is the top plant science communicator across all major short video platforms in China (Douyin, WeChat Channels, Xiaohongshu, Kuaishou, Bilibili).
She has been invited to contribute to CCTV News multiple times and has been a guest speaker for Chinese National Geography. In 2021, she was recognized as the Baidu Baike Annual Contributor and named the Annual Knowledge Creator on Xiaohongshu (Xiaohongshu is a lifestyle platform and entry point for consumer decision-making). Additionally, she was appointed as an advocate for the United Nations Environment Programme’s “Restoration Generation” and received the Fun Video Award at the China Wildlife Image Contest in 2022. She was also a guest speaker at the 2023 China Wildlife Image Contest and featured in a special recommendation on the Xuexi Qiangguo platform. In 2023, she won the first prize in the Fujian Province Science Popularization Works Creation Competition.

PLENARY SPEAKER

Lujing CHEN

11th JUNE, 9:00 AM - 10:00 AM

Into Plants and Into Oneself

Part 1: Self-Introduction

1. Introduction to the main content of "Yifang Jiandi" (一方见地), including plant science communication and poetic expressions of Chinese solar terms and natural changes. Selected videos will be played for explanation and demonstration.

2. Current platforms where "Yifang Jiandi" is published, with a brief overview of the features of each platform.
3. Introduction to the "Yifang Jiandi" team—myself and my husband.

Part 2: The Origin of "Yifang Jiandi"

1. Why we created "Yifang Jiandi": The story of how my husband and I connected with plants.
2. Why "Yifang Jiandi" became popular: Is there a "traffic password" (secret to success)?
3. Our daily workflow: How my husband and I divide tasks and collaborate.

Part 3: The Future of "Yifang Jiandi"

1. Our vision for what "Yifang Jiandi" should represent.
2. Potential extensions or expansions of "Yifang Jiandi."
3. Our perspective on plant conservation: How "Yifang Jiandi" is building a "virtual botanical garden."

PLENARY SPEAKER

Ingrid Sanchez TAPIA

Global Lead on Climate and Education of UNICEF

CEO of PlanetWise Development

A results-oriented leader with two decades of experience in international education, I possess a proven track record of designing and implementing strategic initiatives that improve learning outcomes and promote equitable access to quality education in diverse contexts. My expertise includes education reform, climate-resilient education, gender equality, skills development, and large-scale program management. I am skilled in building strategic partnerships, developing global public goods, and influencing education policy at global and national levels

Education
University of Michigan, PhD in Education, 2009~2013.
Deakin University, Gender in Development Certification, 2019
Universidad de La Frontera, MS in Science in Environmental Education, 2004~2006.
Universidad de los Andes, BS in Science Biology, 1997~2002.

Certification
F IIEP, Foundations of Disability-Inclusive Education Sector Planning, 2023.
University of Pennsylvania Social Norms, Social Change I, 2019.
University of California, Feminism and Social Justice, 2019.

PLENARY SPEAKER

Ingrid Sanchez TAPIA

11th JUNE, 10:30 AM - 11:30 AM

Cultivating Young Voices: Botanical Gardens as Catalysts for Youth-Led Climate Action

In an era of unprecedented climate change and biodiversity loss, botanical gardens are emerging as vital hubs for youth empowerment, education, and environmental innovation. This keynote address explores how botanical gardens are reimagining their roles to become dynamic platforms for youth engagement in climate action and biodiversity conservation, addressing key United Nations Sustainable Development Goals (UN-SDGs). Botanical gardens are uniquely positioned to offer immersive, hands-on learning experiences that equip young people with the knowledge and skills needed to address complex environmental challenges. By leveraging their living collections, scientific expertise, and often prime urban locations, they serve as powerful incubators for youth-led climate initiatives. This presentation showcases diverse examples from botanical gardens worldwide, highlighting innovative approaches to youth engagement and environmental education: In North Macedonia, UNICEF has collaborated with local partners to create an Experiential Learning Network (ELN) that includes the Skopje Botanical Garden. This network enhances access to extracurricular programs supporting national curricula, particularly in STEM and climate action. Annually, over 5,500 students across the country participate in hands-on experiences related to climate change and biodiversity, with a focus on marginalized communities and rural areas. Tenerife, Spain, demonstrates impressive transformation. A former city landfill has become a botanical garden with Europe's largest palm collection, serving as an educational backdrop for diverse groups. School children, migrant youth from African countries, and young professionals learn about biodiversity, water conservation, and how gardens and healthy ecosystems aid climate adaptation, especially for island ecosystems. In Medellin, Colombia, the botanical garden prioritizes climate change education, offering free workshops to young people, school children, and low-income communities. They support national goals of climate adaptation by sharing knowledge on biopesticides and biofertilizers with rural communities. Their outreach extends to remote rural areas, promoting social inclusion and youth leadership in marginalized communities. Tanzania showcases the power of partnerships. UNICEF has collaborated with botanical gardens nationwide to reach nearly 25,000 children in 77 schools, teaching seed germination and propagation. This initiative enables the establishment of school gardens, incorporating edible plants and pollinator-attracting flowers, while equipping students with skills for climate adaptation, biodiversity conservation, and food security. These examples illustrate how botanical gardens worldwide are adapting to meet young people's needs and aspirations, fostering a new generation of informed, empowered, and engaged environmental leaders. The presentation concludes by outlining a vision where botanical gardens are recognized as essential partners for young people. It calls on botanical gardens to prioritize youth engagement, create meaningful leadership opportunities, and position themselves as vital resources in the global youth climate movement. By evolving to meet young people's needs and providing platforms for youth voices, botanical gardens can play a crucial role in cultivating the skills, knowledge, and passion needed to address our planet's most pressing environmental challenges. In doing so, they contribute to key UN-SDGs while ensuring their own relevance and vitality in a rapidly changing world.

PLENARY SPEAKER

Farmer TANTOH

Founder of Save Your Future Association

He received a scholarship to study Tropical Agriculture and Rural Development at the Regional College of Agriculture in Bambili (Mezam, Northwest Region) in 2002. His studies were interrupted by Typhoid fever as a result of drinking unclean water. This led him to specialize in Spring Water Catchment Protection and Agroforestry. He graduated as Senior Agricultural Technician (with Higher National Diploma) in 2004. In 2005 he founded the Save Your Future Association (SYFA), a nonprofit-environmental organization supported by national and international volunteers. Because of his work with SYFA he was invited to study watersheds in the United States and Russia by the Tahoe-Baikal Institute in 2007. In 2010 he received a scholarship from the United States Department of State, allowing him to graduate from the Northeast Wisconsin Technical College with a certificate of Sustainable Organic Farming Practices and Horticulture in 2011. Farmer Tantoh was elected Ashoka fellow in 2012 and Forest Nation ambassador in 2015. He was also among the finalists for the 2016 Africa Youth Awards. Publication of a nonfiction picture book entitled I Am Farmer, chronicling Farmer Tantoh's life, is slated for spring 2019 by Millbrook Press.

Education
Northeast Wisconsin Technical College, Certificate in Horticulture and Landscaping/Sustainable organic farming practices, 2010~2011.
Tahoe Baikal Institute, Certificate of Training in watershed management, 2007.
Regional College of Agriculture, Higher National Diploma in Agriculture (spring water catchment protection and agro-forestry), 2002~2004.

PLENARY SPEAKER

Farmer TANTOH

12th JUNE, 9:00 AM - 10:00 AM

The Farmer Tantoh New Village Environmental Movement

Cameroon -a country located in Central Africa is home to around 9000 species of plants, with over 500 of these species' endemic to Cameroon, meaning they are found nowhere else. With the diversity of plant variety across the country, there are only four Botanical gardens with Limbe Botanic gardens the most prominent and oldest.

Growing up as a teenager in rural Cameroon, I thought that Botanic Gardens was the concept of the Western world and that there was no need to protect and conserve plant diversity. Over the years, I started noticing that population pressure on arable land vis-à-vis effects of climate change is causing plant diversity to disappear while some are facing extinction. In order to prevent this, I conceived the creation of a small miniature Botanical Garden in my native town of Nkambe to educate the community on the importance of gardens (for food, medicine, research and leisure). This garden inspired over twenty-five villages to start planting flowers, trees and lawns in their various homes. From 2005 till date, over 1000 home gardens have been planted in the Northwest Region of Cameroon.

To further expand this innovation, I conceived The Farmer Tantoh new village environmental movement with the vision to elect fellows known as "Farmer Tantoh Fellows". They shall represent me in their villages and engage their communities into environmental protection through the creation of miniature Botanical gardens in each village. This shall inspire each household to plant trees, flowers and lawns hence preserving plant diversity and transforming the village into a self-sustaining, vibrant eco-friendly community. Over 12 fellows have been identified (both males and females) and one fellow has officially kick-off with the movement.

Above all, my story "I am Farmer", growing an environmental movement in Cameroon is inspiring children across the globe to learn from my journey to become future farmers and environmental activists.

PROGRAMME

DAY 1

The 11th INTERNATIONAL CONGRESS
ON EDUCATION IN BOTANIC GARDENS

OVERVIEW

CONGRESS TIMETABLE **DAY 1**

09:50-10:50	Keynote Speech 1 / **Room 102-104** Roles of Botanical Gardens in the Age of Climate Crisis **Jae Chun CHOE** (Chair Professor of Division of Eco Science, Ewha Womans University, President of Biodiversity Foundation Korea)							
11:10-12:10	Keynote Speech 2 / **Room 102-104** Planting the Seeds of Change: Botanic Gardens and the UN Sustainable Development Goals **Shahbaz KHAN** (Director of UNESCO Regional Office for East Asia and UNESCO Representative to China, DPRK, Japan, Mongolia and ROK)							
13:30-14:30	Plenary Speech 1 / **Room 102-104** Gardens for Learning and Wellbeing: The Roles of Botanic Gardens and Arboreta in Korea **Youmi LEE** (Visiting Professor of Korea National University of Cultural Heritage)							
15:00-16:30	Oral Presentations	Panel session	Panel session	Lightning talks	Oral Presentations	Workshop	Workshop	Workshop
	Topic 5 **Chair : Thal JONAS**	Topic 1	Topic 2	**Chair: Joohwan KIM**	Topic 1 **Chair : Till HAEGELE**	Topic 3	Topic 2	Topic 5
	Room 101	Room 102	Room 103	Room 104	Room 105	Room 209A	Room 209B	Room 210
	NB_O_4 Scaling Impact: Translating Global Goals into Local Action through Botanic Garden Education Tara MOREAU	**PS_12** Education and Research for Plant Conservation and Sustainable Management in Indonesia **Amaliah FITRIAH** (Education Attache) **Marga ANGGRIANTO** (Bogor Botanical Garden) **Zaenal ARIFIN** (Bogor Botanical Garden) **Dr. Sasa Sofyan MUNAWAR** (National Research and Innovation Agency) **Prof. Rinekso SOEKMADI** (IPB University) **Prof. Inda SETYAWATI** (IPB University) **Prof. Rita Kartika SARI** (IPB University) **Dr. Dewi Anggraini SEPTANINGISH** (IPB University) **Prof. Hosang KANG** (Seoul National University) **Dr. Jeongho PARK** (Asia Forest Institute) **Hyeyoung JIN** (Korea National Arboretum)	**PS_44** A New Direction for Botanical Garden and Arboreta Education - Collaboration between Local Communities and Public Education **Taehee YIM** (Gyeonggi Office of Education) **Hyekyung KIM** (Gyeonggi Office of Education) **Dr. Sangkuk HAN** (Korea National Arboretum) **William (NED) FRIEDMAN** (Arnold Arboretum of Harvard University)	**HW_O_138** **Suhwan NAM** **BS_O_54** **Santiago BRAVO SANCHEZ** **BS_O_139** **Hoejin KIM** **BS_O_174** **Apolinario CARINO** **BS_O_5** **Fifilyana KARIM** **PT_O_78** **Hong WU** **EY_O_141** **Hyejin KIM**	**HW_O_6** Leveraging Youth Education for Urban Greening in Miami **Carl LEWIS** **HW_O_72** Enhancing Health and Well-Being through Medicinal Plant Education: A Sustainable Model at Key-Chungsan Botanic Garden **Eunsil LEE** **HW_O_143** Inclusive Green Care_Community-Based Companion Plant Clinic **Yonghun CHI**	**WS_1** AR-Based Forest Education for Carbon Neutrality **Siyeon HA** (National Institute of Forest Science) **Jaehyeok CHOI** (National Institute of Forest Science) **Seunghyeon KIM** (National Institute of Forest Science) **Baekyeon KIM** (National Institute of Forest Science)	**WS_45-1** Climate Change Action – What More Can We Do? Creating a Declaration of Intent to Address Climate Change Goals (Part One of Two) **Helen MILLER** (Botanic Gardens Conservation International)	**WS_31** Participatory Art: Visual Dialogues about Plants **Dr. Ásthildur B JONSDOTTIR** (University of Iceland)
17:00-18:30	Oral Presentations	Panel session	Panel session	Lightning talks	Oral Presentations	Workshop	Workshop	Workshop
	Topic 2 **Chair : Amy PADOLF**	Topic 4	Topic 2	**Chair : Siti Syuhada SAPNO**	Topic 4 **Chair : Tara MOREAU**	Topic 2	Topic 4	Topic 5
	Room 101	Room 102	Room 103	Room 104	Room 105	Room 209A	Room 209	Room 210
	BS_O_2 Growing Together: Outreach trategies to Engage New Audiences **Sally FIERENZI** **BS_O_17** Integrating eritage and Botany: The Qur'anic Botanic Garden as a Platform for Science, Education, and Sustainability **Mohamed ASSONA** **BS_O_19** Surveying irectors' and Educators' Perspectives on Botanic Garden Education – A Shared Vision? **Harald RAAIJMAKERS** **BS_O_55** History, Mission, and Future Vision of Arboretum Education Focusing on Korea National Arboretum Shared Vision? **Heeyoung RYU**	**PS_13** The Role of the Baekdudaegan Global Seed Vault(BGSV) as a Practical Tool for Climate Action **Hoejin KIM** (Korea Arboreta and Gardens Institute)	**PS_30** Connecting to Tree Energy: An Abundant yet Untapped Resource for Human Wellbeing **Bian TAN** Josephine WOO (Kadoorie Farm and Botanic Garden) Claire ELOUARD	**NB_O_63** (Video Session) Myranel CANCERAN **EY_O_173** (Video Session) Irish SEQUIHOD **EY_O_52** **Santiago BRAVO SANCHEZ** **EY_O_179** **Fazidah ISMAIL** **NB_O_98** **Aleksey KIM** **NB_O_133** **Gopidi Chandrashekar REDDY** **NB_O_184** **Anna VOROBEVA**	**BS_O_2** The Effect and Satisfaction of Carbon-Neutral Forest Education for Youth **Jaehyeok CHOI** **EY_O_8** See, Sow, Taste - Hands On Exercises on Cultivating Edible Plants with 4-16 Year Old Students **Bjork THORLEIFSDOTTIR** **EY_O_24** The Value of Forest Education in Korea; Climate Crisis, Low Birth Rate and Smartphone Addiction Era **Byungki AHN** **EY_O_95** We Can Change Our World: Design Thinking in the Classroom **Tracy MCCLENDON**	**WS_40** Plants and People: A Portable Exhibition for Families **Maxime BOERSMA** (Hortus botanicus Leiden) **Nuala TEERINK** (Hortus botanicus Leiden) **Thal JONAS** (Hortus botanicus Leiden)	**WS_37** Changing the Direction of Forestry Experts' Education to Respond to the Climate Crisis (Part 1,2) **Kyungtaek HWANG** (Ecoplay Institute) **Aekyeong AN** (Forest on)	**WS_47** Participatory Art: Visual Dialogues about Plants **Dr. Ásthildur B JONSDOTTIR** (University of Iceland)

Outdoor Workshop
Time : 9 JUNE 15:00 - 16:40, Place: Bongeunsa Temple (531 Bongeunsa-ro, Gangnam-gu, Seoul)

Topic 2 **WS_17**
Art Meets Science: A Collaboration for Learning and Growth | **Claire MOSLEY** (Royal Botanic Gardens Victoria)

Scaling Impact: Translating Global Goals into Local Action through Botanic Garden Education

9th June 15:00-16:30

T.L. MOREAU[1]

[1]University of British Colombia Botanical Garden, Vancouver, British Columbia, Canada
*Corresponding author email: tara.moreau@ubc.ca

Keywords: biodiversity education, community-based planning, Conservation, Education, Engagement

Botanic gardens serve as vital community hubs for translating global sustainability goals into local and regional action. By sharing lessons learned we can expand our impact and strengthen community engagement. Join UBC Botanical Garden to learn how we have been designing and delivering policy-aligned educational programs that focus on mobilizing action towards the UN-Sustainable Development Goals (UN-SDGs) and the Kunming-Montreal Global Biodiversity Framework (KM-GBF).

This session will introduce participants to logic models developed for two of our key educational initiatives: the Sustainable Communities Field School (Field School) and the Community Outreach Program (COP). Logic models and Theories of Change provide a roadmap for organizing and communicating the impact of education across different audiences and activities. These tools are instrumental for program evaluation, continuous improvement and securing funding to increase accessibility for underserved communities. Established in 2015, the Field School is focused on increasing awareness of the UN-SDGs through engagement with businesses, government, First Nations and youth. The current 5-year impact plan (2021-2026) is mobilizing knowledge, action and networks through A – Adaptation Planning, B – Biodiversity Conservation and C- Climate Education. A key goal of the program has been to reach new audiences through diverse educational activities such as team building tours, field trips, workshops, train-the-trainer webinars and SDG solution labs. The Community Outreach Program is focused on increasing access to nature for children, schools and families. Through annual events such as Biodiversity Days and engagement with local schools, the program aims to leave no one behind and works directly with community groups to foster inclusive hands-on learning experiences that connect people with plants and biodiversity. Participants will explore the theory of change behind sustainability programming at UBC Botanical Garden and take with them examples to get started on building educational logic models for scaling action and impact.

Birthworts & Birdwings – Urban Habitat Creation Project by Kadoorie Farm and Botanic Garden in Hong Kong

9th June 15:00-16:30

H.Y. LO[1,*], C. WILLIAMS[1]

[1]Kadoorie Farm and Botanic Garden (KFBG), Hong Kong, China
[*]Corresponding author email: fiona.lo@kfbg.org

Keywords: Aristolochia acuminata, Troides, Kadoorie Farm and Botanic Garden, Hong Kong, Life-wide learning, Urban habitat creation project

Life-wide learning is a curriculum strategy promoted by the Education Bureau of Hong Kong to enable students to achieve whole-person development that is difficult to otherwise attain through ordinary classroom-based learning. To raise awareness among students and teachers about the importance of Hong Kong native plants and to integrate this objective into the school curriculum, Kadoorie Farm and Botanic Garden has designed an urban habitat creation project for both primary and secondary schools commencing June 2024, with a view to fulfilling two of the eight elements of life-wide learning, namely, science education and personal, social & humanities education. The birthwort Aristolochia acuminata is a native vine with several ethnobotanical uses in traditional Chinese culture that is protected by law. It is the main host plant for the only legally protected insects in Hong Kong, the Common and Golden Birdwings (Troides helena and Troides aeacus), and it is also used by the Common Rose (Pachliopta aristolochiae). By training students how to plant and grow A. acuminata on school campuses, we aim to nurture young minds through exposure to science, horticulture and conservation, whilst creating habitat for these rare butterflies in urban spaces. The application of practical and experimental tools, methods and online resources offers students extensive exposure to different aspects of botanical and ecological knowledge. In this oral presentation, we will describe the components of this project, highlighting teacher training, talks for students, planting workshops and content development of teaching materials, in addition to emphasising related conservation knowledge. Progress of the first cohort of schools that have adopted this programme will be presented, providing insights into how students are now getting engaged in this cross-cutting initiative.

NB_O_47

Using Social Science Research to Inform the Design of Welcoming Visitor Experiences in Botanic Gardens

9th June 15:00-16:30

A.E. BOLTON[1*], E.E. HESTNESS[1], D.I. HAYDE[2], D.L. WASSERMAN[2], L.E. WEISS[2]

[1]United States Botanic Garden, Washington, D.C., USA
[2]Center for Science and Industry, Center for Research and Evaluation, Columbus, Ohio, USA

[*]Corresponding author email: amy.bolton@aoc.gov

Keywords: inclusive, design, research, social science, theory into practice, co-creation

Botanic gardens are unique spaces where people can connect with plants in powerful, personally relevant ways. As botanic gardens strive to expand their audiences and provide a welcoming environment for all, engaging in social science research about the design of garden experiences can support these efforts. The United States Botanic Garden (USBG) is partnering with the Center of Science and Industry's Center for Research and Evaluation (COSI's CRE) to study visitor engagement with 'What Tastes Like Home', an interactive element in the USBG exhibition Cultivate: Growing Food in a Changing World. In this interactive, visitors are invited to reflect on the question, "What tastes like home?" and place a note with their response on a wall in the exhibition. The rich, personal contributions visitors left inspired the USBG to collaborate with CRE's researchers to better understand the features of this experience. Through a literature review, observations, surveys, and interviews, our project addresses the research question, "In what ways can public garden designers best utilize the unique public garden environment to create welcoming learning settings for all?" We have also emphasized co-creation by inviting the USBG Learning and Engagement team to participate in the study development, implementation, and analysis – thereby helping increase the USBG team's professional knowledge and skills in research methods and the COSI team's understanding of the garden context. This presentation will describe the study, methods, and findings. We will also describe the relationship between the research team and USBG team, including our approach to skill building and knowledge sharing. Finally, we will demonstrate the practical application of research findings into our visitor experience.

Leveraging Youth Education for Urban Greening in Miami

9th June 15:00-16:30

C.E. LEWIS[1,*], and A.E. PADOLF[1]

[1]Fairchild Tropical Botanic Garden, Coral Gables, Florida, USA

[*]Corresponding author email: clewis@fairchildgarden.org

Keywords: urban greening, botany education, citizen science, native plants, community engagement, sustainability

Fairchild Tropical Botanic Garden is working with community partners to transform Miami into a more resilient, biodiverse, and livable tropical city. This effort aligns with municipal goals to expand the urban tree canopy and increase the use of native plant species. Two major educational programs are key contributors to this effort: The Fairchild Challenge and the BioTECH high school partnership. The Fairchild Challenge engages over 300 local schools in botanically themed citizen science projects, including urban temperature monitoring, innovative gardening techniques, landscape design, and propagation of endangered native plants. In parallel, BioTECH—a first-of-its-kind public high school where students specialize in botany—focuses on advanced research, such as analyzing historic plant collection data, evaluating diverse landscape strategies, and examining how rising temperatures influence plant selection for urban environments. Preliminary findings from these initiatives are informing Fairchild's urban greening approaches, providing empirical data and practical solutions for city-wide application. By combining formal education, conservation, and applied research, these programs empower the next generation of environmental stewards to shape Miami's future. This model may offer insights for other cities seeking to enhance sustainability and community-driven approaches to urban greening.

Enhancing Health and Well-Being through Medicinal Plant Education: A Sustainable Model at Key-Chungsan Botanic Garden

9th June 15:00-16:30

E.S. LEE[1,*], M.H. KIM[1]

[1]Key-chungsan Botanic Garden, Gyeongsangbuk-do, Republic of Korea

[*]Corresponding author email: keybotanic@gmail.com

Keywords: medicinal plants, botanic garden education, herbal therapy, sustainable wellbeing, Community health awareness, experiential learning

Medicinal plants play a crucial role in health and well-being, yet their benefits remain underappreciated due to a lack of public awareness and expertise. While certification programs for medicinal plant specialists exist, there is a need for a hands-on education center where participants can observe, collect, and process medicinal plants while learning their ecological roles and applications.

The Keychungsan Botanical Garden specializes in traditional Korean medicinal plant education, integrating centuries-old knowledge from Donguibogam and Sasang Medicine with modern scientific findings. Its 12-week, 36-hour program, based in the Medicinal Plant Specialist Exhibition Hall, combines theory and practice. Participants explore medicinal plant evolution, sensory properties, and Korean medical interpretations while engaging in workshops on herbal tea, ointment, and soap making.

The Sasang Herb Garden offers constitution-based herbal education, emphasizing the connection between plants and human health. This program fosters an appreciation for medicinal plants, reinforcing the idea that “God did not give humans only disease, but also a cure.” By cultivating curiosity and public engagement, it aims to contribute to the future of the plant bioindustry and sustainable health solutions.

HW_O_143

Inclusive Green Care Community-Based Companion Plant Clinic

9th June 15:00-16:30

Y.H. CHI[1*], H.S. JEONG[1] and H.E. ROH.[1]

[1]Korea Arboreta and Gardens, Sejong National Arboretum, Republic of Korea

[*]Corresponding author email: gandhi37@koagi.or.kr

Keywords: Companion plants, Outreach Education, Community, Vulnerable groups

Our organization operates the Inclusive Green Care: Community-Based Companion Plant Clinic, ensuring that plant care education and support are accessible to all. This program includes: (1) Companion plant health diagnosis and personalized care consultations, (2) Hands-on plant care education, (3) Mobile companion plant clinic services, and (4) Plant nurturing and sensory experience activities. Participants engage in activities such as seed planting, plant care practice, and sensory experiences (touch and aroma) to strengthen their connection with plants and enhance their caregiving skills. Additionally, we plan to collaborate with mobile obstetric services to integrate plant care programs with healthcare support, expanding efforts to address depopulation challenges and enhance community engagement. Moving forward, we will continue to develop and expand this initiative in partnership with local communities.

Growing Together: Outreach Strategies to Engage New Audiences

9th June 17:00-18:30

S. FIERENZI[1]

[1]Royal Botanic Gardens Victoria, Melbourne, Australia

*Corresponding author email: sally.fierenzi@rbg.vic.gov.au

Keywords: partnerships, outreach, community engagement, innovative education

Collaborative partnerships are crucial for expanding the reach and impact of botanic gardens, enabling them to engage with diverse communities and foster environmental stewardship. At Royal Botanic Gardens Victoria, partnerships have played a pivotal role in developing innovative educational programs that promote plant science, conservation, and nature connection. Through innovative programs such as Raising Rarity, Biomimicry Regional Gardens Outreach, and Growing Beyond Earth, the Gardens have extended their influence beyond traditional audiences, reaching both local and global communities. These programs exemplify how working with other botanic gardens—both large and small—enhances public engagement by sharing knowledge, exchanging skills, and accessing new resources and networks. Partnerships allow botanic gardens to design and deliver programs that reflect diverse perspectives, challenge conventional approaches, and foster long-term community relationships. For instance, Raising Rarity emphasizes plant conservation through community participation, while the Biomimicry Regional Gardens Outreach program connects regional audiences with nature-inspired design. Meanwhile, Growing Beyond Earth encourages citizen science by involving participants in plant research for space exploration. By embracing collaboration, botanic gardens can redefine their role as dynamic centres for community engagement and learning innovative. These programs offer practical insights into building and sustaining effective partnerships that enrich educational offerings and strengthen public connections to nature. Through working together botanic gardens can continue to evolve as accessible, forward-thinking institutions that inspire, educate, and engage diverse audiences.

Integrating Heritage and Botany: The Qur'anic Botanic Garden as a Platform for Science, Education, and Sustainability

9th June 17:00-18:30

Mohamed M. HASSONA[1,*], Abdulrahman Al-HAMMADI[1], Fatima S. Al-KHULAIFI[1]

[1]Qur'anic Botanic Garden, Hamad bin Khalifa University, P.O. Box 34110, Doha, State of Qatar

[*]Corresponding author email: mhassona@hbku.edu.qa

Keywords: heritage, conservation horticulture, plant propagation, biodiversity preservation, environmental education, sustainable botanic gardens

The Qur'anic Botanic Garden (QBG) serves as a pioneering model for integrating plant conservation, horticultural science, and cultural heritage, demonstrating the critical role of botanic gardens in environmental stewardship. Rooted in the botanical references of the Holy Qur'an and Hadith, QBG undertakes the conservation of significant plant species through scientific propagation techniques such as seed banking, ex situ cultivation, micropropagation, and traditional nursery practices. These efforts contribute to the preservation of rare, endangered, and culturally important species, supporting biodiversity conservation and ecological resilience. A key aspect of QBG's conservation strategy is conservation horticulture, which combines traditional knowledge with modern botanical methodologies to enhance plant propagation, habitat restoration, and sustainable management. The garden's propagation programs aim to rehabilitate plant species under environmental stress, restore degraded ecosystems, and ensure long-term genetic diversity through scientifically guided cultivation and reintroduction practices. In addition to its horticultural research, QBG functions as an interdisciplinary educational platform, bridging botanical science, religious studies, and sustainability education. Through public engagement programs, workshops, and collaborative research, the garden fosters awareness of the ecological significance of Qur'anic plant species while advocating for sustainable horticultural practices. Partnerships with regional and international institutions further strengthen QBG's role in knowledge exchange, conservation policy development, and biodiversity research.

By integrating heritage, conservation, and scientific innovation, the Qur'anic Botanic Garden exemplifies how botanic gardens can extend beyond their traditional roles, serving as centers for environmental education, plant preservation, and interdisciplinary collaboration. This presentation will highlight QBG's contributions to conservation horticulture, plant propagation, and sustainability, demonstrating its impact on biodiversity conservation and cultural preservation in an evolving ecological landscape.

BS_O_19

Surveying Directors' and Educators' Perspectives on Botanic Garden Education – A Shared Vision?

9th June 17:00-18:30

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Keywords: survey, educational practices, educational resources, partnerships, learning, public engagement.

Botanic gardens across the world act as 'living museums' of plant life and seek to serve as dynamic venues for educational visits. However, how botanic gardens worldwide facilitate education and engage visitors with their collections is understudied. To provide a comprehensive overview of contemporary practices, resources and challenges, we present preliminary findings from a recently conducted Botanic Garden Education (BGE 2025) survey. As a previous international survey on education in botanic gardens was undertaken nearly two decades ago (Kneebone & Willison, 2007), we believe an update is essential. The aim of this study is to provide robust indicators and policy-relevant analyses derived from international data collected from botanic garden directors and educational staff concerning their professional practices, and the gardens' conditions for learning and public engagement. Five key areas were addressed in the survey (I) the botanic garden's mission and priorities, (II) the composition and profession of educational staff, (III) educational methods and resources, (IV) future challenges, and (V) facilities and partnerships. The study will provide valuable insights into the educational role of botanic gardens and offer a data-based opportunity for further discussion within the botanic garden community, and beyond.

BS_O_55

History, Mission, and Future Vision of Arboretum Education Focusing on Korea National Arboretum

9th June 17:00-18:30

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Keywords: Arboretum Education, Korea Arboretum, Plant Education, Mission of Botanic garden education, Learning in Nature

The Korea National Arboretum (KNA) was established in 1987 under Gwangneung Arboretum. It was renamed in 1999 when it became an independent branch of the Korea Forest Service. The KNA is located in Gwangneung Forest, which has a history spanning hundreds of years. This forest is named after the mausoleum of King Sejo from the Joseon Dynasty. During the Joseon era, the area was under the administration of the royal family and served as a hunting ground frequently visited by King Sejo. In 2010, Gwangneung Forest was designated a UNESCO World Heritage Site. The KNA has introduced the Green School program for primary school students and offers educational opportunities for various age groups. These include forest interpretation, experiences with Korean plants, classroom learning, public education, and adult education. Since 2003, educational program research has been recognized as one of KNA's primary research areas. The KNA is dedicated to systematizing and diversifying its educational programs while fostering partnerships between the Arboretum, local communities, and businesses. This collaboration aims to promote cooperative educational initiatives. By providing education for everyone, regardless of age, social class, or region, the KNA seeks to contribute to individuals' well-being and the health of the global ecosystem.

The Effect and Satisfaction of Carbon -Neutral Forest Education for Youth

9th June 17:00-18:30

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Keywords: Carbon-neutral, Forest education, KAB model, Education program

This study aims to evaluate the educational effectiveness of a carbon-neutral forest education program targeting upper elementary and middle school students. To this end, the Korea Forest Service developed and implemented the program in 2022 for carbon-neutral-focused and pilot schools. To verify the program's effectiveness, pre- and post-surveys were conducted to assess students' perceptions of forests, the effectiveness of the carbon-neutral forest education program (in terms of knowledge, attitude, and behavior), and their satisfaction with the program. Data from 895 respondents who completed both the pre- and post-surveys were analyzed. The analysis revealed that the use of a word cloud to examine perceptions of forests showed an increase in carbon-neutral-related terms among students after participating in the program, indicating its contribution to spreading the concept of carbon neutrality. The program was statistically significant in improving knowledge, attitude, and behavior across all areas ($p<.01$), with the greatest improvement observed in the behavior domain. When analyzed by educational level, both upper elementary and middle school students demonstrated positive changes in all domains, but upper elementary students reported slightly higher overall satisfaction with the program than middle school students. In conclusion, the carbon-neutral forest education program effectively enhanced upper elementary and middle school students' awareness of carbon neutrality, improved their knowledge, attitudes, and behaviors, and fostered positive perceptions of forests. This study provides evidence of the program's importance and effectiveness, highlighting the need for its continued promotion and development in the future

See, Sow, Taste – Hands On Exercises on Cultivating Edible Plants with 4-16 Year Old Students

9th June 17:00-18:30

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Keywords: seeds, biodiversity, food security, schools, growing, children

See, sow, taste is a hands-on project where kindergartens and schools get to grow seeds from the Nordic countries' joint seed collection. The aim is to teach children from the ages of 4-16 about where food comes from, how plant based food is produced, and to show the diversity of the flora of edible plants so far north on the planet.

See, sow, taste is a collaboration project that was instigated by the Nordic Genetic Resource Center (NordGen) with the Reykjavik Botanic Garden and the Nordic House in Reykjavik in 2023. In 2024 the project was extended to the Nordic House in the Faroe Islands and several botanic gardens in Lithuania. In Iceland alone over 2000 children have participated in the project.

The participating schools received educational packages with seeds for cultivation, instructions, information about the crops and well as discussion questions and examples of activities. Four educational packages were offered free of charge, designed for different ages. The children then grew their seeds in the schools but were invited to visit the Reykjavik Botanic Garden where a display garden with cultivated plants from the same seeds was set up in the kitchen garden collection, and projects were available on site related to the theme of Nordic, locally grown edibles.

Projects like See, sow, taste are great tools for botanic gardens in terms of reaching out to schools and sharing knowledge on the effects of climate change on growing food and food security with children on their level. Taking botanic and climate linked education outside of the gardens and offering DIY projects like this is also a good choice for small botanic gardens that don't have the staff numbers to meet all the groups that want to take part in educational projects on food and climate change on site.

The Value of Forest Education in Korea; Climate Crisis, Low Birth Rate and Smartphone Addiction Era

9th June 17:00-18:30

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Keywords: Forest education, Forest kindergarten, Friedrich Fröbel, Ecological sensitivity, Climate crisis, Korean case

The Republic of Korea's journey in forest education, though relatively brief, has yielded remarkable achievements since 2000, thanks to collaborative efforts from central and local governments, educational institutions, and private sector leaders. Today, Korea boasts impressive 500 forest kindergartens, 24 forest education centers, and over 30,000 licensed forest education experts. However, Korea faces significant social challenges. Despite its economic success, the country grapples with high suicide rates, intense competition for college entrance, and one of the lowest birth rates among OECD nations, contributing to a pessimistic outlook for the future. In response to these challenges, forest education has emerged as a valuable policy initiative, particularly for children and teenagers. This focus is timely, considering three critical issues: 1) Climate Crisis: Forest education promotes environmental awareness and action. 2) Demographic Shift: With a declining birth rate, nurturing childen becomes increasingly important. 3) Social Disconnection: Forest education offers an antidote to the isolation caused by excessive smartphone use, fostering real-world connections and experiences. The success of forest education in Korea is rooted in the country's remarkable reforestation campaign, which began in 1973. This nationwide effort, driven by passionate citizen participation, resulted in the planting of over 10 billion trees. Forest education represents a tangible outcome of this successful initiative. Drawing inspiration from German pedagogue Friedrich Fröbel's philosophy that "Play is the highest expression of human development in childhood," Korea has developed comprehensive forest education programs. These programs aim to nurture children's innate curiosity and connection with nature. Recent developments in Korean forest education include: 1) Tailored programs for elementary school students, 2) Specialized forest experiences for families, 3) Local, domestic, and global participation events for children and diverse youth group. These initiatives align with the 2025 ICEBG's focus on "Empowering youth voices: youth as key stakeholders in climate action."

EY_O_95

We Can Change Our World: Design Thinking in the Classroom

9th June 17:00-18:30

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Keywords: youth programs, climate change, design thinking

It has never been more important for young people to understand the power they hold to enact positive change through their own actions and choices, and to give them the tools to be successful in those endeavors. The Atlanta Botanical Garden empowers students and educators to utilize design thinking principles to creatively solve problems. Those problems could be as big as increasing biodiversity in their community or as small as designing a garden for pollinators. Design thinking is a creative, interdisciplinary approach to problem solving that can be adapted to any age group, topic, or budget.

Highlighting illustrative examples from Atlanta Botanical Garden's Youth Internship Program and its Educator Workshop series, participants will learn about how gardens can use design thinking to improve student engagement. This presentation will cover the steps of design thinking, how it can be used in different contexts, and how it works across disciplines to deepen students' connection to their curriculum. Botanical gardens can support students and educators in creating innovative solutions to the problems within their communities.

Effectiveness Verification and Expansion Strategies of Digital Therapeutic Garden for Socially Vulnerable Groups

9th June 15:00-16:30

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Keywords: Korea National Garden Culture Center (KNGCC), Digital Therapeutic Garden, Verification of Therapeutic Effectivenes

The Korea National Garden Culture Center (KNGCC) is a specialized institution dedicated to promoting garden culture. It was established to bring happiness to the public and to spread the culture of gardens. The Korea National Garden Culture Center (KNGCC) operates various initiatives to implement garden welfare for the public, including providing welfare services, expanding garden infrastructure, and conducting research on garden-based Therapy. We plan to create and utilize a new model garden, the Digital Therapeutic Garden, for socially vulnerable groups and expand the verification of its therapeutic effectiveness. In particular, we plan to develop and distribute garden infrastructure to expand the Digital Therapeutic Garden. In 2025, we will verify not only the mental therapeutic effects but also the physical therapeutic effects in the established Digital Therapeutic Gardens and therapeutic gardens within living areas.

BS_OL_54

Quito's Botanical Art: A Shared Experience through Botanical Illustrations of 18th Century Spanish Expeditions

9th June 15:00-16:30

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Keywords: Botanical illustration; Environmental education; Art & Science; Education & Innovation

Botanical illustrations were one of the key resources of the Royal Botanical Expeditions of the late 18th century, sponsored by the Spanish Crown in the American territories. These illustrations were used to identify and record new interesting species. The aim of this shared experience between Madrid Royal Botanic Garden-CSIC and Padre Julio Marrero Botanic Garden of the Pontifical Catholic University of Ecuador (Santo Domingo campus), was to create an exhibition to teach about native Ecuadorian species and their representation through the novel artistic techniques used by Quito painters on the royal botanical expeditions. The exhibition consists of high-quality reproductions of a total of 69 illustrations from the historical archives of the Madrid Royal Botanic Garden. 47 drawings belong to the collection of the Royal Botanical Expedition to the New Kingdom of Granada and 28 to that of the Viceroyalty of Peru. The drawings were selected according to two criteria: representing Ecuadorian flora and the Ecuadorian nationality of their authors. The exhibition travelled to three cities in Ecuador: Quito, Santo Domingo and Ibarra. Students visiting the exhibit also took part in some environmental education projects, including creating recycled paper and drawing illustrations with plant dyestuffs. Finally, a space for the exchange of ideas on art and science was created to perfect this innovative educational initiative.

Establishing a Convergent Education Partnership for Seed Conservation through International Cooperation at the Baekdudaegan Global Seed Vault

9th June 15:00-16:30

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Keywords: KOAGI(Korea arboreta and Gardens Institute), BGSV(Baekdudaegan Global SeedVault), Seed conservation, KEYS Program, AFoCO

The Korea Arboreta and Gardens Institute(here after KOAGI) presents an example of establishing a convergent education partnership in the field of seed conservation through cooperation with international organizations.

KOAGI operates the Baekdudaegan Global Seed Vault (here after BGSV), a facility dedicated to preserving plant seeds to prevent species extinction caused by climate crises, environmental pollution, and natural disasters.

The Asian Forest Cooperation Organization (here after AFoCO) is an international organization established to promote sustainable forest management and restoration in the Asian region. It aims to address climate change, forest protection, biodiversity conservation, disaster prevention, and the sustainable use of forest resources. AFoCO plays a crucial role in coordinating forest policies among Asian countries and enhancing regional cooperation

In collaboration with AFoCO, KOAGI has developed the KEYS(Keep Eternally Your Seeds) Program, which emphasizes the importance of seed conservation and encourages practical action by facilitating seed storage in the BGSV.

This educational program aims to establish a global cooperation model for the future generation's utilization of wild plant resources and biodiversity conservation. The program consists of both theoretical and practical training in ex situ seed conservation techniques, covering the entire process from seed collection to storage management. Additionally, participants have opportunities to apply the acquired knowledge in their home countries.

Utilizing the BGSV as a foundation, the program presents a scalable model tailored to regional characteristics, contributing to the reinforcement of global cooperation in seed conservation. Ultimately, it fosters international efforts to preserve biodiversity and strengthens global collaboration in safeguarding plant genetic resources.

BS_OL_174

Quilling Cinnamons: A Promising Community Conservation Enterprise in the Philippines

9th June 15:00-16:30

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Keywords: cinnamon, conservation enterprise

Traditionally, cinnamon has been widely used in culinary practices as a spice and for medicinal purposes. In the Philippines, cinnamon species are highly valued for their unique aromatic properties and cultural significance. However, these species are now facing threats to their survival due to habitat loss and overharvesting. Our preliminary assessment suggests that engaging local communities in the cultivation and sustainable harvesting of cinnamon can create livelihoods that directly benefit both the environment and the people. Integrating cinnamon production into forest restoration initiatives also ensures collective, community-based protection of the restored areas. This can be achieved through capacity-building workshops, community-based conservation education campaigns, observing proper access and benefit sharing protocols and collaboration with the academes, local government units, non-governmental organizations, and private stakeholders. By focusing on sustainable harvesting methods, value-added product development, and market opportunities, communities are empowered to manage their resources sustainably. This approach offers immense potential for sustainable economic development while supporting biodiversity conservation. Value-added products, along with the integration of fruit trees and other economically important species, can diversify restored areas and local economies, improve incomes, and reduce pressure on wild populations of cinnamon species in the country. This conservation enterprise not only promotes the sustainable use of a valuable natural resource but also serves as a model for integrating biodiversity conservation into local economic development. By creating a sustainable cinnamon industry, the Philippines can protect its native species, support rural communities, and promote environmental stewardship, fostering a harmonious relationship between people and nature.

Beyond the Garden: Building Partnerships for Effective Environmental Education and Public Awareness

9th June 15:00-16:30

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Keywords: environmental education centre, environmental awareness, outreach, Sabah Environmental Education Network, Sepilok Junior Rangers, community

The Rainforest Discovery Centre (RDC), an environmental education centre within the botanical garden managed by the Sabah Forestry Department, has been instrumental in raising public awareness about rainforests since 1996. Through interactive experiences such as interpretive trails, a plant discovery garden, and a canopy walkway, the RDC engages diverse audiences, including students, teachers, and public. The educational activities at RDC is based on our publication, "A Teacher's Guide to Environmental Education," aiming to cultivate a deeper connection with nature and enhance environmental awareness. Beyond public outreach, the RDC plays a crucial role in training environmental education practitioners. It offers workshops, training sessions, courses, seminars, and conferences in collaboration with various organizations under the umbrella of the Sabah Environmental Education Network (SEEN). Additionally, the RDC launched the Sepilok Junior Rangers (SJR) programme in 2006, a long-term initiative involving local children in Sepilok, designed to nurture a sense of responsibility for the rainforest and the environment. RDC is also a key part of the committee for the Sabah school's sustainability award; Sekolah Rakan Alam Sekitar (friends of the environment school) – SERASI, working alongside various partners to promote environmental education and stewardship in schools. In the spirit of working with communities, RDC formed the Sepilok Community Recycling Action Program (SCRAP) as an initiative to promote recycling and effective waste management within the community in Sepilok.

Application of Digital AI Technology and Educational Innovation for Sustainable Development in Botanical Gardens

9th June 15:00-16:30

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Keywords: Digital technology, Education, AI, Sustainable development, Innovation, Botanical garden

Application of Digital AI Technology and Educational Innovation for Sustainable Development in Botanical Gardens

Wu HONG
Shanghai Botanical Garden

As the key vehicle in addressing global ecological challenges, botanical gardens are increasingly important in promoting sustainable development by integrating innovative science education and digital technology. This report examines the application and effectiveness of emerging technologies like artificial intelligence (AI) in Chinese botanical gardens, with a particular focus on the Shanghai Botanical Garden and other leading institutions. Botanical gardens can enhance public awareness of plant ecology through thematic garden designs that convey ecological vitality. Internet of Things (IoT) technology enable the real-time retrieval of environmental parameters, optimizing resource management through big data analytics. AI-powered technologies are revolutionizing public science education, while deep learning-based plant recognition systems allow tourists to swiftly identify plants through image analysis. VR/AR technologies create immersive learning experiences, enriching visitor interaction and engagement, etc. The synergy of digital AI technologies and innovative educational approaches can significantly improve the management of education in botanical gardens and enhance the overall visitor

EY_OL_141

Self-Directed Education: Exploring Teaching Materials for Biodiversity Considering the Characteristics of Participants (Elementary School Students) and Greenhouse Spaces

9th June 15:00-16:30

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Keywords: biodiversity education, self-directed education, sun magnifier, youth

This education is a biodiversity education program held at the National Sejong Arboretum from 2020 to the present, designed to decipher hidden codes in greenhouses and recognize the importance of biodiversity concepts, relationships between plants and humans, and plant information record management, which is a unique function of the arboretum.

The main target was the upper grades of elementary school, and biodiversity teaching material was developed as a self-directed education method that allows students to find answers directly by decoding cryptographs rather than telling stories and delivering existing stories at greenhouse sites.

The self-developed sun magnifier and greenhouse maps received patent applications for biodiversity teaching material to lay the foundation for the distribution of educational programs for shared growth with public and private arboretums, and passed on private arboretum operation know-how on a trial basis.

Visitors' Feedback on Communication, Education, and Public Awareness Materials of the Makiling Botanic Gardens, Philippines

9th June 17:00-18:30

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Keywords: communication, education, and public awareness (CEPA), biodiversity conservation, sustainable and responsible ecotourism

The Makiling Botanic Gardens (MBG), one of the ecotourism destinations within the Philippines' Mount Makiling Forest Reserve ASEAN Heritage Park (MMFR AHP), was established on June 20, 1963, through Republic Act (RA) 3523, to serve as a leading educational facility and a site for biodiversity conservation in the region. Ecotourism in the Philippines provides both an opportunity and threats to the natural and social environment. To mitigate threats, sustainable and responsible ecotourism is crucial. Effective communication is an essential component of visitor management strategies. The assessment of visitors' feedback of the Makiling Botanic Gardens' communication, education, and public awareness (CEPA) materials is provided in this paper. The significance of CEPA to encourage and include people in biodiversity conservation and the sustainable use of natural resources is acknowledged in Article 13 of the Convention on Biological Diversity (CDB). Results revealed that the 45 respondents found maps (60%) to be the most helpful among the CEPA materials available, followed by infoboards and directional signs (56%), videos (36%), flyers (31%), and brochures (29%). These materials guide users, provide interesting information, raise awareness, and serve as an attraction. As additional materials, respondents recommended field guides, posters, souvenirs, social media content, and infographics about flora and fauna. Also, the respondents are most interested in learning more about are the history, biodiversity, and natural resources. To further improve their experience, they suggested to include presence of food stores, souvenir shops, and more safe and secure pathways. The study demonstrated the effectiveness of the materials to raise visitor awareness. It contributed to the development of MBG's visitor management scheme and provided conservation education through an interpretation program. Therefore, if more CEPA materials and programs are developed, it will be easier for visitors to understand and appreciate the MBG has to offer.

Philippine Youth -Led Biodiversity Conservation Hub: The Siit Arboretum Botanical Gardens Experience

9th June 17:00-18:30

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Keywords: Youth empowerment, Biodiversity conservation, Arboretum, Community engagement, and Place-based learning

Botanical gardens and arboreta play a critical role in biodiversity conservation, particularly in engaging and educating the youth about the importance of preserving the natural world. In the Philippines, the Siit Arboretum Botanical Gardens (SABG) served as a pivotal platform for empowering diverse youth organizations in biodiversity conservation, recognizing the profound value of place-based and experiential learning in cultivating environmental stewardship. The garden's unique resources, encompassing both naturally occurring vegetation and methodically curated habitat collections, rendered it an ideal setting for immersive biodiversity encampments, hands-on youth workshops, practical apprenticeships, and rigorous field research. Notably, the SABG also played a central role in facilitating youth training aimed at amplifying public awareness of biodiversity protection through creative and engaging arts and theatre performances. These performances effectively translated complex ecological concepts into accessible and compelling narratives. SABG also provided an invaluable training ground for aspiring young researchers, enabling them to conduct in-depth biodiversity field research and participate in biological apprenticeships, fostering a deeper understanding of local flora and fauna. Beyond individual initiatives, the SABG acted as a crucial bridge, fostering collaboration and synergy among diverse youth organizations. This collaborative environment resulted in the development of tailored biodiversity conservation initiatives, specifically designed to address the unique needs of local communities, demonstrating the power of collective action in achieving tangible conservation outcomes. Significantly, by offering a versatile and accessible space for youth-led activities, the botanical garden empowered participants to take ownership of conservation efforts, fostering a sense of responsibility and action. The outcomes showcased the efficacy of integrating artistic expression, scientific research, and educational outreach in cultivating environmentally conscious citizens. Its strategic central location within the community further enhanced accessibility, ensuring that youth organizations could readily engage in these impactful and transformative experiences.

Biophilia, Collaborative and Interdisciplinary Youth Work to Conserve the Choc'Tropical Lowlands

9th June 17:00-18:30

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Keywords: Conservation & education, Educational innovation, Learning space, Botanic gardens

The conservation of endangered plants is threatened by the disconnection of young people from nature in urban environments, the immediacy of the modern world and a lack of knowledge about local biodiversity. Botanic gardens are spaces in or near cities that provide an encounter with nature through their botanical collections and learning activities. The Biofilia programme is an initiative of Padre Julio Marrero Botanic Garden of the Pontificia Universidad Católica del Ecuador, Santo Domingo campus, and aims to bring together young people, according to the areas of knowledge in which they are trained, so that they can apply and develop their knowledge oriented towards conservation. This programme has 6 projects: conservation of endangered species in the Chocó tropical lowlands, environmental education, infrastructure for educational spaces, restoration of secondary forests, water management, food security and ethnobotany. The participants are university students or volunteers from various fields such as graphic design, civil engineering, architecture, gastronomy, etc., and they participate in the decision-making processes of each project. They have developed and implemented innovative teaching strategies, created and designed teaching materials, designed and implemented a system for interpreting botanical resources, created new thematic resources, maintained and managed resources, developed a rainwater management and reserve system, created an ecological kitchen and garden system, reforested with native trees, designed and implemented a recycling and composting scheme, etc. Approximately 220 young people have participated in the different phases of the project, with the Padre Julio Marrero Botanical Garden being the meeting point for sharing experiences and learning together.

EY_OL_179

Education, Engagement, and Action: Youth as Changemakers in Nature Conservation

9th June 17:00-18:30

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Keywords: Youth empowerment, environmental education, rainforest conservation, sustainable practices, community engagement, biodiversity stewardship, conservation initiatives

The Rainforest Discovery Centre (RDC) in Sepilok, Sabah, is an environmental education centre managed by the Sabah Forestry Department. Located within the Kabili-Sepilok Forest Reserve, it serves as a gateway to Borneo's rich biodiversity. RDC features a canopy walkway, jungle trails and an interpretive center that help visitors learn about tropical rainforests and wildlife. RDC plays a key role in environmental education, providing hands on programs for students, teachers and conservationists to promote rainforest conservation and sustainability. My presentation will focus on the impactful initiatives by the Rainforest Discovery Centre (RDC) of the Sabah Forestry Department in Sabah, Malaysia, underscoring our commitment in empowering youth to be involved in environmental conservation. Hence making them the potential agent of change. At RDC, we have implemented a range of programmes that actively engage young people in conservation efforts. RDC engages youth through forums and conferences, collaborating with other agencies in outreach programmes and providing environmental education courses tailored for teachers and conservation practitioners. Our hands-on internship programs have further enabled youth to gain practical experience, equipping them with the skills required to drive future conservation initiatives. In addition to educational outreach, RDC has been instrumental in addressing local waste issues within the Sepilok communities, thereby promoting sustainable environmental practices. Ultimately, this presentation will demonstrate how localized initiatives, when informed by global expertise, can contribute significantly to environmental stewardship. It reinforces the role of the Sabah Forestry Department and RDC in nurturing a generation of proactive changemakers dedicated to preserving our planet's natural heritage and advancing sustainable development.

NB_OL_98

Ethnobotany of the Uzbekistan Koryoin: Resilience and Adaptation

9th June 17:00-18:30

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Keywords: Central Asia, Uzbekistan, Koryoin, traditional ethnobotanical knowledge

In the 1930s, Koreans residing in the Russian Far East were forcibly relocated to Central Asia by the Soviet Union, wherein they subsequently established the Koryoin (Koryo-saram) community. Despite this displacement, whilst adapting to the new environment the Koryoin have maintained their Korean cultural traditions, resulting in a fusion of Korean and Central Asian ethnobotanical knowledge. This study aimed to document the ethnobotanical knowledge of the Koryoin in Uzbekistan and examine their ability to maintain traditional Korean practices whilst adapting to the Uzbek culture. A survey was conducted in the Tashkent region of Uzbekistan, where a majority of the Uzbek Koryoin currently resides, among which 31 Koryoin respondents participated. Respondents mentioned 72 plant taxa across 28 botanical families, with the majority, comprising 51 taxa, used for food purposes. Medicinal plants accounted for 26 taxa, whereas 8 taxa were used for household or handicraft purposes. Among these plants, 53% are still actively used, whereas 30% have become obsolete in terms of use, and 17% tend to be only partially retained in cultural practices. The ethnobotanical knowledge of the Koryoin is characterized by an amalgamation of Korean and Central Asian traditions. Although the Koryoin has incorporated Central Asian species into Korean recipes and partly adopted local customs, several introduced plants have continued to be used in ways consistent with Korean traditional practices. Our findings extend beyond merely documenting the ethnobotanical heritage of the Koryoin, as they also contribute to enhancing the understanding of their cultural resilience and adaptation. Preserving and revitalizing the traditional knowledge is crucial for the cultural identity of future Koryoin generations and supporting sustainable practices within their communities. Considering that research on the traditional ethnobotanical knowledge of the Koryoin of Central Asia was conducted for the first time, this experience can be used in training specialists for future research.

Rooted in Tradition: Fostering Community Engagement and Connecting Culture with Nature through Innovative Education in Botanic Gardens @ Hyderabad

9th June 17:00-18:30

G. C. S. REDDY[1*], L. R. NAIK[2]

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Keywords: Central Asia, Uzbekistan, Koryoin, traditional ethnobotanical knowledge

This study explores the role of botanical gardens in addressing global challenges such as biodiversity loss, climate change, and the urban disconnection from nature. Using the Hyderabad Botanical Garden as a case study, it highlights innovative educational strategies and community-driven initiatives that integrate culture, technology, and ecological stewardship. The garden features thematic learning spaces in "Vriksha Parichaya Kshethram," a 100-acre biodiversity area with conceptual, utility-based, medicinal, mythological, and phyto-morphological theme parks. Ex. a paper garden with the trees used in making paper, a sports tree garden with trees yielding wood for carrom board coins to Billiard table making. These spaces blend cultural narratives with ecological education, fostering a deeper appreciation of nature's diversity. Sculptures, pathways, and interactive signages enhance visitor engagement, while programs tailored for schools and community groups ensure inclusivity. Modern technologies such as QR codes, augmented reality, and virtual tours make the garden accessible to a global audience, promoting independent exploration and cultural understanding. The garden also addresses urban challenges by serving as a "green lung" for Hyderabad, providing tranquil spaces that improve air quality and alleviate urban stress and improves health and well-being of a million people visiting every year. Community participation is pivotal to its success. Initiatives like planting drives and volunteer programs empower locals, walker's association initiatives, fostering a sense of environmental stewardship. Moreover, partnerships with educational institutions strengthen formal and informal learning opportunities. This model demonstrates how botanical gardens can transcend traditional roles by merging cultural heritage with environmental education. The innovative approach inspires visitors to connect with nature while contributing to biodiversity conservation and cultural preservation. By fostering mindfulness and sustainability, the Hyderabad Botanical Garden serves as a beacon for integrating tradition and innovation to inspire future generations to cherish and protect the natural world.

NB_OL_184

Environmental Education Program "Indigenous Peoples and Plants of the Amur Region"

9th June 17:00-18:30

A.N. Vorobeva*, O.V. Zhilin

Amur branch of Botanical Garden-Institute of Far Eastern Branch of the Russian Academy of Sciences, Blagoveshchensk, Amur region, Russian Federation

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Keywords: Evenki, indigenous peoples, plants, ethnobotany, environmental education

Currently, the Amur Region is home to the indigenous peoples of the North - the Evenks (1,481 people). About half of them lead a traditional life: they breed reindeer, live and hunt in the taiga. Studying the use of local plants by the Evenks is important for preserving the historical and cultural heritage of this people and our region. In order to implement the GSPC target of preserving the plant diversity of our planet and the traditional knowledge of indigenous peoples, the Amur Botanical Garden has been implementing the environmental education program "Indigenous Peoples and Plants of the Amur Region" since 2020. The program includes an online lecture "Plants in the Life of the Evenks" (2 hours); an outdoor educational session for primary and secondary school students "Indigenous Peoples and Plants" (1.5 hours); a family excursion with elements of a master class "Plants in the Life of the Evenks" (1.5 hours); an educational ethnobotany session for the summer educational program "Smart Holidays in the Botanical Garden" (3 hours). In addition to verbal methods of conveying information to visitors to the garden, the program uses visual aids developed for this program - these are videos about Evenk traditions (making flatbreads from the fruits of Prunus padus L., making a drink from Dasiphora fruticosa (L.) Rydb.) and thematic wall flip calendars "Evenks and Plants". On September 4-6, 2024, our garden organized the Second Annual International Scientific and Practical Conference of the Association of Botanical Gardens of Eurasia "Ethnicities and Flora: Plants, People, Traditions", where scientists from 15 cities of Russia and China successfully discussed the issues of preserving the traditional knowledge of indigenous peoples related to the use of plants.

AR-Based Forest Education for Carbon Neutrality

9th JUNE, 15:00-16:30

Division of Forest Human Service, National Institute of Forest Science

Siyeon HA, National Institute of Forest Science, Seoul, Korea(Coordinator/lead for the session)
Jaehyeok CHOI, National Institute of Forest Science, Seoul, Korea
Seunghyeon KIM, National Institute of Forest Science, Seoul, Korea
Baekyeon KIM, National Institute of Forest Science, Seoul, Korea

Emphasizing the role of forests in combating climate change is an essential educational component for future generations. This workshop introduces innovative forest education using the AR applications <Tree, the Carbon-Capturing Superhero> for lower elementary students and <Plus Forest, Minus Carbon> for upper elementary students. These two AR applications are designed to help students intuitively understand the concepts of forests and carbon neutrality. Participants will experience hands-on AR demonstrations and activities to explore effective forest education methods applicable in real-world educational settings. Through this process, they will gain a deeper understanding of the role of forests in addressing climate change and how to integrate this knowledge into educational practices. This workshop offers a valuable opportunity for educators, researchers, and policymakers to explore and share effective educational approaches linking forests and climate change.

WS_45_1

Climate Change Action -What More Can We Do? Creating a Declaration of Intent to Address Climate Change Goals (Part One of Two)

9th JUNE, 15:00-16:30

BGCI

Helen MILLER, Botanic Gardens Conservation International, UK – coordinator

Climate change presents a significant threat to plant conservation, a 2-3°C temperature rise could lead to half the world's plant species being threatened with extinction. And the impact to future generations and life as we know it, could also be catastrophic. Alongside the Kunming-Montreal Global Biodiversity Framework and United Nations Framework Convention on Climate Change, the UN Sustainable Development Goal 13: Climate Action (2030) is a key target for halting the climate crisis, but time is running out. We need urgent collective action and the ability to reach millions of people, to create more sustainable behaviours and ensure support for plant conservation.
:
Botanic garden education and engagement programmes play a pivotal role in addressing climate change, raising awareness of and educating visitors on the impacts of climate change. But is there more that we could be doing? As neutral, safe spaces we often shy away from addressing difficult or political subjects, our programmes inform, but do they inspire audiences to take action? Can we as gardens play a bigger and more impactful role in the climate conversation?

Botanic gardens as a network welcome approx.. 1 billion visitors a year, highlighting the potential role that we have to deliver significant action for plant conservation and climate action.

In this 2-part workshop we will provide an overview of climate goals and the work that has been delivered to date by our sector. We will use a combination of discussions, world cafes and practical activities to develop a Declaration of Action, outlining the actions our network can take to deliver for plant conservation engagement towards Climate Action targets and identify training and resources to support our network in their commitment to achieving climate action goals. This Declaration, will be a pledge and a shopping list of actions/activities and used to demonstrate the collective power of our international botanic garden network in creating positive change. This Declaration will be presented to the United Nations in late 2025 at the UN Climate Change Conference (COP30).

In part one we will look at what we are already doing, how we categorise these types of activities and will develop initial ideas and opportunities.

In part two we will look at the opportunities identified in part one in more detail, considering barriers and support/resources needed, agreeing on a realistic but impactful set of actions/activities that will complete our Declaration of Intent. In addition, we will develop and agree on a pledge statement for the Declaration.

WS_31

Participatory Art: Visual Dialogues about Plants

9th JUNE, 15:00-16:30

University of Iceland, School of Education

Dr. Ásthildur B JONSDOTTIR, University of Iceland

This workshop will employ participatory methods to explore and reflect on people's relationships with plants in their local settings. The participants will actively contribute to the creation and evolution of an installation, fostering a dynamic interaction between the artwork, its contributors, and the natural environment. Through storytelling and collaborative creation, the work will become a living dialogue, capturing the diverse ways individuals perceive, connect with, and impact the natural world—specifically through encounters with individual plants from different botanical gardens.

By engaging the senses, memory, and personal narratives, participants will deepen their awareness of plants not just as passive elements of the landscape but as active presences in their lives. The workshop will incorporate elements such as sensory mapping, and collective storytelling, allowing participants to reflect on the cultural, emotional, and ecological dimensions of their interactions with flora.

The workshop will reflect on the artistic process, highlighting how participatory methods can cultivate a sense of agency and personal connection among participants. It will also examine the broader implications of such methods in reshaping our understanding of environmental stewardship. The session will conclude with a hands-on participatory activity, demonstrating how such art practices can be integrated into community-driven sustainability projects and educational initiatives. Participants will be invited to contribute their reflections and creative responses, ensuring that the dialogue continues beyond the workshop space.

WS_17

Art Meets Science: A Collaboration for Learning and Growth

9th JUNE, 15:00-16:40

Royal Botanic Gardens Victoria
Classification B

Claire MOSLEY, Learning Facilitator, Royal Botanic Gardens, Victoria, Australia
**There is a potential option to collaborate with a Scientist at the Seoul Botanic Gardens*

"As we draw upon the diverse expertise within a Botanic Garden, it's natural to create programs that combine pedagogical approaches with scientific knowledge through the creative bonding of art." – Meg Hirst, Seed Ecologist.

Inspired by a creative nature-based program at the Royal Botanic Gardens in Melbourne – Young Botanists - this workshop will highlight how art and science can come together to engage young learners. Participants will gain insights into the Young Botanists' structure, delivery, outcomes, challenges, the key lessons learned, and how we engaged internal experts across mycology, ecology, horticulture and First Nations perspectives. Participants will explore hands-on creative methods that they can apply in their own gardens to foster collaboration, boost student engagement, and enhance learning through art.
Guided by myself as both a practicing artist and a Learning Facilitator with RBG, and a scientist from Seoul Botanic Gardens, the workshop will focus on exploring scientific themes through experiential activities using materials such as watercolours and clay.

Structure of workshop is:
- 20 mins – Introduction and program description
- 70 mins – learning through art outside
- 10 mins – conclusion and how to weave into practice

By the end of the workshop, participants will:
- Understand the Young Botanists program
- Experience using art as a learning tool
- Enhance their creativity and critical thinking
- Develop new education strategies
- Be inspired to build cross-disciplinary connections
- Understand how combining art and science deepens connections to nature and improves science communication.

This workshop ultimately aims to showcase and develop a holistic approach to learning, demonstrating how integrating creative experiences with scientific themes enriches and deepens student learning. Participants will leave with new, tangible ideas to take back to their own Botanic Gardens to inspire student learning.

Plants and People: A Portable Exhibition for Families

9th JUNE, 17:00-18:30

Hortus botanicus Leiden

Maxime BOERSMA, Hortus botanicus Leiden, Leiden, The Netherlands
Nuala TEERINK, Hortus botanicus Leiden, Leiden, The Netherlands
Thal JONAS, Hortus botanicus Leiden, Leiden, The Netherlands

Open discussion about an interactive workshop in the making. The theme is ethnobotany, the relationship between people and plants. We want to create an portable exhibition for schools and nature/science markets.

The educators want to show the visitors the diverse ways of the use of plants in daily life and in different cultures. With beautiful artifacts they display how plants have shaped human culture. The field spans cultural, domestic, religious and medical aspects and much more. We show all kinds of cultures and parts of history, but also the futuristic elements. We enlighten themes like: construction, paint, beauty, food, rituals, music, tools, clothing, medicine and transport.

To create a free learning space, visitors of the exhibition can choose between different games and displays, for example:
- Paint with vegetables and fruits on rice- and papyrus paper
- Smell different kind of herbs and tree's for ceremonial uses like Paulo Santo and sage
- Listen or make music made from instruments like flutes and digeridoo's
- Feel de diverse textures of clothing from cacti leather, cotton and nettle
- Create your own construction from bamboo and rubber
- Learn about natural remedies from flowers and herbs
- Drink and taste different parts of plants like tea, coconut and aloe vera
- See how seeds and plants are used as jewelry

We hope to collect memories and craftsmanship from all different parts and cultures around the globe. Together we will build a beautiful collection of ways people entangle plants in their lives.

WS_37

Changing the Direction of Forestry Experts' Education to Respond to the Climate Crisis (Part 1, 2)

9th JUNE, 17:00-18:30

A general forestry welfare enterprise, Forest on

- Kyungtaek HWANG, Ecoplay Institute, Seoul, Korea
- Aekyeong AN, Forest on, Gyeonggi Province, Korea

Summary

Part 1: Instructor-led workshop

- Understanding the climate crisis The climate crisis is serious, and a 2°C temperature rise is expected to cause sea level rise, biodiversity loss, and threats to vulnerable populations. The main cause is carbon emissions, which have skyrocketed with industrialization. This session will highlight the risks of carbon emissions.

-The role of forest education Reducing carbon is the most urgent solution. Although the oceans absorb most of the carbon, forests play an important role in carbon neutrality. Promoting forest conservation and education is a practical way to tackle the climate crisis.

-The Future Direction of Forest Education Forest education has evolved from simply studying forest ecosystems to raising awareness of the relationship between humans and nature and conducting hands-on learning. This session will propose strategies for integrating experiential and action-based education to reduce carbon emissions.

Part 2: Experience Workshop

- Interactive Activities for Participants

(1) Eco-friendly wooden cube Participants will learn how to make and use small pieces of wood to develop educational tools for teaching carbon reduction in schools.

(2) Making wooden puzzles: Participants design and build their own wooden puzzles using thinned logs.

(3) Branch Frame CraftBy repurposing the pruned branches, participants create a frame that holds their favorite images, promoting the sustainable use of natural materials.

Exploring XR in Botanical Exhibitions: A Case Study of Mankyua chejuense

9th JUNE, 17:00-18:30

Team Pearl Corp.

Hyeju JEONG (Coordinator), Team Pearl Corp., Seoul, Korea
Soojin SEONG, Team Pearl Corp., Seoul, Korea
Seonghwan WI, Team Pearl Corp., Seoul, Korea
Hyuntae KIM, Team Pearl Corp., Seoul, Korea
Yoonji KIM, Team Pearl Corp., Seoul, Korea

This workshop, led by the interdisciplinary art group Team Pearl, introduces immersive exhibition methods that use XR technology and AI to reimagine how plants are experienced and interpreted. Participants will explore and engage with hands-on demonstrations, including AR based plant labeling and 3D printing centered on Mankyua chejuense, a critically endangered species endemic to Jeju Island. Team Pearl builds its work around the sci-fi world of "Sepafuturism", a speculative framework that explores the segmented nature of human perception. Within this narrative, they collaborate with a virtual lifeform named Peary to create artworks that reflect the tension between separation and futuristic imagination. In this context, Mankyua chejuense serves as a symbolic plant representing ecological fragility and temporal continuity. Since 2022, Team Pearl has been exploring Mankyua chejuense through 3D printing and XR technologies. Their work has been presented in a series of exhibitions, including You Are Here – The Door (2022, Korea), Separium: Monotypic Humans (2023, Korea), and most recently Separium: 12th Elevator at Sonar+D (2024, Barcelona, Spain) and GITEX Global – Expand North Star (2024, Dubai, UAE). They have also developed a web-based AR docent system, which was showcased at the National Institute of Ecology (Korea) and Lotte World Aquarium (Hanoi), offering the public interactive plant storytelling experiences. In this workshop, participants will experience Team Pearl's XR-based exhibition strategies, using plant nameplates and image recognition. Together, we will explore new possibilities for integrating XR technologies into botanical exhibitions and educational environments.

DAY 1

PS_12

Education and Research for Plant Conservation and Sustainable Management in Indonesia

9th JUNE, 15:00-16:30

- Asia Forest Institute (NGO)
- Institutes of Green Bio Science and Technology, Seoul National University
- Korea International Cooperation Agency
- National Research and Innovation Agency (BRIN)
- KEBUNRAYA (Bogor, Cibodas, Purwodadi, Bali)

Ms. Amaliah FITRIAH, Education Attache, Indonesian Embassy to Republic of Korea
Mr. Marga ANGGRIANTO, Managing Director, Bogor Botanical Garden, Indonesia
Mr. Zaenal ARIFIN, General Manager, Bogor Botanical Garden, Indonesia
Dr. Sasa Sofyan MUNAWAR, Director, Scientific Management Collection, National Research and Innovation Agency (BRIN), Indonesia
Prof. Rinekso SOEKMADI, Professor, Department of Forest Conservation and Ecotourism, Faculty of Forestry and Environment, IPB University
Prof. Inda SETYAWATI, Professor, Department of Biochemistry, IPB University
Prof. Rita Kartika SARI, Professor, Faculty of Forestry and Environment, IPB University
Dr. Dewi Anggraini SEPTANINGSIH, Advanced Research Laboratory, IPB University
Prof. Hosang KANG, Professor, Seoul National University
Dr. Jeongho PARK, Director, Asia Forest Institute, Korea
Ms. Hyeyoung JIN, Director, Korea National Arboretum

Indonesia, a global biodiversity hotspot, faces significant challenges in plant conservation due to habitat loss, climate change, and unsustainable development. Botanical gardens in Indonesia are invaluable assets for conserving the nation's rich plant heritage and promoting sustainable development. The main roles of Indonesian botanical gardens are ex-situ conservation, research and development, education and public awareness, and sustainable development (e.g. nature based solution, ecosystem restoration, etc.). Through their dedication to research, education, and conservation, they play a crucial role in ensuring the survival of Indonesia's unique flora for the next generations. The workshop will bring together policy makers, researchers, educators, and practitioners to share knowledge, develop collaborative strategies, and explore innovative approaches to plant conservation.

Widened Public Participation in Botanical Garden Through Public-Private-Partnership to Promote Real Practices of Sustainability and ESG Practices and to Improve the Effectiveness of Education Function in Botanical Garden.

9th JUNE, 15:00-16:30

M. ANGGRIANTO1,*

[1] Bogor Botanic Garden, Bogor, Indonesia

Indonesia is the land of botanical gardens, there are 53 botanical gardens throughout Archipelago, nearly most of the botanical garden in the country is Government owned and operated. Traditionally, botanical garden has the mission to conserve the biodiversity of plants, plant research and further to educate the general public about the biodiversity and environmental issues. The recent modernization had shifted the general public behaviour on how they perceived communication and education, especially the younger generation. There is a need to infused creativity on how to spearhead the educational mission of botanical garden to ensure effectiveness in regard of delivering biodiversity education in botanical garden.

Since 2020, four botanical gardens in Indonesia which is owned by National Research and Innovation Agency (BRIN) has engaging a deep collaboration with private sector to operate four Botanical Garden (Bogor Botanical Garden, Cibodas Botanical Garden, Purwodadi Botanical Garden, Bali Botanical Garden). This marks a historic revolution and an innovation to improve the quality of public services and education function in these botanical gardens. The size of these four gardens is nearly at 400ha, it is believed that this is one of the most largest and most extensive Public-Private-Partnership (PPP) scheme in Botanical Garden operations. The goal of this PPP scheme in four botanical gardens is to emphasize the competitive advantage of each parties.

Private Sector were carefully chosen to improve the public service using tourism discipline and creative freedom to manage the garden's communication media in order to strengthen the educational conservation and biodiversity message of the botanical garden. The Government (BRIN) is in charge to manage the plant research activities and conservation management (plant collection management, plant expedition, etc). Given the distinctive identity of botanical garden, there are some joint projects between BRIN and private operators to establish new thematic garden using competitive advantage from each party.

This collaboration model has widened the public participation and awareness in conservation and environmental function of botanical garden. It is to foster stronger collaboration between government and wider public using Botanical Garden as a medium to raise environmental awareness through plant and conservation education. Private participation in botanical garden also give the opportunity of real practice of ESG & sustainability in business.

Mangrove Biodiversity and Blue Carbon Innovation: ROK-Indonesia Cooperation for Climate, Community, and Conservation

9th JUNE, 15:00-16:30

H.S.KANG[1,2]
J.H.PARK[2], Y.J.LEE[2], E.Y.KIM1, Y.A.CHANG[2], S.H.YOON[2], J.Y. KANG[2], H.S. KANG[2], S.J. HAN[1]

[1]Institutes of Green Bio Science and Technology, Seoul National University
[2]Asia Forest Institute

Indonesia hosts the world's largest mangrove forest area, comprising 24% of the global cover and supporting high biodiversity and blue carbon potential. However, these ecosystems face severe degradation from aquaculture expansion, land-use conversion, and coastal development—particularly in Aceh Province, where over 40% of mangrove cover has been lost. Given their capacity to sequester up to 1,023 Mg C/ha, mangroves represent a globally significant nature-based solution for climate mitigation. International mandates, including the IPCC's Sixth Assessment Report and FAO's Global Forest Resources Assessment, underscore the urgent need to halt deforestation and restore degraded lands. Recognizing this urgency, the Republic of Korea and Republic of Indonesia have advanced a model of collaborative, science-based climate action. Through the support of the Korea International Cooperation Agency (KOICA), key initiatives such as the KOICA–ICAB Project (2022–2028), international workshops, and forthcoming restoration programs are strengthening local capacity, fostering joint research, and linking ecological restoration with community resilience. These efforts are grounded in practical innovations—such as silvofishery systems that balance aquaculture and conservation, eco-charcoal production, and mangrove-based honey enterprises led by local women's groups—demonstrating how restoration can support sustainable livelihoods alongside environmental recovery. Socio-ecological integration is reinforced by national carbon policy frameworks and the launch of an Indonesian platform for carbon trading as well. It also introduces a proposed Mangrove Carbon Research Hub at IPB University, aimed at institutionalizing long-term regional cooperation on blue carbon science, coastal monitoring, and technology-enabled restoration, contributing meaningfully to SDGs 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land).

Establishment of National Instrumentation Center for Agriculture and Bioscience (NICAB) at IPB University, Indonesia: Enhancing Research Infrastructure for Biodiversity and Bioscience Innovation

9th JUNE, 15:00-16:30

H.S.KANG[1,2]
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Indonesia, one of the world's most biodiverse nations, faces a paradox: while it harbors vast ecological and agricultural resources, its capacity for advanced scientific research has long been constrained by limited infrastructure and access to high-end instrumentation. This gap has hindered its ability to generate evidence-based responses to pressing challenges such as biodiversity loss, climate change, and sustainable resource management. In response, the National Instrumentation Center for Agriculture and Bioscience (NICAB) is being established at IPB University as a flagship initiative under Korea's development cooperation efforts with Indonesia, supported by KOICA. Designed in partnership with Institutes of Green Bio Science an Technology, Seoul National University and Indonesian stakeholders, NICAB aims to strengthen Indonesia's capacity for advanced bioscience, biodiversity conservation, and sustainable development through state-of-the-art instrumentation and interdisciplinary research facilities. NICAB will house five specialized laboratories—Nano-Imaging, Metabolomics, Agro-Maritime Material Characterization, Cell Culture, and Molecular Science—supporting taxonomic identification, regenerative medicine, climate diagnostics, and biotechnological innovation. The facility is designed to foster international collaboration, scientific diplomacy, and environmental resilience. NICAB is not only a cornerstone of Indonesia's research modernization but also a platform for trilateral cooperation that advances the UN Sustainable Development Goals. Through its integrative and sustainable approach, NICAB represents a transformative leap in regional scientific capacity and long-term ecosystem stewardship.

Identification of Plant Viruses Infecting Pepper in Indonesia by Metatranscriptomics

9th JUNE, 15:00-16:30

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Pepper (Capsicum annuum L.) is an essential crop widely cultivated in Indonesia and contributes significantly to the agricultural economy. This study is the first to comprehensively investigate viral pathogens affecting Indonesian pepper plants using next-generation sequencing (NGS) technology. We performed metatranscriptomics analysis through RNA sequencing, followed by bioinformatics analyses, to identify viral species present in six libraries collected from different geographical regions of West Java. A total of 13 viruses were identified, with Cucumber mosaic virus (CMV) being the most prevalent, showing an average occurrence exceeding 95% across all libraries. Unidentified viruses were consistently detected in all samples, reflecting the need for further investigation. Notably, Pepper cryptic virus 2 (PCV2) and Capsicum annuum amalgavirus 1 (CaAV1) were detected for the first time in Indonesia. Phylogenetic analyses revealed close genetic ties between the identified viruses and strains from Asia, Europe, and Australia, suggesting potential regional and intercontinental transmission routes. Validation through RT-PCR confirmed the accuracy of virus detection using RNA sequencing. These findings provide comprehensive insights into the diversity, prevalence, and geographic distribution of viral pathogens affecting pepper crops in Indonesia, emphasizing the need for continued viral monitoring and implementation of region-specific management strategies to protect crop productivity.

DAY 1

PS_12_5

DAY 1

Metabolite Profiling Using UHPLC-HRMS and Antioxidant Activity of Pogostemon Cablin Benth. Extract from Different Location

9th JUNE, 15:00-16:30

D.A.SEPTANINGSIH[1]

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[2]Syiah Kuala University, Banda Aceh, Indonesia
[3]Universitas Sebelas Maret, Surakarta, Indonesia

Pogostemon cablin Benth. or patchouli is a tropical plant that produces essential oils as raw materials for therapeutic oils for topical treatment and perfume, known as patchouli oil. It is known that several compounds, such as patchoulol, have antidepressant and antioxidant activity. The presence of metabolites in patchouli plays an important role in causing biological activity so that the composition and concentration level will affect the level of activity. To maintain the quality of patchouli, quality control is needed starting from the provision of raw materials to the production of extract or medicated oil. This study succeeded in profiling metabolite of P. cablin leaf extracts from three locations in Indonesia (Sukabumi, West Sumatra, and Aceh) using UHPLC-HRMS. The metabolite profile of patchouli leaf extract was successfully identified with 38 compounds with the flavonoid compound group; organic acids; phenylethanol; sesquiterpenes; and alkaloids. Principal component analysis (PCA) score plot can clearly differentiate patchouli based on its growing location, which shows that there are differences in metabolites in patchouli. The antioxidant potential of patchouli leaf extract was shown to be 13.57-52.75 mg equivalent Trolox/g extract with the DPPH method and 51.49-93.47 mg equivalent Trolox/g extract with the FRAP method. P. cablin from Sukabumi showed the highest antioxidant potential. Metabolite profiles were able to distinguish P. calbin from various locations and their biological activities.

Complete Chloroplast Genomes and Nuclear Ribosomal DNAs of Four Schefflera Also Known as Heptapleurum Species from Sumatra Island

9th JUNE, 15:00-16:30

F.MAULANA[1]

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The Araliaceae family, often known as the ginseng family, consists of around 45 genera and 1500 species distributed mainly across tropical and subtropical regions. The genera Schefflera, also referred to as Heptapleurum, is notable for its wide morphological diversity and complex taxonomy, especially Schefflera species native to Sumatra Island, Indonesia. This research aims to conduct comprehensive chloroplast genomes and nuclear ribosomal DNAs along with phylogenetic analysis of four Schefflera species, which S. rigida, S. sibayakensis, S. capitulifera, and S. aromatica. The chloroplast genome, approximately 156,092 bp-156,703 bp in length. The genome encodes a standard set of genes involved in photosynthesis, self-replication, and genetic information processing. The nuclear ribosomal DNAs range from 5,817 bp – 5,821 bp. Detailed characterization revealed simple sequence repeats (SSRs), single nucleotide polymorphisms (SNPs), insertion-deletion (Indel), and as well as codon usage, can be used to develop its genetic markers. Comparison with other Araliaceae reveals genetic relationship along with Sumatra Schefflera. This genomic resource enhances our understanding of plant genetic information and evolution in Southeast Asia and helps create future exploration and utilization of Schefflera plants.

The Potential Inhibitory Mechanism of EGCG Against the Chikungunya Virus Targeting Non-structural Protein 2 Through Molecular Dynamics Simulation

9th JUNE, 15:00-16:30

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[4]Molecular and Integrative Biosciences Research Programme, Faculty of Biological and Environmental Sciences, University of Helsinki, Helsinki, Finland

This study explores the potential of Indonesian herbal compounds against the chikungunya virus (CHIKV), which causes widespread illness without a specific cure known as chikungunya fever (CHIKF). By focusing on the nsP2 protein, crucial for the virus's replication, the research utilizes computational methods identifying inhibitor compounds with high binding affinity. These promising candidates are further analyzed through 1 μs of molecular dynamic (MD) simulation studies, aiming to find effective inhibitors to control the chikungunya spread, leveraging Indonesia's rich biodiversity for novel anti-CHIKV therapies. The results of our study highlight the molecular mechanism of the potential of epigallocatechin 3-O-gallate (EGCG) from Camelia sinensis in inhibiting nsP2 protease by binding to essential catalytic residues and exploring more energetically favorable orientations within the catalytic pocket. This dynamic binding process suggests that EGCG may disrupt the protease's catalytic functions, potentially altering domain interactions without compromising the protein's overall structure. Given nsP2's minimal homology with human proteins, the risk of cross-reactivity is reduced, making it a suitable target for CHIKV therapy. This study suggests EGCG as a prime candidate for further development as a broad-spectrum inhibitor against CHIKF.

Machine Learning to Valuate Flowering Arcs of Urban Garden Plants

9th JUNE, 15:00-16:30

I.SHALEH[1]
M.V.KEULEN[2], S.KLUMPERS[2], K.BIESMEIJER[2]

[1]IPB University, Bogor, Indonesia

[2]Naturalis Biodiversity Center, Leiden, the Netherlands

Private garden plants in the cities were known as potential oases that support food sources for the urban pollinators. Recently, machine learning (ML) has been developed to promote digital education for biodiversity assessment and conservation in urban areas. Despite its potential benefit, this technology is still developing, and the usage is still limited among urban citizens. Therefore, by using case study in Leiden, the Netherlands, this session aimed to present the example of ML usage for assessing garden plant diversity and generating urban plant flowering arcs, and to discuss the ML potential application for Indonesia urban plant biodiversity assessment. The ML-based plant identification showed that the Leiden gardens presented a high degree of flowering plant richness, diversity, and evenness. Beta-diversity analysis also indicated distinctive plant communities among individual gardens. Eight pollinator-supporting plant species with high occurrence and plant coverage were identified. The premier flowering arcs analysis on the garden flora presented diverse patterns among individual gardens with the monthly cumulative flowering peak in June. Recent example underpins the ML-based research that exhibits potent function of urban gardens as sustainable pollinator food sources. This approach is potentially applied in Indonesia, as one of prominent global biodiversity hotspots, to encourage biodiversity education among citizens and mitigate plants and pollinator biodiversity loss in urban areas. Promoting ML platforms to educate biodiversity significance and utilization of citizen science data for biodiversity research should be concerned by researchers, related stakeholders, and society as part of crucial action of preserving biodiversity in the future.

Effect of Acacia mangium Bark Extracts on Insulin Secretion of BRIN BD11 Cells

9th JUNE, 15:00-16:30

R.K SARI[1]
W.S.SYAFII[1], Y.H.PRAYOGO[1], I.Z.HAMIDI[1], B.F.PRASETYO[2], E.HARLINA[2]

[1]Department of Forest Products, Faculty of Forestry and Environment, IPB University, Bogor, Indonesia

[2]Department of Clinical, Reproductive, and Pathology, School of Veterinary Medicine and Biomedicine, IPB University, Bogor, Indonesia

Indonesia ranks fifth in the world for the highest number of diabetes cases, with 19.5 million affected individuals in 2021, and this number is estimated to increase to 28.6 million by 2045. At the same time, Acacia mangium bark (AB) is a widely available waste product from logging activities in Indonesia. In 2023, log production from the Acacia genus reached 31.11 million m^3, accounting for 45.61% of Indonesia's total log production. However, the bark remains underutilized. Various studies have explored the antidiabetic potential of AB extract, but its effect on stimulating insulin secretion (insulinotropic activity, IA) has not yet been investigated. The study aimed to determine the extraction yield of AB, evaluate its IA through an in-vitro assay, and analyze the phytochemical profile of the extracts. The inner and outer barks of AB were sequentially extracted using Ultrasound-Assisted Extraction for 45 minutes with n-hexane, ethyl acetate, ethanol, and water. The results demonstrated that different bark parts and solvent types produced extracts with varying yields, IA, and phytochemical profiles. The ethanol extract from the outer bark (OE extract) was the most promising for developing herbal medicine. Treatment with OE extract at a 100 µg/mL concentration increased insulin secretion in BRIN BD11 cells to 260.6 pg/mL, compared to 44.6 pg/mL in the untreated control group. The extraction yield of OE extract was 10.86%. Phytochemical analysis using LCMS identified dominant compounds in the OE extract, including 9-D-hydroperoxylinoleic acid, thapsic acid, azelaic acid, dibutyl sebacate, and tricaproin.

PS_12_10

A Greedy-Based Correction Approach for Tree Growth and Mortality Analysis Using NFI Time Series Data in South Korea

9th JUNE, 15:00-16:30

S.A.HUDJIMARTSU[1]

Y.H.PARK[1], J.W.BAEK[1], A.R.YUN[1], J.H.KIM[1], H.D.SHIN[1], H.S.KIM[1,2,3*]

[1]Department of Agriculture, Forestry and Bioresources, College of Agriculture and Life Sciences, Seoul National University

[2]Interdisciplinary Program in Agricultural and Forest Meteorology, Seoul National University

[3]Research Institute of Agriculture and Life Sciences, Seoul National University

Accurate analysis of tree growth and mortality is critical for understanding forest dynamics and developing sustainable forest management strategies. In South Korea, the National Forest Inventory (NFI) provides valuable time series data on tree diameter and other forest attributes, collected every five years. However, inconsistencies in measurement intervals, plot reassignments, and input errors present significant challenges for long-term analysis, particularly when evaluating temporal patterns in growth and mortality. This study proposes a Greedy Algorithm-based approach to align and correct inconsistencies in tree measurements from NFI 5 (2005–2010), NFI 6 (2011–2015), and NFI 7 (2016–2020). Unlike global optimization methods such as Dynamic Time Warping, the greedy strategy incrementally matches tree records based on minimum local difference, prioritizing efficiency and simplicity in alignment. The results demonstrate that the greedy method can effectively handle small-scale temporal mismatches and produce reliable approximations of growth trajectories. While more sensitive to outliers than elastic alignment methods, the greedy approach is highly efficient for large datasets, making it suitable for nationwide forest inventories. This research offers an efficient and applicable approach for preprocessing National Forest Inventory time series data, aiming to enhance the accuracy of tree growth and mortality estimations within long-term forest monitoring frameworks

PS_12_11

Botanic Garden Tourism: Strategy for Implementing Sustainable Tourism in Bogor Botanic Garden

9th JUNE, 15:00-16:30

U. MARANISYA[1,*]
H. MUNTASIB[2], R. SOEKMADI[2], and R.HERMAWAN [2]

[1]Tropical Biodiversity Conservation Program, IPB University, Bogor, Indonesia

[2] Department of Forest Resources Conservation and Ecotourism, Faculty of Forestry and Environment, IPB University. Raya Dramaga, Bogor 16680, West Java, Indonesia

Tourism activities in Bogor Botanic Garden should support environmental conservation and sustainability practices. Since 2021, tourism management in Bogor Botanic Garden has been given to private tourism partners. This research evaluates tourism activities that a private partner has managed. Then, this research will produce a strategy for implementing sustainable tourism in Bogor Botanic Garden. The research uses the A'WOT method. There are twelve strategies that are recommendations for the implementation of sustainable tourism in Bogor Botanic Garden. The analysis results obtained that strength factors such as the number of collections and landscape diversity, with a percentage value of 37.6%, are the main factors in implementing sustainable tourism in the Bogor Botanic Garden. Then, two strategies were produced that are priorities for implementing sustainable tourism in Bogor Botanic Garden. The priority strategy is worth 28.8%, including encouraging tourism companies to implement the concept of sustainable tourism and environmental conservation and increasing cooperation with academia and biodiversity institutions to promote the conservation and ecological education concept. Tourism activities in Bogor Botanic Garden must be a good example for other botanic gardens in Indonesia.

DAY 1

PS_44

A New Direction for Botanical Garden and Arboreta Education-Collaboration between Local Communities and Public Education

9th JUNE, 15:00-16:30

Korea National Arboretum

Presenter 1. Taehee YIM, Superintendent, Gyeonggi Office of Education

Presenter 2. Hyekyung KIM, Educational Supervisor, Gyeonggi Office of Education

Presenter 3. Sangkuk HAN, Dr., Korea National Arboretum

Presenter 4. William(NED) FRIEDMAN, Director, Arnold Arboretum of Harvard University

Discussion with all presenters, questions and answers with audience

A discussion on Gyeonggi Office of Education, which provides equitable educational opportunities, enabling students to live in harmony with nature and grow into global citizens. Based on this, we discuss examples of biodiversity and plant education programs operated in collaboration with local communities, as well as the role that university arboreta, such as the Arnold Arboretum in the United States, play within their own local communities.

Presentation 1 Tae-Hee Yim,
A new public education system for coexistence and mutural prosperity of All

Presentation 2 Hye-kyung Kim,
Through the Gyeonggi Gongyoo Hakgyo Education for Sustainable living

Presentation 3 Dr. Sang-Kuk Han,
Case Studies of Public Education Collaboration Botanic Gardens and Arboreta in Korea

Presentation 4 William(NED) Friedman,
The Role of University Arboreta in Revitalizing Community-Based Arboretum Education

A New Public Education System for Coexistence and Mutural Prosperity of All

9th JUNE, 15:00-16:30

T.H. YIM

Gyeonggido Office of Education, Gyeonggido, Republic of Korea

I firmly believe that education is the most powerful means to transform human thoughts and behaviors.
The Gyeonggido Office of Education is committed to ecological and environmental education that supports a sustainable future where nature and humanity coexist in harmony- on our planet, our shared home for all humankind.
We actively encourage schools to cultivate school vegetable gardens as part of hands-on environmental learning.
Gyeonggi Gongyoo Hakgyo* offers various ecological and environmental education programs. Some examples include learning about the life cycle of plants, exploring the local ecosystem, and understanding the relationship between the environment and dietary habits.
We are also developing a special educational application to support carbon-neutral living. It links individual carbon reduction efforts with rewards and is designed as a hands-on program that combines learning with fun.

*Gyeonggi Gongyoo Hakgyo: An educational platform beyond traditional schools, to provide student-customized education and diverse learning opportunities through partnerships with local communities

Through the Gyeonggi Gongyoo Hakgyo Education for Sustainable Living

9th JUNE, 15:00-16:30

H.K. KIM

Gyeonggido Office of Education, Gyeonggido, Republic of Korea

The connection between humans and nature can be transformed into a form of understanding and participation in the relationship between humans and nature. Gyeonggi Gongyoo Hakgyo, which connects out-of-school education to what is difficult to do in school for customized education of individual students, is an out-of-school education platform where local human and material resources work together. The community-centered ecological approach of Gyeonggi Gongyoo Hakgyo adds a role in understanding and living in the community. The diverse educational activities that lead to activities shared with the local community are the foundation of a sustainable symbiotic ecological transformation educational practice by practicing and sharing values that are in the public interest.

DAY 1

PS_44_3

Case Studies of Public Education Collaboration Botanic Gardens and Arboreta in Korea

9th JUNE, 15:00-16:30

Sang-kuk HAN

Korea National Arboretum

The Korea National Arboretum (KNA) has partnered with the Gyeonggido Office of Education to foster interest in nature and ecological practices among local youth, while also increasing awareness of the educational role of arboretums in Gyeonggido. To achieve this, the KNA has developed and piloted two educational programs designed to serve as teaching models at Gyeonggi Gongyoo Hakgyo. Additionally, the KNA has supported two Gyeonggido arboretums in implementing their unique educational programs. The arboretums involved are the Suwon Arboretum and the Hantaek Botanical Garden. Each of these arboretums has led an educational initiative aimed at helping young people in Gyeonggido understand the significance of the arboretum's function and nature. The KNA will continue to support the role of arboretums in Gyeonggido in fostering ecological competence among youth.

The Role of the Baekdudaegan Global Seed Vault(BGSV) as a Practical Tool for Climate Action

9th JUNE, 17:00-18:30

Hoejin KIM

Korea Arboreta and Gardens Institute

The Baekdudaegan Global Seed Vault (BGSV) serves as a practical tool for climate crisis by offering seed conservation education across generations and expanding sustainable conservation efforts through international cooperation.

The first session of the workshop will introduce KoAGI's educational programs on seed conservation and BGCI's global conservation initiatives.

The Baekdudaegan National Arboretum (BDNA) conducts a public program titled "Keep Your Seed" that provides experiential learning for all age groups, introducing the role of seed banks and seed vaults while raising awareness of the importance of seed conservation.

For university students, the "Campus DAMDA" program offers hands-on experiences in seed collection and conservation, where students directly collect seeds and deposit them into the seed vault. In addition, the "KEYS Program", organized in collaboration with the Asian Forest Cooperation Organization (AFoCO), targets forestry professionals from across Asia. It provides training on seed conservation and facilitates international cooperation by encouraging participants to collect seeds and deposit them into BGSV after returning to their home countries.

Botanic Gardens Conservation International (BGCI) operates the Global Botanic Garden Fund (GBGF) to enhance global collaboration in plant conservation. This session will also introduce the GSC Grants, a newly developed initiative in collaboration with BGSV.

The GSC Grants aim to foster international cooperation by encouraging seed collection and deposit through global botanic garden networks, laying the foundation for long-term joint conservation efforts.

In the second discussion session, participants—including educators and arboretum professionals from around the world will—explore effective education strategies and collaborative practices to promote multigenerational engagement in seed conservation.

DAY 1

PS_30

Connecting to Tree Energy: An Abundant yet Untapped Resource for Human Wellbeing

9th JUNE, 17:00-18:30

Bian TAN, Josephine WOO, Claire ELOUARD

Kadoorie Farm and Botanic Garden, Hong Kong

Our botanic gardens today can offer more than just education -they can be a deep source for personal transformation. With nature's resources at our fingertips, we can help people reconnect with themselves, each other, and Nature, thereby fostering resilience in the face of personal challenges such as mental-emotional well-being. Trees are an abundant source of intangible energy that can: help us be grounded in the present moment; make us feel safe and secure; help us ignite our innate intuition; and provide a way to de-stress from our daily troubles. The benefits of connecting to tree energy are still generally unacknowledged and untapped by botanic gardens. However, we can learn to perceive this energy in a conscious, intentional way -it is not only for those who are innately sensitive. The panelists aim to raise awareness of this abundant resource for human wellbeing; they offer a separate congress workshop on energy perception. Josephine Woo, head of Holistic Education at KFBG, will discuss the benefits of these workshops for her audiences: "Our transformative workshops allow participants to explore their relationship with plants and energy, strengthen their bond with nature, and uncover hidden aspects of themselves that lead to a more balanced, fulfilling life." Bian Tan, a participant in several such workshops, will relate his personal experiences with tree energy. Lastly, instructor Dr. Elouard will share her philosophy and approach to trees and Nature: "The exploration of our personal relationship with Nature leads us to the discovery of our inner landscape."

PROGRAMME

DAY 2

The 11th INTERNATIONAL CONGRESS
ON EDUCATION IN BOTANIC GARDENS

OVERVIEW

CONGRESS TIMETABLE **DAY 2**

<table>
<tr><td>09:00-10:00</td><td colspan="3">Plenary Speech 2 / Room 102-104
Breaking Down Silos: Building Interdisciplinary Partnerships through the Groen Sebenza and Fundisa For Change Programmes

Vivian MALEMA
(Director for Education and Empowerment Programmes of the South African National Biodiversity Institute (SANBI))</td></tr>
<tr><td rowspan="4">10:30-12:00</td><td colspan="3">Workshop</td></tr>
<tr><td colspan="3">Room 210</td></tr>
<tr><td colspan="3">Topioc 2</td></tr>
<tr><td colspan="3">WS_49-1
Seeds for Tomorrow: Climate Action and Sustainability
Suhyang JEON (Korea Arboreta and Gardens Institute Baekdudaegan National Arboretum)</td></tr>
<tr><td rowspan="4">13:30-15:00</td><td>Panel Session</td><td>Panel Session</td><td>Workshop</td></tr>
<tr><td>Room 209A</td><td>Room 209B</td><td>ROOM 210</td></tr>
<tr><td>Topic 5</td><td>Topic 1</td><td>Topic 2</td></tr>
<tr><td>PS_42
Plant Governance: A Sustainable Future Created by Regions and Countries

Chungho KO
(Korea National Arboretum)
Jaehyo LEE
(Suwon Arboretum)
Yoomi HA (School of Civil)
Kyungku SHIM
(School of Civil)
Yonghoon HUH
(Pukyong National University)</td><td>PS_27
Sharing Design Experiences for Eco-Friendly Construction of National Arboretum and Ecology Center

Jaesin PARK (Korea Forest Service)
Jinsun AHN (Korea Forest Service)
Jeonghwa SONG (Korea Forest Service)
Youngbum KIM (Korea Forest Service)
Woncheol SEO (Korea Forest Service)
Minjae SEO (Korea Forest Service)
Seoyeon SHIN (Korea Forest Service)
Donghyun KIM (Korea Forest Service)
Beomseok OH (Korea Forest Service)
Jeongyun HA (Korea Forest Service)
Dongwook KIM (Korea Forest Service)
Youngju KOWN (Korea Forest Service)</td><td>WS_49-2
Garden of Water – Sejong National Arboretum

Minkyeong OAK
(Korea Arboreta and Gardens Institute Sejong National Arboretum)</td></tr>
<tr><td rowspan="4">15:30-17:00</td><td colspan="3">Panel Session</td></tr>
<tr><td colspan="3">Room 209A</td></tr>
<tr><td colspan="3">Topic 2</td></tr>
<tr><td colspan="3">PS_38
Diversification and Management of Forest Plant Resources to Support Biodiversity Education

Bongwoo LEE (DMZ Botanic Garden)
Soorang LEE (Chosun University) / Eunsuk KIM (Gwangju Institute of Science and Technology)
Shukherdorj BAASANMUNKH (Changwon National University) / Yongchan CHO (DMZ Botanic Garden)
Beomkyun PARK (DMZ Botanic Garden)</td></tr>
</table>

WS_49-1

Seeds for Tomorrow: Climate Action and Sustainability

10th June 10:30-12:00

Korea Arboreta and Gardens Institute

Suhyang JEON, Korea Arboreta and Gardens Institute Baekdudaegan National Arboretum

- Presentation 1

Learn how to conserve wild plant seeds endangered by climate change.
Participants will explore the germination and propagation of seeds, and how they are stored in facilities like seed banks and seed vaults.
The program includes observation of three rare plant species and a fun activity to create your own seed barcode.

[Program Timetable]

Time	Title	Educator	Capacity
10:30~11:10	Seed Barcode	Suhyang JEON	Max of 10 people
11:20~12:00	Seed Barcode	Su-hyang JEON	Max of 10 people

DAY 2

WS_49-2

Garden of Water - Sejong National Arboretum

10th June 13:30-15:00

Korea Arboreta and Gardens Institute

Minkyeong OAK, Korea Arboreta and Gardens Institute Sejong National Arboretum

Presentation

Discover the aquatic ecosystem through lotus seeds and learn about the ecological role of aquatic plants.

Participants will use a hands-on kit to create a miniature Korean traditional garden featuring lotus ponds and native water plants.

[Program Timetable]

Time	Title	Educator	Capacity
13:30~14:10	Garden of Water	VMin-Kyeong Oak	Max of 10 people
14:20~15:00	Garden of Water	VMin-Kyeong Oak	Max of 10 people

Plant Governance: A Sustainable Future Created by Regions and Countries

10th June 13:30-15:00

Korea Forest Service, Korea National Arboretum

Chungho KO, Korea National Arboretum, Seoul, Korea
Eunji CHOI, Korea National Arboretum, Seoul, Korea
Songe JUNG, Korea National Arboretum, Seoul, Korea
Yeonjin LIM, Korea National Arboretum, Seoul, Korea

In a changing climate and a destructive environment, we have a duty to protect and preserve the disappearing plant resources. There are many ways to preserve plant resources, the most aggressive way is to reproduce the habitat by mass propagation of plants. In order to propagation a large number of plants, it is necessary to develop a mass propagation method suitable for the characteristics of each plant. Korea National Arboretum has been working to preserve plants in this way for 14 years. There are total of 591 plants that have already been studied, 157 species of endemic plant are included, including 44 vulnerable species, 7 data deficient species, 38 endangered species, 28 least concern species, 1 extinct in the wild species, and 39 critically endangered species. There were various types of mass propagation methods, but the most commonly used methods are seeding, cutting and tissue culture. For 14 years, a total of 681 mass propagation methods were developed using seeds, cuttings, tissue culture, and cultivation. 392 methods were used for seed germination, 156 methods were used for cutting, 97 methods were used for tissue culture, and 36 methods were used for cultivated. Mass propagation method using seeds classified seed type of dormancy and found germination condition. The cutting method was carried out to investigate the effects of cutting medium and plant growth regulator. In the case of tissue culture, experiments were carried out on the types of plantlet, medium composition and kinds of plant growth regulators.

Role and Challenge of Local Arboretum Using Local Related Plant Species in Suwon City

10th June 13:30-15:00

Jaehyo LEE[1], Jiyoung JUNG[2]

Suwon Arboretum[1], Suwon, Korea, Korea National Arboretum[2]

Suwon City signed an MOU with the Korea National Arboretum in 2019 to promote the conservation of rare plant species. Subsequently Suwon Irwol Arboretum was established in 2023, and a wetland theme garden with growth characteristics was created to protect endangered plants in the arboretum. In 2023, 70 endangered plants were planted in three artificial wetlands.

A monitoring survey conducted in 2023 confirmed that 48 plants successfully blossomed.

Currently, Suwon Irwol Arboretum is actively engaged in th restoration of Habenaria radiata(Thunb.)Spreng. Futhermore, in collaboration with citizen volunteers, the wetland theme garden undergoes continous monitoring and management to enhance the protection of endangered plants.

In addition, H. radiata an endangered plant, is native to Chilbosan Mountain in Suwon City, and it is being monitored to protect its native habitat with the National Arboretum.

The goal of Suwon Arboretum is not only to continuously discover plants with characteristics related to Suwon City, but also to inform citizens about the protection of local plant species to contribute to the conservation and restoration of local plants.

Case Study on New Plant Varieties for Regional Specialization and the Future of Plant Governance

10th June 13:30-15:00

Yoomi HA[1], Kyungku SHIM[1]

School of Civil, Architectural Engineering and Landscape Architecture[1]

Hibiscus syriacus holds a notable share in the horticultural market, and continuous breeding efforts have been made to develop new varieties suitable for ornamental landscaping, urban greening, and container planting. This case study presentation focuses on the development and commercialization of dwarf Hibiscus syriacus varieties, particularly those selected in the Andong region of South Korea. While Mugunghwa (Hibiscus syriacus) has traditionally held strong cultural significance in South Korea, its commercial potential has been limited due to its excessive height growth and maintenance challenges. The Andong dwarf Mugunghwa series has successfully entered the global horticultural market, generating revenue and demonstrating the potential for global competitiveness through strategic breeding and branding. Additionally, this presentation introduces international plant governance case studies and explores strategies for promoting the global commercialization of regionally specialized plants and revitalizing local economies. Furthermore, the future direction of plant governance is discussed, emphasizing key elements such as strengthening plant breeders' rights (PBR), establishing cooperative networks between local governments and research institutions, and developing sustainable cultivation systems.

Sharing Design Experiences for Eco-Friendly Construction of National Arboretum and Ecology Center

10th June 13:30-15:00

Korea Forest Service, Department of Arboretum Development Project

Jaesin PARK, Korea Forest Service, Daejeon, Korea / Jinsun AHN, Korea Forest Service, Daejeon, Korea
Jeonghwa SONG, Korea Forest Service, Daejeon, Korea / Youngbum KIM, Korea Forest Service, Daejeon, Korea
Woncheol SEO, Korea Forest Service, Daejeon, Korea / Minjae SEO, Korea Forest Service, Daejeon, Korea
Seoyeon SHIN, Korea Forest Service, Daejeon, Korea / Donghyun KIM, Korea Forest Service, Daejeon, Korea
Beomseok OH, Korea Forest Service, Daejeon, Korea / Jeongyun HA, Korea Forest Service, Daejeon, Korea
Dongwook KIM, Korea Forest Service, Daejeon, Korea / Youngju KOWN, Korea Forest Service, Daejeon, Korea

This presentation will share environmental-friendly approaches for design and construction of “Saemangeum National Arboretum, Warm-Temperate National Arboretum, and National Forest Ecology Center” (short for ‘National Arboreta’). These institutions have been developed with the goals of responding to climate change, conserving biodiversity, and utilizing resources sustainably. The discussion will focus on the design and construction strategies implemented to achieve these objectives.

1. Saemangeum National Arboretum incorporates customized design techniques to preserve tidal channels, concerning the unique ecological characteristics of reclaimed areas. This approach seeks ways to protect wetland ecosystems and conserve habitats for diverse species.
2. The aim of Warm-Temperate National Arboretum construction is an expansion of the existing Wando Arboretum, focusing on the conservation of warm-temperate forests and the development of planting strategies to address climate change. The key challenge is designing a sustainable operation without damaging the local ecosystem.
3. National Forest Ecology Center is located in a wildfire-affected area, serving as a space that demonstrates forest restoration processes. The project explores the use of fire-damaged trees in eco-friendly wooden structures, promoting resource recycling and reducing carbon emissions as a sustainable solution.

Through this workshop, we aim to share experiences in environmental-friendly design and construction for ‘National arboreta’ and explore strategies for sustainable development.

PS_38

Diversification and Management of Forest Plant Resources to Support Biodiversity Education

10th June 15:30-17:00

DMZ Botanic Garden

Session chairman: Lee Bong-Woo, DMZ Botanic Garden, Yanggu, Korea

Presenter 1: Soorang LEE, Chosun University, Gwangju, Korea

Presenter 2: Eunsuk KIM, Gwangju Institute of Science and Technology, Gwangju, Korea

Presenter 3: Shukherdorj BAASANMUNKH, Changwon National University, Changwon, Korea

Presenter 4: Yongchan CHO, DMZ Botanic Garden, Yanggu, Korea

Presenter 5: Beomkyun PARK, DMZ Botanic Garden, Yanggu, Korea

Climate crisis, land use change, and excessive resource use are leading to a global biodiversity crisis. Exploration and biological assessment for securing plant species diversity will be the most important activities for the resource development of native plants in Korea. There will be presentations and Q&A on landscape genetic approach, collection of northern plant species, rapid population changes of high-altitude trees, and the status of important biodiversity areas.

Multiple Introductions of Divergent Lineages and Admixture Conferred the High Invasiveness in a Widespread Weed (Hypochaeris Radicata)

10th June 15:30-17:00

Soorang LEE

Chosun University

Biological invasion consists of spatially and temporally varying stages, accompanied by ecological and evolutionary changes. Understanding the genomics underlying in vasion dynamics provides critical insights into the geographic sources and genetic diversity, contributing to successful invasions across space and time. Here, we used genomic data and model- based approaches to characterize the invasion dynamics of Hypochaeris radicata L., a noxious weed in Korea. Genetic diversity and assignment patterns were investigated using 3,563 SNPs of 283 individuals sampled from 22 popu lations. We employed a coalescent-based simulation method to estimate demographic changes for each population and inferred colonization history using both phylogenetic and population genetic model- based approaches. Our data suggest that H. radicata has been repeatedly been introduced to Korea from multiple genetic sources within the last 50 years, experiencing weak population bottlenecks followed by subsequent population expansions. These findings highlight the potential for further range expan sion, particularly in the presence of human- mediated dispersal. Our study represents the first population- level genomic research documenting the invasion dynamics of the successful worldwide invader, H. radicata, outside of Europe.

Implications of Population Dynamics Modeling Results on Species Distribution Changes

10th June 15:30-17:00

Eunsuk KIM

Gwangju Institute of Science and Technology

Population dynamic modeling is a technique that mathematically models vital rates (survival, growth, and reproduction) by considering the life history of a species, and can quantify the degree of population growth rate or the contribution of vital rates to population growth. Due to these advantages, research has been conducted continuously since the 1980s abroad to establish conservation strategies for rare species or to evaluate the expansion mechanisms of alien plant species, but its application to domestic species is still insufficient. In this study, we will introduce the method and results of dynamic modeling for the populations of Primula farinosa and Coreanomecon hylomeconoides, which are endemic species in Korea. In particular, we will introduce the characteristics of the temporal changes in population growth and decrease, the changes in population dynamics due to geographical differences in habitats, and the necessity of population dynamic modeling that considers the relationship with surrounding plant species. Based on these results, we will present implications of population dynamic model analysis for predicting changes in species distribution due to climate change.

PS_38_3

Recent Developments of the Flora of Mongolia

10th June 15:30-17:00

S. BAASANMUNKH

Changwon National University

Mongolia has the world's largest healthy grassland with respect to its biodiversity and traditional land use, resulting in a high important grassland plant. The flora of Mongolia exhibits remarkable adaptability to the harsh climatic conditions of the country, which are characterized by extreme temperatures, aridity, and high altitudes. The country hosts more than 3,050 native plant species from 653 genera and 111 families, including ca. 380 endemic and subendemic species. Many of those plants play a crucial role in land cover, vegetation dynamics, food resources and traditional medicine, contributing to Mongolia's unique plant biodiversity. However, Mongolia's flora is undergoing significant changes due to environmental shifts, human activities, overgrazing, and conservation efforts. Researchers examines the recent developments in the plant biodiversity of Mongolia, focusing on new species discoveries, species richness diversity, changes in vegetation distribution, and the impact of climate change on native flora. As part of ongoing research, our floristic team has been systematically studying vascular plants across Mongolia to track these changes. The findings provide deeper insights into the dynamic transformations occurring in Mongolia's plant ecosystems and offer recommendations for future research and conservation efforts. Finally, to keep the Mongolian Flora and scientifically accurate, a broader and more inclusive approach will be required, involving an even more collaborative team of taxonomists.

Abnormal Winter Drought-Induced Transient Dieback of Korean Fir in the Montane Forests of Mt. Jirisan, South Korea

10th June 15:30-17:00

Yongchan CHO

Korea National Arboretum

Although climate change-related concerns have long been raised regarding the sudden dieback of Korean fir (Abies koreana), the event'setiology and subsequent ecosystem processes must be explained. Our study aims to clarify the continuity or transience of mass mortality events within the coarse woody debris (CWD) structure and, if transient, to identify the climatic conditions (1974–2021) that could be responsible for the massive dying phenomena in Korean fir populations. On average, precipitation during the non-growing season (November–April as winter) constituted 18.5% relative to the growth period; in the winter of 1999, it was 4.8% due to an abnormal drought event. The dead stems occurred evenly across all size classes. In the CWD structure, the density and biomass of the dead fir individuals peaked in decay classes II or III. The size distribution of the retained fir was inverse-J shaped across the entire altitudinal range. The abnormal winter drought event, causing root damage by soil frost and heaving, may be one of the factors that increased Korean fir mortality across the entire stem size range. Despite transient cohort senescence, the retained Korean fir individuals transmitted drought-resistant traits into the regional pool following the drought event.

Diversity of the Genus Clematis in Korea's Forest Plant Resources

10th June 15:30-17:00

Beomkyun PARK

Korea National Arboretum

The genus Clematis L. is one of the largest genera in the buttercup family (Ranunculaceae). It consists of approximately 300 species of common in temperate regions, including northern Europe, Siberia, and the Far East, whereas other species occur in tropical regions. This genus has high ornamental value, and cultivated or used as ornamental horticultural plants. Additionally, the shoot parts and roots have potential value as natural medicinal resources.

The genus Clematis in Korea has varying taxonomic treatments and differing views on the number of taxa due to misidentifications, depending on the perspectives of different researchers. Therefore, this study conducted a re-examination through external morphological, anatomical, palynological, and molecular biological studies based on type specimens and original descriptions. Through this analysis, we aimed to clarify the key characteristics and the limits of variation, identify useful traits, assess the validity of previously recognized taxa, and elucidate the taxonomic identities and phylogenetic relationships among major taxa. As a result, major classification included characteristics, such as habit, growth type of stem, trichome of node and internode, petiole and tendril-like petiolule, margin of leaflets, papillate of leaf abaxial surface, leaf texture, inflorescence type, sexuality, sepals trichome, caruncles, texture, filament trichome, anther trichome, style trichome color, achene trichome, persistent style length, and achene surface structure. As anatomical characteristics, for some taxa within Clematis, petioles appeared to have distinguishable features, such as cross-section shape, groove of upper surface, and wings of petioles. However, the number of vascular bundles, size of phloem fiber cap, and interfascicular sclerenchyma were useful characteristics for each taxon. In addition, characteristics, such as cross-section shape, exocarp, mesocarp, endocarp, and seed coat of achenes, were useful for distinguishing taxa in the sections.

Pollen grains were of two types, 3-colpate and pantoporate. The palynological useful characters were the shape, size, and spinule of the pollen. However, it was difficult to determine the relationship within the genus, and the taxonomic value of pollen morphology was classified as limited at the taxonomic level.

Therefore, this study classified the Korean Clematis into 20 taxa and provided descriptions, plates, an identification key, and distribution maps for these taxa.

PROGRAMME

DAY 3

The 11th INTERNATIONAL CONGRESS
ON EDUCATION IN BOTANIC GARDENS

OVERVIEW

CONGRESS TIMETABLE **DAY 3**

09:00-10:00

Plenary Speech 3 / Room 102-104
Into Plants and Into Oneself
Lujing CHEN (Founder of Yi Fang Jian Di, a popular science media platform)

10:30-11:30

Plenary Speech 4 / Room 102-104
Cultivating Young Voices: Botanical Gardens as Catalysts for Youth-Led Climate Action
Ingrid Sanchez TAPIA (Global Lead on Climate & Education of UNICEF, CEO of PlanetWise Development)

13:00-14:30

Oral Presentations	Panel session	Panel session	Oral Presentations	Workshop	Workshop	Workshop
Topic 3	Topic 2	Topic 3	Topic 4	Topic 1	Topic 2	Topic 1
Chair : Sally FIERENZI			**Chair : Tara MOREAU**			
Room 101	Room 102	Room 103	Room 105	Room 209A	Room 209B	Room 210
PT_O_64 (Video Session)Makiling Botanic Gardens' Plant of the Month: Educating people from traditional to technological **Angela LIMPIADA**	**PS_35** Addressing climate Anxiety through Botanical Garden Educational programs: Analysis and Effectiveness **Eunjin CHANG** (Korea Baptist Theological University) **Hyeyoung JIN** (Korea National Arboretum) **Mike MAUNDER** (Kew REACH) **Richard V. PIACENTINI** (Phipps Conservatory and. Botanical Gardens) **Robbie KIRKMAN** (Eden Project) **Keehong CHOI** (Korea University)	**PS_9** Interdisciplinary Approach to Botanic Garden Education: Integrating Science, Art, and the Humanity **Amy PADOLF** (Fairchild Tropical Botanic Garden) **Jiyeon KOO** (Korea Botanical Art Society) **Mijung YOON** (Korea National Arboretum) **Patrick GRIFFITH** (Montgomery Botanical Center) **Till HAGELE** (Botanical Garden Munich-Nymphenburg) **Marga ANGGRIANTO** (Bogor Botanical **Garden**) **Siti Syuhada SAPNO** (Forest Learning Centre) **Andriy PROKOPIV** (Botanical Garden of Lviv University)	**EY_O_119** Youth Volunteers at the Universiti Brunei Darussalam Botanical Research Centre (UBD BRC), Brunei Darussalam **Soonboon YU**	**WS_23** Effects of forest therapy programs using botanical gardens on physical and psychological health of the elderly **Jingun KIM** (Hantaek Botanical Garden) **Junghwa KANG** (Hantaek Botanical Garden)	**WS_28** Behaviour Change in Conservation Initiatives **Ane ZABALETA** (Botanic Gardens Conservation International)	**WS_10** The Future of Arboretum Specialist Curriculum: A Curriculum Improvement Workshop With Field Experts **Jeongill JEON** (Shingu Botanic Garden) **Heesun SHIN** (Shingu Botanic Garden) **Hyekyoung PARK** (Shingu Botanic Garden) **Hyunmi LEE** (Chollipo Arboretum) **Hyeonok LIM** (Chollipo Arboretum) **Inae SONG** (Chollipo Arboretum) **Bonkwang KU** (Baekdudaegan National Arboretum) **Hyeonjeong IM** (Baekdudaegan National Arboretum) **Sungho IM** (Baekdudaegan National Arboretum)
PT_O_14 Time-Lapse Videos of Wild Flower Blooming for Botanical Collection **Taekyung YOON**						
PT_O_56 Effectiveness Evaluation of Citizen Science in Pollinator Diversity Conservation in Megacities **Wei Zhe ZHANG**			**EY_O_126** Cultivating Climate Leaders: A Middle School Engagement Mode **Britt PATTERSON-WEBER**			
PT_O_118 Using a Virtual Learning Environment, combined with online teaching technologies to inspire and engage learners in horticultural and botanical education **Graham YOUNG**						

15:00-16:30

Oral Presentations	Panel session	Panel session	Oral Presentations	Oral Presentations	World Café	Workshop	Workshop
Topic 5	Topic 2	Topic 2	Topic 1	Topic 2	Topic 4	Topic 2	Topic 2
Chair : Amy BOLTON			**Chair : Keehong CHOI**	**Chair : Heeyoung RYU**			
Room 101	Room 102	Room 103	Room 104	Room 105	Room 209A	Room 209B	Room 210
NB_O_49 Democracy in Bloom: How Participatory Design Is Transforming Botanical Gardens **Anna ALBIN**	**PS_24** Current Status us of Arboretum and Botanical Garden Education for Central Asia Biodiversity Conservation **Komil TOJIBAEV** (Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan) **Gulnara SITPAYEVA** (Institute of Botany and Phytointroduction) **Ivan KHEGAI** (Scientific Research Institute Botanical Garden) **Dovutsho NAVRUZSHOEV** (Pamir Biological Institute) **Kyung CHOI** (Korea National Arboretum) **Hyukjin KIM** (Korea National Arboretum) **Heeyoung GIL** (Korea National Arboretum)	**PS_22** UNESCO East Asia-KNA Joint Panel Discussion: Botanic Gardens, the Hub for Wellbeing, Sustainability and SDG Action through Education, Research, and Conservation in East Asia **Meeyoung CHOI** (UNESCO Regional Office for East Asia) **Ai SUGIURA** (UNESCO Regional Office for East Asia) Sarangerel OIDOVSAMBUU (Mongolian Academy of Sciences) **Jungyu BAE** (Korea National Arboretum) **Tomohisa YUKAWA** (Tsukuba Botanical Garden) **Ren HAI** (South China Botanical Garden)	**HW_O_90** Supporting Botanical Gardens in a Time of Crisis: The Case of Wartime Ukraine **Anthony ALLISON**	**BS_O_36** From Opportunity to Legacy: Global Artistry and Local Partnerships **Michael HARVEY**	**WC_19** Exploring Climate Change with Children **Sewon CHEON** (Donga Science) **Donghak KIM** (Korea National Arboretum)	**WS_5** Utilising Reverse the Red to Engage with and Empower Communities **Megan JOYCE** (Reverse the Red)	**WS_39** Investigating Biomimicry as a Tool for Plant-Based Education on Junior Global Goals **Thal JONAS** (Hortus botanicus Leiden) **Maxime BOERSMA** (Hortus botanicus Leiden) **Nuala TEERINK** (Hortus botanicus Leiden)
NB_O_51 **Sen'oi Serog** ("People Who Stay in the Forest for Ages" in Temiar Indigenous Language) **Hairul ABDULLAH**			**HW_O_97** Construction, Implementation, and Utilization of School Teaching Botanic Gardens Based on the Concept of Nature Education: A Case Study of School Teaching Botanic Gardens at Zhaoqing Xinqu Central Primary School **Lifang PENG**	**BS_O_104** Interdisciplinary Success Cases at South China Botanical Garden, Chinese Academy of Sciences **Rubing TAN**			
NB_O_57 A New Model of Natural Experience for Visually Impaired Groups: An University Service Learning Practice Project Based on Shenzhen-Hong Kong Collaboration **Shan LI**			**HW_O_103** Exploration of the "Plant+" Science Communication Model in National Botanical Gardens **Ying WANG**	**BS_O_106** Training the Next Generation of Plant and Fungal Scientists **Richard Umberto GIANFRANCESCO**			
NB_O_67 Promoting Equity, Inclusion, and Community Engagement at Tooro Botanical Gardens **Harriet KOKUGONZA**			**HW_O_125** Nature's Variation: The Influence of Urban Site Perceptual Qualities on Children's Competency Development **Zhihui YUE**	**BS_O_107** Beyond the Classroom at the Singapore Botanic Gardens **Steffi LOE**			

17:00-18:30

Oral Presentations	Panel session	Panel session	Oral Presentations	Oral Presentations	Workshop	Workshop
Topic 5	Topic 1	Topic 2	Topic 1	Topic 2	Topic 5	Topic 3
Chair : Amy BOLTON			**Chair : Lifang PENG**	**Chair : Heeyoung RYU**		
Room 101	Room 102	Room 103	Room 104	Room 105	Room 209A	Room 209B
NB_O_83 (Video Session) Educational Programs for Primary Schools in the Botanic Garden of the University of Maribor: Natural and Cultural Heritage & Ethnobotany **Metka PIVEC**	**PS_11** Plant-Based Activities for Human Well-being **Aekyung LEE** (Dankook University) **Sinae PARK** (Kunkook University) **Hyeran KWACK** (Seoul National University of Education) **Miae JEONG** (Korea National Arboretum) **Junghee LEE** (National Institute of Forest Science)	**PS_25** WWF-KNA joint-session: A Strategic Approach to Activities (Including Education) for Enhancing Awareness of Biodiversity Conservation **Minhye PARK** (WWF) **Nicholas TAYLOR** (GGGI) **Li-Wan CHANG** (Taiwan Forestry Research Institute) **Yu QIAN** (International Crane Foundation) **Carlos VELAZCO** (National Geographic Explorer) **Eunjung LEE** (Korean Broadcasting System)	**HW_O_135** Exploring the connection between Plants and Human Health through Nature Education **Mei LI**	**BS_O_114** ABCDE- Interdisciplinary Workshops in Botanic Gardens **Asthildur JONSDOTTIR**	**WS_8** Empowering Voices: Gender Equality and Social Inclusion in Botanic Garden Education Projects **Annelies ANDRINGA** **Helen MILLER** (Botanic Gardens Conservation International)	**WS_41** Mapping the Visitor Experience - A Tool to Improve Your Garden **Chuck LENNOX** (Lennox Insites)
NB_O_79 Educational activities using plants that stimulate the five senses, sign language, and 3D models **Chie TSUTSUMI**			**HW_O_137** Arboretum's Approach to Arts Education for Healing and Recovery **Jiyun CHOI**	**BS_O_116** Becoming a Biologist: The Impact of a Quasi-Apprenticeship Program on Chinese Secondary School Students' Career Intention **Jinli ZHAO**		
NB_O_85 Urban Nature: A portable exhibition about pavement plants **Maxime BOERSM**			**HW_O_176** A Simple Idea for an Effective Outdoor Educational Program among the Plants **Regis CRISNAIRE**	**BS_O_132** Addressing Global and Complex Issues through a Playful Interactive Workshop That Encourages Positive Imagination of the Future: A Case Study at Meise Botanic Garden **Eline BOTTE**		
NB_O_94 Environmental Education and Mayan Ethnobiology: Experiences from the 'Roger Orellana' Regional Botanical Garden in Mérida, Yucatán, Mexico. **Isai OLALDE**			**HW_O_180** Unlocking Youth Passion for Nature **Polly GIFFORD**	**BS_O_140** Development of an Educational Plant Kit Using Goodyera spp. In Vitro Propagation Techniques **Changho AHN**		

Outdoor Workshop
Time : 11 JUNE 15:00 - 16:30, Place: Bongeunsa Temple (531 Bongeunsa-ro, Gangnam-gu, Seoul)
Topic 3 **WS_29**
Awaken Your Perception of the Energy of Trees

Bian TAN, Claire ELOUARD, Josephine WOO (Kadoorie Farm and Botanic Garden)

Makiling Botanic Gardens' Plant of the Month: Educating People From Traditional to Technological

11th June 13:00-14:30

L.A.CASTILLO[1], M.S.CANCERAN[1], A.C. MALAYBA[1], MB.L.PUTIAN[1], R.P. CERENO[1,2], and A.A.LIMPIADA[1*]

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Keywords: education, technology, conservation, biodiversity

Education and technology must go hand in hand for effective understanding and appreciation of plant diversity in botanic gardens. At the Makiling Botanic Gardens' (MBG) – Philippines, education is one of its major functions as a training laboratory for instruction, research and extension as mandated by Republic Act 3523. The Plant of the Month (POM) which started in 2013 is MBG's way of educating people about the Philippine plants. The POM features plant species from MBG's wide array of living collections of epiphytes, shrubs and trees which are currently flowering and fruiting during the month that it will be featured. It generally aims to enhance awareness, increase understanding and appreciation of Philippine plants including their importance, diversity, and conservation. From a simple information board installed at the entrance of MBG in 2013, the POM was launched via online platforms in 2017 in response to the demand of information and technology. From POM's launching in March 2017 via youtube and facebook, it has now a total of 50,192 views. From these 50,192 views from you tube and facebook, data revealed that the POM with most views are those with peculiar and unique characteristics which include: (1) Medinilla magnifica Lindl. (August 2016), (2) Molineria capitulata (Lour.) Herb. (May 2021); (3) Voacanga megacarpa Merr. (October 2019); (4) Alpinia purpurata (Vieill.) K.Schum. (December 2020); (5) Brownea grandiceps Jacq. (March 2027). Viewers' age 18-65+ years old where 35-44 years old with most views. Brazil has the highest viewership, followed by Philippines, India, United States of America and then Turkiye. In terms of gender, more females are hooked to POM with 70.7% and 29.3 for the males. May it be traditional or technological, MBG's Plant of the Month is committed to provide information for education and appreciation of diverse plant species for biodiversity conservation and protection.

Time-Lapse Videos of Wild Flower Blooming for Botanical Collection

11th June 13:00-14:30

T. K. YOON[1,*]

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Keywords: limited to six words or phrases, separated by commas

Observing the flower blooming sequence from bud opening to petal growth and closure would be inspiring in terms of both science and aesthetics. However, efforts are wasted on time-consuming manual observations of sudden and/or subtle changes. Moreover, the color, morphology, and aesthetics of flowers are rarely preserved in herbarium specimens. Can time-lapsed videos offer a means to capture, preserve, and share the beauty of flower blooming? This review examines the value of timelpase videos of flower blooms for botanical collections and ecological studies in an era of dominant media change from text or image to video. Time-lapsed videos of flower-blooming are abundant on YouTube; thus, using them to observe flower blooming is not a new practice. However, this review analyzed that most of these studies are not informative from an ecological perspective for several reasons. Alternatively, this presentation introduces a good practice and application of flower blooming time-lapse videos for ecological observations and botanical collection. Time-lapse videos of flower blooming not only capture public interest and enhance education in plant ecology, but also open new avenues in plant phenotyping, botanical, and ecological research.

Effectiveness Evaluation of Citizen Science in Pollinator Diversity Conservation in Megacities

11th June 13:00-14:30

W. Z. ZHANG[1], W. CHENG[1], M.C. LIN[1], and H. DONG[*1]

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Keywords: Citizen science; Urban biodiversity; Pollinating insects; Entomological literacy; Botanical garden

As biodiversity research progresses, reliance solely on scientists has proven insufficient for large-scale species surveys. Citizen science projects have emerged as a vital solution to address challenges in scientific data acquisition, public scientific literacy enhancement, and limited research resources. These projects not only provide opportunities for public engagement in science but also inject new vitality and innovation into research. Nectar plants and pollinating insects are critical components of ecosystems, playing pivotal roles in maintaining biodiversity and ecological balance. This study launched the citizen science project " Nectar Plants and Where to Find Them" in 5 Chinese megacities (Guangzhou, Hong Kong, Shenzhen, Shagnhai, Guangdong-Macao In-Depth Cooperation Zone in Hengqin). In Shenzhen, 262 citizens utilized the "BioGrid" applet to record 3237 pollination events involving 406 pollinator species with a high identification accuracy in 2024 within 6 months, demonstrating a 82.8% increase in species richness compared to 2023 data (222 pollinators across 1968 events), indicating that the project may play a role in protecting pollinators. Meanwhile, a questionnaire survey was conducted to evaluate project volunteers' changes in perception of biodiversity conservation. We found that 86 recruited volunteers demonstrated marked improvements in scientific knowledge of pollinators, species investigative skills, and entomological literacy with perception of pollinator ecological roles after the training of the citizen science project. By harnessing technology, these findings underscore the dual efficacy of citizen science in generating robust ecological datasets and cultivating environmental stewardship.

Furthermore, it promotes citizens learning and engagement in the construction of pollinator-friendly garden, and advances the development of inclusive biodiversity cities and offers innovative methodologies for scientific research.

PT_O_118

Using a Virtual Learning Environment, combined with online teaching technologies to inspire and engage learners in horticultural and botanical education

11th June 13:00-14:30

G.YOUNG[1]
J.ROBERTSON[1]

[1]Royal Botanic Garden Edinburgh

The Royal Botanic Garden Edinburgh provides a range of courses from day courses to postgraduate qualifications. These courses deliver learning by various methods; face to face teaching in a classroom or garden environment, online learning, or a combination of both. Learners are increasingly attracted by the flexibility an online format provides, allowing the ability to study remotely and at times that suit them. We have harnessed online technologies to respond to this demand, thus giving more learners access to experts in our world leading Botanic Garden. For the botanic educator, the online space provides us with a global audience for our work to explain the importance of plants and how they build climate resilience and address the biodiversity crisis. Twelve years ago, we created a Virtual Learning Environment called PropaGate Learning, built on the Moodle platform. The inhouse Learning Technology team works alongside tutors to design and develop courses while continuously developing the site to improve the user experience. Courses include online forums, where students can ask questions, discuss coursework and collaborate. We also provide quizzes, interactive lessons and video content. Experience has taught us that the pace of learning, encouraging engagement giving learners different ways to learn and high-quality content are vital. The presentation will outline our learning from harnessing this technology, with particular emphasis on engaging large cohorts of over 100 learners on the Royal Horticultural Society's new Level 2 Certificate in Plant Growth and Development qualification. It draws on student feedback, course evaluation and staff observations, looking at strengths of the online model, and the level of student engagement that needs to take place for learning success.

Youth Volunteers at the Universiti Brunei Darussalam Botanical Research Centre (UBD BRC), Brunei Darussalam

11th June 13:00-14:30

R.S. SUKRI[1,*], N.H. ZAINI[1], B.Y. SOON[1], and M.A. RUSLAN[1]

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Keywords: Brunei, botanic garden, botanical conservation, youth and volunteer engagement, environmental education, environmental awareness

The Universiti Brunei Darussalam Botanical Research Centre (UBD BRC), Brunei's first botanic garden, serves as a hub for research, conservation, and education. Since its official launch in 2018, UBD BRC has actively engaged volunteers, primarily young researchers and graduates, in various conservation and outreach initiatives that contribute to climate change mitigation. These volunteers play a key role in habitat restoration, afforestation efforts, and the preservation of carbon-storing plant species, such as Dipterocarpaceae and Nepenthaceae. Through ex-situ conservation, seed collection, and nursery management, they contribute to the propagation of native flora, supporting ecosystem resilience in the face of climate change. Their participation in guided tours, plant care workshops, and herbarium training sessions raises public awareness of the role of forests in carbon sequestration and climate adaptation. Additionally, volunteers engage in digital storytelling and social media outreach, amplifying messages about environmental sustainability and inspiring broader community action. The program provides hands-on experience in scientific research, data collection, and conservation techniques, equipping volunteers with the skills necessary for careers in environmental science and climate advocacy. Many volunteers, particularly recent graduates in environmental sciences, gain practical skills that improve their career prospects while actively contributing to reforestation and climate resilience strategies. Looking forward, UBD BRC aims to expand its volunteer initiatives by strengthening community engagement, offering new training opportunities, and enhancing conservation efforts to mitigate climate impacts. By investing in its volunteer programs, UBD BRC continues to foster a new generation of environmental advocates dedicated to preserving Brunei's botanical heritage and addressing the challenges of climate change.

Cultivating Climate Leaders: A Middle School Engagement Model

11th June 13:00-14:30

B. Patterson-WEBER[1,*]

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Keywords: plant-centered climate education, middle school engagement, afterschool program, hands-on environmental learning, empowering youth

In 2022, Naples Botanical Garden (NBG) was one of five public gardens selected by the United States Botanic Garden to join them in a two-year learning cohort, called Plants and Climate Change Education (PLACCE), in which peer institutions created and tested different plant-centered climate change education models. NBG's program is for middle school students (ages 11-15) at a school in a low-income rural community. The program, called D.R.A.G.O.N. Squad (Dedicated Researchers Adventuring for Greener Outdoors Now), started with a one-week summer intensive that transitioned to a weekly afterschool program. Students learn about plants and climate change through games, hands-on student-led projects, and field trips to local natural wonders. Thoughtfully designed curriculum introduces students to local ecosystems, climate science, regional climate change threats and solutions, as well as the professionals working to protect the environment. The program has continued beyond the pilot, with one-week intensives during school holidays and weekly afterschool meetings. Seeing the same group of students throughout the year means that content can be layered, revisited, and connected to new content. The middle school audience is one that is often underserved when it comes to enrichment opportunities; they have a complex set of needs as they straddle the world between young children and independent older teens. They are all part of the "climate generation," experiencing climate change more immediately in time and space than children of previous generations. Decisions made by policymakers today impact their lives tomorrow. Thus, a goal of D.R.A.G.O.N. Squad is to empower students with the knowledge to be informed members of society and to share with them how they can be active in community decisions now. In this session, the presenter will share lessons learned from working with this age group and developing plant-centered climate change curriculum that is both informative and fun.

NB_O_49

Democracy in Bloom: How Participatory Design Is Transforming Botanical Gardens

11th June 15:00-16:30

A. ALBIN[1,*], M. WOJCIESKA[1], I. KUZYSZYN[1], M. OPRZADEK[1], M. ZYCH[1]

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Keywords: democracy, co-creation, interpretation, education, botanic garden

Botanic gardens are embracing democracy. In 2020, the University of Warsaw Botanic Garden launched two participatory design projects—InfOgród and InfOgrodek—aimed at developing an educational system tailored to the needs of both adults and children. These initiatives engaged diverse participants, including visitors, employees, and individuals unfamiliar with the garden, using the design thinking methodology. Through a structured process of research, idea generation and selection, participants contributed over a hundred innovative concepts for enhancing visitor experiences. Now, the process continues as these ideas are put into practice to create more interesting, inclusive, and participatory spaces. The presentation focuses mostly on the adult-oriented version of the project, details its methodology, outcomes, and ends with future considerations for integrating co-creation in botanical education.

Sen'oi Serog ("People Who Stay in the Forest for Ages" in Temiar Indigenous Language)

11th June 15:00-16:30

H. ABDULLAH[1], Z.N. WONG[1]

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Keywords: indigenous ecological knowledge, conservation art, storytelling, cultural heritage preservation, youth-led

Sen'oi Serog is a storybook that narrates the journey of the Temiar indigenous community, highlighting their forest taboos, cultural traditions, and botanical knowledge. The story revolves around the "Bering" event, a significant fruiting season when the Temiar people forage for wild fruits like Artocarpus species. This event aligns with the phenological cycle of fruiting trees between July and September, demonstrating the deep connection between Temiar traditions and the rainforest ecosystem. The project addresses cultural barriers in conventional children's books, which typically use Bahasa Malaysia, English, or Chinese, excluding indigenous languages. With 18 indigenous tribes in Malaysia, many lack educational resources in their native tongues. Sen'oi Serog bridges this gap by incorporating ancestral stories, forest taboos, and botanical and wildlife species in the Temiar language. Co-developed with the TRCRC team at TRLC-Banun and five Temiar indigenous field team members, The book features botanical illustrations that help young readers identify and understand rainforest species, sparking curiosity and fostering a connection to their environment. Community elders Omar bin Pura and Apok bin Alok contributed invaluable wisdom. Beyond an educational tool, Sen'oi Serog serves as a cultural asset, fostering intergenerational learning within the Temiar community. Through book-sharing roadshows and storytelling sessions, the project strengthens indigenous engagement in conservation. It inspires Temiar youth to take pride in their heritage and explore careers in forest conservation. By preserving and promoting indigenous ecological knowledge, the book and its outreach programs help overcome socio-economic and cultural barriers. Sen'oi Serog ensures the continuity of indigenous wisdom, making it accessible both within the community and to a broader audience in Malaysia.

A New Model of Natural Experience for Visually Impaired Groups: An University Service Learning Practice Project Based on Shenzhen-Hong Kong Collaboration

11th June 15:00-16:30

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Keywords: Shenzhen-Hong Kong co-operation, visually impaired group, nature experience, botanic gardens, social services

The botanical garden serves as an essential site for the public to engage with nature, enjoy recreational activities, and acquire botanical knowledge. However, persons with visual impairments frequently encounter significant obstacles in accessing and experiencing nature due to their physical limitations. To fulfill its social responsibility and foster the well-being and social inclusion of persons with visual impairments, Fairy Lake Botanical Garden, Shenzhen & CAS, in collaboration with the Service Learning team from CW Chu College of the Chinese University of Hong Kong, and the Shenzhen Optometric Association, jointly initiated and executed the "Sensory Journey - Fairy Lake Summer Tour" public service project as part of the Botanical Garden to Campus Program. This project encompassed comprehensive demand research, training in tour guiding and interpretation skills, meticulous activity planning, as well as feedback collection and post-activity summaries. The project successfully enabled persons with visual impairments to visit the Shade Garden and Herb Garden in Fairy Lake Botanical Garden, where they experienced a safe and enjoyable nature exploration with applicable knowledge for their daily lives. This project not only improved the life skills and self-esteem of persons with visual impairments but also enhanced the social responsibility awareness among students and demonstrated the high respect of the botanical garden for the equal participation rights of marginalized communities. Moreover, the project served as a commendable model for collaboration between Shenzhen and Hong Kong in the realm of school program and social services.

NB_O_67

Promoting Equity, Inclusion, and Community Engagement at Tooro Botanical Gardens

11th June 15:00-16:30

Harriet KOKUGONZA

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Keywords: limited to six words or phrases, separated by commas

Tooro Botanical Gardens (TBG) in Uganda is committed to conservation, education, scientific research, and recreation. Recognizing the importance of equity and inclusion, TBG actively works to remove barriers that prevent marginalized communities from accessing and benefiting from botanical education and conservation programs. Many communities face barriers to accessing botanical gardens due to economic, cultural, or physical challenges. TBG addresses these by offering inclusive educational programs, community-led initiatives, and outreach efforts that integrate indigenous knowledge and conservation practices, ensuring local voices shape botanical education. Recognizing the deep connection between culture and nature, TBG collaborates with elders and cultural practitioners to safeguard traditional languages, stories, and ceremonies linked to botanical heritage. Ethnobotanical gardens and storytelling sessions celebrate the role of plants in medicine, food, and rituals, strengthening both cultural identity and conservation efforts. By honoring diverse knowledge systems and promoting cultural heritage within its programs, TBG fosters a sense of belonging and shared responsibility for the environment. Through these efforts, the garden becomes more than a place of learning—it becomes a space where people, nature, and culture come together to inspire a more inclusive and sustainable future.

Supporting Botanical Gardens in a Time of Crisis: The Case of Wartime Ukraine

11th June 15:00-16:30

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Keywords: Botanic Gardens Conservation International, botanical gardens in time of crisis, involvement of a partner organization, public programs of Ukraine's botanical gardens, Partnerships for Nature, therapeutic horticulture

Botanic Gardens Conservation International (BGCI) assists botanical gardens in times of crisis through its Disaster Recovery Fund, which may involve a focused fundraising Appeal to its members. The process of providing assistance can be enhanced by involvement of a partner organization with strong connections to the crisis area. Following Russia's full-scale invasion of Ukraine in February, 2022, the world-class collections and public programs of Ukraine's botanical gardens were endangered. Partnerships for Nature (PN), a US non-profit and long-time ally of Ukrainian gardens, approached BGCI with a proposal to collaborate on offering assistance. The result was an Appeal aimed at preserving collections, supporting garden staff, and ensuring that Ukraine's botanical gardens could continue to serve as oases of respite, recovery, and education during the war. In 2024, a second fundraising effort was staged to support the introduction of therapeutic horticulture for displaced families, veterans, and others experiencing loss and stress. Financial support was accompanied by ongoing webinars and round tables for Ukrainian garden staff on education topics such as interpretive signage, working with volunteers, partnering with schools, and ecological restoration. In-person training included a therapeutic horticulture workshop in Poland and site visits to Kew Gardens and other education centers in London. As a result, Ukrainian botanical gardens have become better equipped to offer impactful education programs, and to play a critical role in wartime and postwar Ukraine. This talk will explore BGCI's assistance programs, with a focus on the case of Ukraine and the role of an intermediary organization, as a possible model for projects in other countries. The talk, which will include a Ukrainian garden director closely involved in the assistance effort, will focus on how needs can be evaluated and addressed during a crisis, and on lessons learned from the Ukraine experience.

Construction, Implementation, and Utilization of School Teaching Botanic Gardens Based on the Concept of Nature Education: A Case Study of School Teaching Botanic Gardens at Zhaoqing Xinqu Central Primary School

11th June 15:00-16:30

L.F. PENG[1*], H.P. XIA[1]

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Keywords: Nature education; School teaching botanical garden; Interdisciplinary integration

As a crucial approach to advancing ecological civilization construction and an effective carrier for achieving interdisciplinary integration, nature education has garnered increasing attention from educational institutions. The school teaching botanical garden, serving as a practical platform for nature education, not only provides students with opportunities to experience nature firsthand and engage in environmental practices but also establishes a foundation for schools to implement interdisciplinary teaching, inspire scientific thinking, and promote environmental protection education. This paper presents a case study of Zhaoqing Xinqu Central Primary School in Guangdong Province, where existing campus land resources were fully utilized to develop a teaching botanical garden guided by nature education principles. Through rational planning and zoning, distinctive functional areas were established, including a Phenological Garden for observing seasonal plant changes, a Butterfly Garden to explore host plants for butterflies, a Five-Senses Garden to stimulate sensory experiences, an Evolution Garden to illustrate the history of life evolution, and a Lingnan Medicinal Garden showcasing regional medicinal culture. Additionally, tailored student learning manuals were designed to guide teachers in leveraging the botanical garden for interdisciplinary instruction. This paper aims to explore effective methods for science education and to cultivate students' environmental awareness, offering a valuable reference for the construction, implementation, and utilization of campus teaching botanic gardens under the guidance of nature education principles in primary and secondary schools.

HW_O_103

Exploration of the "Plant+" Science Communication Model in National Botanical Gardens

11th June 15:00-16:30

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Keywords: plant+, science communication model, public education, national botanical garden, SCBG

The national botanical garden system in China is a national botanical garden layout launched in 2022, gradually building a national botanical garden system with Chinese characteristics, world-class, and harmonious coexistence of all creatures. By strengthening the coordination with the national park system, a new pattern of ex situ and in situ conservation of biodiversity will be formed. The construction of the national botanical garden system will highlight national representativeness, scientific systematicity, and social welfare. NBGs will focus on the collection, complete preservation, high-level research, and sustainable utilization of plant. Coordinating the functions of ex situ protection, NBGs will carry on projects of scientific research, resource utilization, science popularization, and landscaping, in order to form a national ex situ protection system providing strong support for curbing the loss of wild plant diversity and ecosystem restoration. The science communication and public education of the national botanical garden system will be based on on-site observation information of plants and cultivation evaluation information of plant under ex situ conservation in the botanical garden, combined with modern communication tools, big data management, AI applications and other new technologies. We will explore how to efficiently spread new discoveries and achievements in plant science research to people of different age groups. We will integrate plant culture and art to make scientific dissemination more attractive to young people. By collaborating with scientists, graduate students, science popularization professionals, volunteers, and community workers, we will explore a "plant+" scientific dissemination model in the national botanical garden.

HW_O_125

Nature's Variation: The Influence of Urban Site Perceptual Qualities on Children's Competency Development

11th June 15:00-16:30

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Keywords: environmental perception, urban nature education, participatory observation, curiosity, social behaviour

Urbanization is transforming land use patterns and redefining human interactions with the natural environment. An increasing number of urban green spaces are being repurposed for nature education and as accessible areas for city dwellers to engage with nature. These natural environments are crucial in the development of children's sensorimotor skills, physical coordination, and overall sense of competence. However, there is limited research on how the specific characteristics of natural environments impact educational outcomes.

This study used a quasi-experimental design over a nine-week period, with one session per week, at 24 diverse sites in Hangzhou, China, to assess the effectiveness of an established urban nature education program. A total of 96 participants aged 6-11, voluntarily enrolled and consistently participated. To explore the relationship between perceived environmental quality and children's competency development—particularly their curiosity and social behaviours—our study utilized both perception evaluations and participatory observation.

The results revealed notable discrepancies between children's and adults' perceptions of these environments, especially concerning safety and novelty. Children's perceptions of naturalness were strongly associated with their sensorimotor curiosity, while perceived safety was linked to cognitive curiosity. Furthermore, perceived beauty was negatively correlated with increased distracted behaviour and diminished responsibility during sessions. Conversely, perceived safety had a positive impact on responsible behaviour, and perceived naturalness fostered cooperative behaviour in social interactions.

These findings highlight the nuanced ways in which environmental perceptions influence children's engagement and behaviour in nature educational settings. Botanical garden, in particular, emerge as ideal locations for continuous nature education programs aimed at fostering children's competency development.

BS_O_36

From Opportunity to Legacy: Global Artistry and Local Partnerships

11th June 15:00-16:30

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Keywords: Partnerships, Public Engagement, Volunteer, Education and Youth Programs, Commercial Activities

In 2024/25, the Botanic Gardens and State Herbarium of South Australia (BGSH) has delivered a landmark public engagement project, Chihuly in the Botanic Garden. The botanic gardens exhibitions created by artist Dale Chihuly and his Seattle studio are well-renowned – particularly in the USA and Northern Hemisphere. This project in Adelaide is the first time such a project has been mounted in Australia, and at a "free-entry" botanic garden. The delivery of the project has therefore entailed a level of government, business, and community support that far surpasses any previous engagement project at the BGSH, as well as the development of new skills and capacities within our organisation. The project has proved a great success, well beyond initial expectations – a success that is driven by the diversity of interdisciplinary partnerships that was established through its development.

In realising the project new partnerships were forged, not only with the Chihuly Studio and multiple ministries in the South Australian Government, but also local arts centres and artists, media agencies, logistics and technical companies, researchers, and the hospitality sector. New recruitment of volunteers has more than doubled our volunteer cohort over the life of the project, and innovative education and public program development has seen a highly diverse audience engage with both garden and artwork, while ensuring the financial viability of the project. Record visitor numbers, and a significant increase in the garden's profile at both local and national level, mean that this project will leave a lasting legacy.

This presentation explores the partnership-based approach the BGSH took throughout the life of the project, the principles under which it was developed and the outcomes of these partnerships. It will also provide the broader strategic context in which the project was developed and how the BGSH is pursuing longer-term benefits and learning from our experience.

Interdisciplinary Success Cases at South China Botanical Garden, Chinese Academy of Sciences

11th June 15:00-16:30

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Keywords: Interdisciplinary Cases, ecological, education, botanical Garden

This report presents two interdisciplinary Success Cases of South China Botanical Garden,Chinese Academy of Sciences. The first case involves the construction of a demonstration base for ecological environment damage compensation and ecological restoration, jointly developed by the Botanical Garden and the Guangzhou Municipal Ecological Environment Bureau. The base is divided into four sections: "Plants Resistant to Air Pollution " "Plants for Dust Blocking " "Plants Tolerant or Enriched with Heavy Metals " and "Plants for Soil and Water Conservation " These sections comprehensively demonstrate the role of different plants in repairing air, soil, and water pollution. This initiative is the result of negotiations in Guangzhou's first case of atmospheric ecological environment damage compensation and serves as the city's first practice base for ecological damage compensation and restoration. It effectively communicates the principle that "the environment has value, and damage must be compensated," achieving both ecological restoration and carbon sequestration while serving as a platform for public education and warning.The second case highlights the South China Botanical Garden's collaboration with the Guangzhou Municipal Education Bureau through a science planting technology and labor education project for primary and secondary schools. The garden successfully assisted in organizing two city-wide school science planting exchange and exhibition events and conducted four training sessions to enhance teachers' capabilities in science planting education. Additionally, the garden supported the education bureau in creating three batches of science planting demonstration campuses and evaluating four batches of exemplary lesson plans. The project also compiled achievements from the demonstration campuses and outstanding cases, establishing an online platform for science planting to synchronize online science education activities.These cases highlight the Botanical Garden's role as a hub for innovative, actionable solutions to environmental and educational challenges, leveraging partnerships to maximize societal impact.

BS_O_106

Training the Next Generation of Plant and Fungal Scientists

11th June 15:00-16:30

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Keywords: Education, partnerships, capacity building

More than 10 years ago, Kew's approach to higher education was fragmented and piecemeal. The quality and impact was difficult to track, Kew rarely received any recognition for this work, and it was often offered free of charge.

With the launch of Kew's Science Strategy in 2015, Kew set out on a journey to change its approach to scientific training, centralising its approach and working with named academic partners.

Since then, Kew now formally partners on three MSc courses with two UK universities, with over 75 students studying for these courses in the academic year 2024/5. Over 80 of Kew's academic staff contribute to these courses, including over 40 who supervise student projects.

We have also doubled our PhD cohort in the last five years – from 65 to 130, and are now partnering with 65 different universities – 30 of them overseas. In 2024 Kew launched a new Global PhD programme, supporting students at local overseas universities in their home countries, while being co-supervised by Kew staff.

In addition, in the last few years, Kew has launched and continues to grow other science education programmes. Last year we welcomed over 60 students to Kew for short-term placements, hosted visits from university undergraduate groups, continued to fund a Kew Fellowship Programme for early career researchers, and delivered a wide range of professional training courses across the world.

In this talk I will reflect on this journey, highlight some of the challenges as well as the impact we have made. I will also look ahead to the future – and seek to use the presentation to highlight the need for even greater partnerships going forward. Our aim is to train the next generation of scientists – and we need to be doing this especially where the threat to biodiversity is highest.

Beyond the Classroom at the Singapore Botanic Gardens

11th June 15:00-16:30

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Keywords: Singapore Botanic Gardens, Education, Outreach, Programme Impact, Interdisciplinary Collaborations

Established in 1859, the lush landscapes of the 82-hectare Singapore Botanic Gardens provide a unique place that is rich in history within our urban city for people to encounter and connect with nature. With a mission to connect plants and people and engender environmental stewardship, the Gardens' Education team has developed interdisciplinary educational programs that foster collaboration within SBG and with external partners. These initiatives bridge traditional silos, providing diverse learning experiences that resonate with a wide range of audiences—from children and families to students and the broader community.

The Gardens' thematic programmes encompass a variety of themes namely, Wildlife, Culinary, Plants, Storytelling, and Art. These programmes not only promote conservation awareness but also engage a broader audience by incorporating a variety of subjects and approaches such as dramatisation, interactive storytelling and hands-on activities. In doing so, we encourage participants to connect with nature through multiple lenses, transforming the Gardens into a space for interdisciplinary learning.

One key example of our interdisciplinary approach is a programme run for youth, known as the Science Behind the Gardens programme. This programme showcases the research and horticultural work in the Gardens and encourages participants to develop an emotional connection with nature. It involves collaboration across SBG's departments, including Living Collections, Herbarium, Seed Bank, and Research & Conservation staff coming together to share their knowledge with these youth. The programme allows students to experience firsthand the research, conservation, and educational initiatives that take place at the Gardens, allowing them to gain a deeper understanding of the Gardens' multifaceted role in environmental stewardship and sustainable practices.

This presentation highlights successful collaborations with different stakeholders both within the Singapore Botanic Gardens and partnerships with external organisations as well as the opportunities and challenges of these cross collaborations. These interdisciplinary partnerships showcase how collaborative frameworks break down silos to reach out to a wider audience and offer more diversity to our programmes.

Educational Programs for Primary Schools in the Botanic Garden of the University of Maribor: Natural and Cultural Heritage & Ethnobotany

11th June 17:00-18:30

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Keywords: natural and cultural heritage, ethnobotany, archaeology, biodiversity, conservation

Botanical gardens serve as important centers for education and offer primary school students various programs that combine natural and cultural heritage with ethnobotany. These programs focus on experiential learning, direct observation of plants and exploration of their historical and contemporary significance. Through guided tours of the garden and archeological trail, interactive group work and workshops, students gain a deeper understanding of the fundamental relationship between humans and plants throughout history.

While the natural heritage programs focus on plant biodiversity, ecosystems and ecological conservation, the cultural heritage programs focus on traditional knowledge, customs and the historical use of plants. Guided experiences include: prehistoric plant diversity of the Štajerska region, agricultural techniques and plant varieties in production in different historical periods from the Stone Age to the Middle Ages.

A highlight of the program is a journey through time, where students explore the life of people in the past. The archaeological trail takes them to prehistoric burial mounds, which provide an insight into ancient burial rituals, the use of plants in daily life and early human settlements. The tour includes a visit to Hompoš Castle, the seat of the Faculty of Agriculture and Life Sciences, where students can experience more than a thousand years of history through the architecture of the building itself – from the Middle Ages to the present day. The programs end with practical workshops. The workshops include natural dyeing and the production of plant-based paper. To deepen their knowledge, students can visit the multimedia room where the permanent exhibition "How they lived..." can be seen. This exhibition provides a comprehensive picture of everyday historical life and shows how people used plants for medicine, clothing, food, tools and weapons, shelter and various rituals.

Through these engaging educational programs, students develop a deep appreciation for the enduring connections between people and plants. The botanical garden becomes a living classroom where history, science and culture are interwoven, encouraging young learners to think critically about the past and its relevance to sustainable living today.

Educational Activities Using Plants That Stimulate the Five Senses, Sign Language, and 3D Models

11th June 17:00-18:30

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Keywords: 3D, Photogrammetry, CT, Sign language, Universal design

The Tsukuba Botanic Garden' mission is to investigate and conserve plant diversity and to disseminate knowledge about plants and their value to humanity. To enable everyone to learn about and enjoy plants, regardless of any disability, we engage in educational activities particularly using plants that stimulate the five senses, including scent and touch, sign language, and 3D models. Such plants are familiar to everyone and the characteristics are easy to understand. We exclusively utilized these plants in the garden and outreach classes for special needs schools. As sign language of plants usually provides exact characteristics of plants (shapes and movements, etc.), learning this is useful for further understanding. We host an event every year in which people, regardless of disability, learn about both plants and related sign expressions, ultimately using the sign language together. We also obtained 3D data from living flowers and created 3D models and used these in classes on flower diversity for visually impaired people. A post-class questionnaire survey revealed that, regardless of whether people have a disability, 3D models are effective in terms of understanding the complex structures of flowers, and are useful for people who are visually impaired to visualize 3D structures. This presentation introduces those activities that allow all participants to learn about plants together through hands-on experiences.

NB_O_85

Urban Nature: A Portable Exhibition about Pavement Plants

11th June 17:00-18:30

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Keywords: urban nature, education, citizen science, sustainable development goals (SDG)

Lecture about urban flora and how we created an portable exhibition in a cargo bike for schools and nature/science markets. We also published a book and game about pavement plants with colourful drawings, so children can learn about these plants in a creative and playful way.

Pavement plants play an import role in biodiversity. You can find these plants everywhere around the city and the schoolyard. In this portable exhibition families and schools will learn to look after urban flora. This interactive exhibition is divided in different smaller elements:

- Visitors can go plant hunting with a so called 'pavement plant bingo' A card with pictures and names.
- During city walk they can do a guided 'botanical chalking' tour. By writing the name on the street with chalk.
- Children learn to recognise the plant by playing games. The play cards are designed, to easily recognise the plant by colour, shape and flowering season.
- Multiple interactive games show them how these plants spread and survive in the city.
- A story and real dried plants will explain their funny names. By knowing the name of the plant people will remember them better.
- Children create a nature amulet from clay. They can pick a plant and press them into the clay. When dried the shape of the plant will be imprinted in the clay.
- Through a microscope the visitors dive into the small world of these plants. The can look at insects or picket plants up close.

This portable exhibition is all about a free learning space. The children can decide which part of the exhibition they want to see or play.

Environmental Education and Mayan Ethnobiology: Experiences from the ´Roger Orellana´ Regional Botanical Garden in Mérida, Yucatén, Mexico.

11th June 17:00-18:30

I. OLALDE-ESTRADA[1], M. C. Jiménez BAÑUELOS[1], L. E. Carrillo SÁNCHEZ[1], J. Martínez CASTILLO[2], M. A. Canto AGUILAR[2], M. R. Rodríguez ROMÁN[2], A. Dorantes EUAN[2], W. M. Torres AVILEZ y F. Tec POOL.

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Keywords: bicultural diversity, Latin America, Medicinal Plants, melipona bees, birds, edible plants

Maya civilization emerged in the Yucatán Peninsula in Mexico and persists. They have an acute understanding of their natural environment as well as a distinctive worldview. The "Roger Orellana" Regional Botanical Garden (JBR-RO), located in Mérida, Yucatán, covers 2.6 hectares and features 21 biological collections. The garden has been operating for 41 years, and in 2020, became an active participant in the National Network of Ethnobiological Gardens (RENAJEB), through the project, "Strengthening the Ethnobiological Circuit of JBR-RO" funded by CONAHCYT (now SECIHTI). The latter project includes the collections of Solar Maya, Neglected Fruits, Bees of the Mayab, Medicinal Plants, Low Deciduous Forest, Humid Forest, Asparagales, and Coastal Dunes. Each collection has been updated with new signs, which include audio recordings in Maya and with Braille labels. As the project has moved forward, it has established collaborations with six communities in the state of Yucatan: Acanceh, Xoy, Xocén, Yaxché, Cepeda, and Dzilam de Bravo. In partnership with these communities, the leaders have instituted “knowledge exchange” meetings organized around ethnobiological topics, culinary encounters and gastronomic exhibitions. The goal of the project is to call attention to the importance of ethnobiologically significant species and to diffuse knowledge about them. The collaborations have resulted in several publications, such as brochures, cookbooks, medicinal plant directories, bird guides, a calendar, and two board games. Additionally, because many were co-authored with community members, they have served to increase intercultural understanding. Audiotapes, in both Spanish and Maya, are now available on community radio stations and on platforms such as Spotify. In sum, over the years these projects have produced a myriad of benefits to the community in the form of new experiences and original handcrafted products that underline the value of ethnobiologically significant species, traditional practices, and the crucial role of the people who possess this invaluable knowledge.

HW_O_135

Exploring the Connection between Plants and Human Health through Nature Education

11th June 17:00-18:30

M. LI

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Keywords: plants, human health, nature education, NBG

Nanjing Botanical Garden Mem. Sun Yat-sen (NBG), the first state botanic garden in China established in 1929, has been emphasizing on nature education since late 1990s. Plants & Human Health has been a significant theme, with various relevant programs carried out in multiple ways. For instance, visiting the Medicinal Plant Garden and Germplasm Resource Nursery of Medicinal Plants, guided by experienced herbalists, are often arranged. Exhibitions of 'Air Pollution-Resistant Indoor Plants' and 'Wild Vegetables' have been held. Popular science books like 'Plant-based Regimen at Home', 'Roaming the Herbal Garden' (introducing 139 medicinal plants), 'Let's Grow Herbal Medicine', and 'Wonderful World of Herbals' have been published. Lectures titled 'Interesting Stories of Chinese Herbal Medicine' and 'Flower and Human Health' have also been conducted.

One notable program launched in the summer of 2014 and lasted for 14 months is introduced in this paper. The program was organized by Yueya (Crescent Moon) Lake Sub-district in collaboration with NBG and Nanjing Zhongshan Primary School. Through the lecture themed 'Medicinal Plants Around Us', several visits to the Medicinal Plant Garden of NBG, and on-the-spot investigations of medicinal plants in the Purple Mountain National Park (PMNP), nearly 30 pupils learned to identify 60 local medicinal plants. They collected over 30 plant samples, pressed 20 voucher specimens, and wrote 18 short essays.

By participating in the program, the children gained knowledge about medicinal plants and understood the importance of PMNP, both as a "Green Lung" of Nanjing City and as a valuable treasury of medicinal plants. Realizing the necessity of protecting the natural environment of the PMNP effectively increased their awareness of biodiversity protection. The program also exemplified successful multi-party cooperation. I will present more details of this program during the congress.

HW_O_137

Arboretum's Approach to Arts Education for Healing and Recovery

11th June 17:00-18:30

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Keywords: Arboretum program, Art and culture education, Artist, Convergence education, Urban Forest Art Healing
limited to six words or phrases, separated by commas

This study is about the Urban Forest Art Therapy Program conducted at the Sejong National Arboretum from 2023 to 2024.

In this program, participants engage in artist-led creative activities within the natural settings of the arboretum fostering spontaneous and voluntary recovery and a sense of safety. This project was designed to create deep immersion and provide a healing experience through creative experiences based on art in the relationship between the participants, artists, and the arboretum.

A total of five programs were developed over the years 2023 and 2024.
In 2023, programs were developed with a focus on dance and media, while in 2024, the focus shifted to play, movement, and sensory experiences. Pre- and post-tests were conducted on participants regarding their program participation, and it was confirmed that satisfaction with the program increased by 0.65 points compared to the pre-test.

HW_O_176

A Simple Idea for an Effective Outdoor Educational Program among the Plants

11th June 17:00-18:30

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Keywords: Meeting, nature pedagogy, transversality, invitation

Investing in outdoor spaces for learning is a practice developed in several countries. And now, Paris, France is getting involved. Researchers have demonstrated the benefits on motivation, learning, and cooperation among students. The studies indeed highlight the importance of going outside to combat the increasing sedentariness among children, promote the well-being, develop all intelligences and consider the child as a whole, enhance memory and attention capacities, develop psychomotor skills and so on.

The Parc Floral de Paris is one of the four gardens of the Botanical Garden of Paris. It is clearly dedicated to environmental education, with multiple educational tools developed around the plant collections. Visitors and middle school students or adolescents can both learn and enjoy themselves there.

For several years, the Parc Floral has chosen to bring together young people in a very intensive environmental education program during the month of April. Each spring, the event “Paris Vert des enfants” is a two-weeks operation, in conjunction with the Paris Education Department and the Paris Climate Academy, which brings together more than 2,000 children and teenagers. “Paris Vert des enfants” is a French play on words between "Green City of Paris" and "bet on children, on the future“. The first week consists of school courses for middle school students, while the second week is more playful, aimed at recreational centers and teenagers on vacation

The recipe is very simple: gather all the partners, ask them to lead teaching sessions in the Botanical Garden, create a program, and invite the schools around... And that's it ! Every year, around 2,000 teenagers learn outdoors at the Parc Floral, during those two intense weeks. This idea is easy to replicate in all Botanical Gardens.

HW_O_180

Unlocking Youth Passion for Nature

11th June 17:00-18:30

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Keywords: youth, confidence, communication, belonging, agency, safe space

The Youth Programme at Kew Gardens in London was established in 2018 and now works with 450 individual young people aged 14-17 each year. There are five strands of activity encompassing science communication and practice, conservation and creativity. The programme targets recruitment at young people from communities who are under-represented at Kew and who have often had limited opportunities to engage with nature. Most have not visited Kew before and, as a result, the environment of the gardens can be unfamiliar and daunting, alongside being with a group of new people. The success of the Youth Programme, as evidenced by qualitative evaluation, is founded on the importance placed on creating a safe space and sense of belonging for the young people, foregrounding their wellbeing as essential to their learning. Furthermore, for young people coping with the dual crises of climate change and biodiversity loss, building their confidence and communication skills supports them to develop a sense of agency and ability to effect change, all of which are vital elements of wellbeing and resilience. This presentation will explore how the Kew Youth Programme structures young people's experience in a way that maximises the benefits they can gain from their time in the gardens and the extraordinary biodiversity they hold, enhancing both their learning and wellbeing.

BS_O_114

ABCDE - Interdisciplinary Workshops in Botanic Gardens

11th June 17:00-18:30

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Keywords: Place based learning, Interdisciplinary learning, Sustainability education, Participatory pedagogy, Experimental learning, Transformative learning

This presentation will explore a series of innovative interdisciplinary workshops for in-service teachers that were conducted in botanic gardens in Iceland, Lithuania, and Ireland. These workshops were designed to foster awareness and artistic action on sustainability, focusing on the critical themes of water, biodiversity, and soil. By bringing together the expertise of both artists and scientists, the workshops offered a unique platform for participants to engage with environmental challenges through creative and scientific lenses. Participants were encouraged to observe, experiment, and reflect on the intricate relationships between humans and ecosystems, deepening their understanding of sustainability while fostering a sense of stewardship for the natural world. The botanic gardens served as an educational site for teachers' continued education by providing hands-on opportunities to explore the themes and sustainable practices, which they then integrated into their teaching.

The workshops highlighted the power of collaboration between disciplines to inspire new perspectives and solutions. Through this collaborative project participants were empowered to envision and implement sustainable practices in their own schools. The presentation will include insights into the methodologies used, participant feedback, and the broader impact of the workshops on sustainability discourse in the participating schools. The presentation will give actionable ideas for integrating interdisciplinary approaches into educational or environmental initiatives, through images from the workshops.

BS_O_116

Becoming a Biologist: The Impact of a Quasi-Apprenticeship Program on Chinese Secondary School Students' Career Intention

11th June 17:00-18:30

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Keywords: apprenticeship, career intention, secondary school student, theory of planned behavior, botanical garden

The decreasing number of young students pursuing science careers has become a rising concern worldwide, particularly in China. Educational programs with empirical evidence of promoting young students' pursuit of science careers are still lacking. While participation in research apprenticeship programs can encourage young people to pursue science careers, teaching science using an apprenticeship approach in informal settings, such as botanic gardens, is still a challenging task. Here, drawing on the existing literature, we designed and implemented a 3-day quasi-apprenticeship program in a research botanical garden of China. We used a pre-post test design, with hypotheses based on the Theory of Planned Behavior and provided both quantitative and qualitative data to evaluate the efficacy of the program on 319 seventh- and eighth-grade Chinese students from 15 public schools. The quantitative findings by using generalized estimating equations indicated that students' attitudes, subjective norms, science self-efficacy, and career intention were significantly enhanced after the program; the structural equation modeling result showed that the enhancement of career intention could be explained by increases in subjective norms and science self-efficacy. The qualitative findings also supported the notion that a high proportion of students mentioned gains in increased science self-efficacy from attending the program. We suggest a short-term program, engaging students in group work of authentic science practices with mentors in an authentic context (i.e. a botanical garden), might be a cost-effective strategy for supporting Chinese young students' pursuit of science careers. This study also provides valuable information, through both pedagogical and theoretical structure elements, for educators and researchers who design, deliver, and evaluate educational programs to promote secondary school students' pursuit of science careers.

BS_O_132

Addressing Global and Complex Issues through a Playful Interactive Workshop That Encourages Positive Imagination of the Future: A Case Study at Meise Botanic Garden

11th June 17:00-18:30

E. BOTTE[1,2*], V. CHARAVEL[1,2], L. BLOMMAERT[1], M. DESPIEGELAERE[1], J. KLEBER[1], K. ES[1], J. DEGREEF[1,2] and S. DESSEIN[1]

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Keywords: Botanist explorers, biodiversity loss, time travel, gender bias, role-play, decolonization

The theme of botanist explorers is central to Northern European botanic gardens, particularly those with greenhouses, as many of their collections are rooted in historical explorations. This prompted us to design an innovative workshop around this topic to address complex issues like biodiversity loss, gender representation in science, decolonization, and resulting in a shift in the way we view plants.

Last year Meise Botanic Garden incorporated these challenges into a workshop aimed to enhance teenagers' understanding of plant adaptations across various biomes. Using time-travel and role-play techniques, the workshop provides the participants with an interactive and playful experience.

After examining contemporary challenges related to biodiversity, students are transported back to the 16th century, adopting the role of a botanist explorer. The originality of the approach lies in their perspectives on plants, shifting from a utilitarian to a conservation point of view. During a role-play session, led by an extraordinary woman explorer, students share their findings while raising awareness among their peers about the wonders of the plant world.

The workshop ends with a prospective visualization inviting students to dream of a positive future and to suggest actions to achieve it. This exercise empowers the youth by fostering their ability to imagine positive change.

This workshop is a case study for addressing multiple issues within the context of botanic garden education.

We will present the workshop, the way it evolved based on participant feedback and assess its outcomes after one year of implementation, highlighting both the benefits and the challenges encountered.

BS_O_140

Development of an Educational Plant Kit Using Goodyera spp. In Vitro Propagation Techniques

11th June 17:00-18:30

C.H. AHN[1*], J.I. NAM[1], and W.Y. CHUNG[2]

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Keywords: limited to six words or phrases, separated by commas

Arboreta, also known as botanical gardens, serve as both conservation sites and educational spaces, providing opportunities for hands-on learning experiences. This study focuses on developing an educational plant kit using in vitro propagation techniques of Goodyera spp., a native Korean orchid. Previous studies have highlighted the educational potential of plant kits by emphasizing student engagement, scientific inquiry, and plant care. In particular, research on plant kit preferences suggests that propagation-based kits (e.g., leaf cutting kits) and observational kits (e.g., root growth kits) are highly valued for their educational impact. In this study, Goodyera spp. was propagated through in vitro culture and acclimatized for educational use. The developed kit includes tissue-cultured seedlings, a growth guide, and an observation journal, allowing students to explore plant growth and propagation firsthand. Importantly, the kit is designed for family use, enabling parents and children to engage in self-directed, at-home learning experiences without the need for formal instruction. The key advantages of this kit align with previous findings: (1) it provides hands-on propagation experience through transplantation, (2) it enables continuous observation of plant development, and (3) it enhances students' understanding of native plant conservation. Not only does the kit serve as an interactive educational tool, but it also promotes awareness of biodiversity and sustainable plant practices. By integrating scientific research with plant education, this project contributes to expanding the use of native plants in educational programs. Future studies may explore additional native species and optimize propagation techniques to further enhance the educational value of plant kits.

Effects of Forest Therapy Programs Using Botanical Gardens on Physical and Psychological Health of the Elderly

11th June 13:00-14:30

Plant management, Hantaek Botanical Garden

Jingun KIM, Hantaek Botanical Garden, Yongin, Korea
Junghwa KANG, Hantaek Botanical Garden, Yongin, Korea

As an aging society accelerates, the importance of health care for the elderly is increasing. One of the diseases that threaten healthy old age is sarcopenia. Sarcopenia is a disease that means an involuntary loss of skeletal muscle mass and strength, causing difficulties in physical activity, and is also associated with acute and chronic diseases, falls, fractures, and mortality. In addition, the elderly suffer from mental problems such as depression and anxiety due to social isolation and economic difficulties.

Forest therapy is known to be effective as a health care intervention for a variety of subjects. Forest therapy is an activity that enhances the human body's immunity and restores physical and mental health by utilizing various environmental factors existing in the forest. Recently, botanical gardens are emerging as effective healthcare spaces for improving physical and mental health. It would be more effective if the botanical garden ran a forest therapy program.

As for the workshop's contents, through the presentation, we will explain the value of health and well-being for the botanical garden, the concept of forest healing, and the importance of health management for the elderly. In addition, we would like to introduce examples of the operation of the forest healing program to prevent sarcopenia in older people in the botanical garden. After that, we would like to experience five sensory stimulation activities and muscle exercises among the contents of the program that was actually operated.

WS_28

Behaviour Change in Conservation Initiatives

11th June 13:00-14:30

BGCI

Ane ZABALETA, Education and Training Manager, BGCI

Behaviour change is at the heart of solving the most pressing environmental challenges, from climate change to biodiversity loss. This workshop will introduce participants to the Behaviour Change framework developed by Rare's Centre for Behaviour & the Environment. We will explore how behavioural insights and design thinking can be leveraged to create impactful conservation initiatives. The session will provide an overview of the framework, highlighting its practical applications in conservation projects worldwide.

Participants will then engage with a real-world case study from the Darwin Project in Malawi's Mulanje Mountain, where behaviour change interventions have been successfully implemented to protect the Natural Reserve. The project integrates community engagement strategies and sustainable livelihood opportunities to encourage conservation-friendly behaviours while addressing socio-economic challenges.

This interactive workshop will combine presentation, discussion, and hands-on activities, allowing participants to explore how behaviour change principles can be applied in their own contexts. Attendees will leave with a deeper understanding of behaviour change methodologies and practical tools to incorporate these strategies into their conservation education and outreach efforts.

WS_10

The Future of Arboretum Specialist Curriculum: A Curriculum Improvement Workshop With Field Experts

11th June 13:00-14:30

Shingu Botanic Garden, Chollipo Arboretum, Baekdudaegan National Arboretum

Jeongill JEON, Shingu Botanic Garden, Gyeonggi-do, Korea
Heesun SHIN, Shingu Botanic Garden, Gyeonggi-do, Korea
Hyekyoung PARK, Shingu Botanic Garden, Gyeonggi-do, Korea
Hyunmi LEE, Chollipo Arboretum, Chungcheongnam-do, Korea
Hyeonok LIM, Chollipo Arboretum, Chungcheongnam-do, Korea
Inae SONG, Chollipo Arboretum, Chungcheongnam-do, Korea
Bonkwang KU, Baekdudaegan National Arboretum, Gyeongsangbuk-do, Korea
Hyeonjeong IM, Baekdudaegan National Arboretum, Gyeongsangbuk-do, Korea
Sungho IM, Baekdudaegan National Arboretum, Gyeongsangbuk-do, Korea

As the importance of arboreta and botanic gardens in conserving forest plant genetic resources, including rare and endemic species, is becoming increasingly recognized. In response, Chollipo Arboretum, Shingu Botanic Garden, and the Baekdudaegan National Arboretum are training professionals equipped with specialized knowledge and practical skills for the creation, efficient management, and operation of arboreta. This workshop will analyze the current status of the arboretum specialist training program in Korea and explore future directions by referencing international case studies.

WS_5

Utilising Reverse the Red to Engage with and Empower Communities

11th June 15:00-16:30

Reverse the Red (coalition)

Megan JOYCE, Reverse the Red, New York, USA

We need hope, a clear vision, and strong partnerships driving a desire to make strategic, successful species conservation a global movement. Working at global, national, and local/species levels, Reverse the Red's network of partners spans sectors with botanic gardens, zoos, aquariums, research and academic institutions, governments, organisations, and more all providing critical support to achieving biodiversity goals. Botanic gardens have a crucial role to play in reversing species decline through building capacity and bringing species management expertise and public engagement to species conservation. In the education space, gardens create connections to nature, foster empathy for species, and motivate pro-environmental behaviours.

Collectively, we are lacking in the hope and belief that we can recover threatened species at scale and pace. Utilising Reverse the Red to engage and empower communities – internal to a garden and with external visitors or members – can help gardens inspire action, spread optimism, and make a tangible difference in the conservation of our planet's precious biodiversity.

In this session, we will explore foundations of the Reverse the Red movement and its connections to various available conservation tools, showcase several success stories highlighting how BGCI Members have already taken the initiative, and collect feedback and facilitate brainstorming and discussion around current challenges and opportunities for gardens in addressing biodiversity loss and motiving an interested public. The ideation from this session will aid in the creation a guide to engaging with Reverse the Red, contributing to species conservation, and optimising the unique skills and reach of the gardens community.

WS_39

Investigating Biomimicry as a Tool for Plant-Based Education on Junior Global Goals

11th June 15:00-16:30

Hortus botanicus Leiden

Thal JONAS, Hortus botanicus Leiden, Leiden, The Netherlands
Maxime BOERSMA, Hortus botanicus Leiden, Leiden, The Netherlands
Nuala TEERINK, Hortus botanicus Leiden, Leiden, The Netherlands

Specific plants will have dealt with problems related to sustainability in nature. Their solutions can provide a basis for solving our own problems on that matter. These problems have been drawn up in 17 Sustainable Development Goals (SDG's) in order to protect both our planet and life on it.
The 17 SDG's are condensed into 7 Junior Global Goals (JGG's) for both practical and educational reasons.

In the workshop we explore each JGG using biomimicry's Life's Principles.

By choosing different plants and examining these for their explementary function in biomimicry's Life's Principles, we can address a problem in sustainability and look for solutions.

The 7 JGG's:
1 - Healthy and Happy (SDG's 1,2,3,4,5,10,16)
2 - Better Use (SDG's 9,11)
3 - Clean Energy (SDG's 7,13)
4 - Clean Nature (SDG's 13,14,15)
5 - Healthy Source (SDG 6)
6 - Everything Circular (SDG's 12, 17)
7 - Smart with Money (SDG's 1, 8, 10)

The 6 overarching Biomimicry Life's Principles: / **Adapting to change*
A - Evolve to Survive
B - Adapt to Changing Conditions
C - Be locally attuned and Responsive / **Grow and develop*
D - Use Life-friendly chemistry
E - Be Resource Efficient
F - Integrate Development with Growth

WS_29

Awaken Your Perception of the Energy of Trees

11th June 15:00-16:30

Kadoorie Farm and Botanic Garden

Bian TAN, Singapore (Coordinator)
Josephine WOO, Kadoorie Farm and Botanic Garden, Lam Tsuen, Hong Kong, China
Claire ELOUARD, France

The abundant energy from trees in botanic gardens is an under-recognized and under-utilized resource for human wellbeing and mental health. We have always known that being with trees calms the mind and emotions, and provides solace from our stressful daily lives. We feel better when we are with trees, often in an unconscious way, and are hard pressed to verbalize or explain it clearly. However, as energy teacher Dr. Claire Elouard explains, "The benefits are greater if one is aware of this energy and perceives it directly."

This workshop aims to provide a safe space for participants to become consciously aware of tree energy, thereby maximizing its benefits to the body, mind, and emotions. Through exercises and activities for grounding and increasing bodily sensitivity to tree energy, Claire will help participants to awaken their perception of Nature's energy, and begin to explore in a deeper way their personal inner landscapes.

Participants are encouraged to come with an open mind and heart, with as little expectations as possible. The workshop will be conducted outdoors. Participants will be guided through several exercises that will culminate in visiting various trees to practice intuition and energy perception.

WS_8

Empowering Voices: Gender Equality and Social Inclusion in Botanic Garden Education Projects

11th June 17:00-18:30

BGCI

Annelies ANDRINGA-DAVIS, Botanic Gardens Conservation International, UK – coordinator
Helen MILLER, Botanic Gardens Conservation International, UK

In today's world, a Gender Equality and Social Inclusion (GESI) approach should be a core component of any project. UN Sustainable Development Goals 5: Gender Equality and 10: Reduced Inequalities refer specifically to GESI. GESI principles are also a key component for many funders and grant making bodies (e.g. Darwin Initiative). But how do you move beyond simply encouraging an equal balance of male and female participants, to a more inclusive environment where all relevant voices are heard and empowered? This workshop will explore gender roles and social norms, as well as vulnerable or unheard groups within your target audience.

Through interactive work in small groups, we will look at the impact that a GESI approach can have for both your project and those you engage, we will identify barriers that prevent marginalized voices from being heard and explore ways to overcome them. We will examine norms, attitudes and practices underlying gender inequalities and discuss strategies on how to change them.

Participants will gain insights in how to ensure equal and inclusive participation of vulnerable groups. Using a GESI checklist, participants will be guided to look deeper into how to reduce and remove gender inequality and social exclusion from project planning to implementation. By the end of the workshop, participants will have a range of tools and strategies to apply a GESI lens to their activities and project, resulting in stronger, more inclusive projects that truly make a difference and bring transformative change.

WS_41

Mapping the Visitor Experience - A Tool to Improve Your Garden

11th June 17:00-18:30

Lennox Insites

Chuck LENNOX, Principal/Consultant, Lennox Insites

The Visitor Experience encompasses more than just the visit. From the time of decision making on a website to the arrival, further on-site and then the departure, many elements impact what our visitors experience.

Taking a modern technique from user experience design (technology), this workshop will introduce participants to visitor experience mapping - what it is, why engaging in visitor experience mapping is valuable to garden settings, its applications, and how results can be used to drive visitor outcomes and accomplish a site mission.

Using the conference site as a "visitor experience" we will document, evaluate and map the setting in small groups as if we are in a garden venue paying attention to the same elements visitors to our sites would such as the website, wayfinding, customer service, engagement and departure. Reconvening as a larger group, we will share our findings with each other with suggestions for improvement.

We will then make a connection to our home gardens. Participants will be strongly encouraged to choose an issue or specific location at their garden to practice these new gained skills. Visitor experience mapping can be used at an entire site or for a single exhibit/event and has the potential to bring increased value to ensuring a well thought out and coordinated experience from entry to exit and beyond. Participants will be asked to make a commitment to produce a visitor experience map following the workshop focused on a particular issue at home. An e-toolkit for use at home will be provided to support this task.

WC_19

Exploring Climate Change with Children

11th June 15:00-16:30

Donga Science & Korea National Arboretum (KNA)

Sewon CHEON, Donga Science, Seoul, Korea

Donghak KIM, Korea National Arboretum, Seoul, Korea

The World Café session, titled "Exploring Climate Change with Children", is an interactive workshop designed to help young participants and their families understand the causes and consequences of climate change. This session will incorporate hands-on activities, discussions, and creative projects to foster scientific curiosity and climate awareness.

One of the key elements of this session is the integration of real-world citizen science experiences, including the “Cherry Blossom Ending Project” led by the Earth Love Explorers (지구사랑탐사대). This initiative involved children and families in observing the blooming patterns of cherry blossoms to track climate change indicators. Participants contributed valuable data to environmental research. By sharing insights from this project, the session will demonstrate how citizen science can empower individuals, especially young learners, to take an active role in climate action.

The workshop will begin with thematic discussions, where participants will explore climate change-related topics using articles from Science Dong-A and AI-based research tools. They will then engage in a board game creation activity, designing an interactive game that highlights the positive and negative impacts of daily behaviors on the environment. Finally, participants will present their personal climate action commitments, inspired by their learnings from the session.

Through this engaging, family-friendly approach, the World Café session aims to inspire young minds, promote environmental responsibility, and encourage lifelong engagement in citizen science initiatives.

PS_9

Interdisciplinary Approach to Botanic Garden Education: Integrating Science, Art, and the Humanities

11th June 13:00-14:30

Korea National Arboretum

Presenter 1. [Science] Amy PADOLF, Director of Education, Fairchild Tropical Botanic Garden

Presenter 2. [Art] Jeeyeon KOO, Chairman, Korean Society of Botanical Illustators

Presenter 3. [Museum] Mijung YOON, Deputy Director of Garden and Education Research Division, Korea National Arboretum

Panel Discussion with experts from botanic gardens worldwide

A discussion on deriving new changes and developmental directions for the future through integrative and interdisciplinary botanical garden education that goes beyond traditional frameworks, in response to climate crisis and biodiversity loss.

- Opening (5 min.) Host: TBC

- Presentation 1 [Science] Amy PADOLF, Director of Education, Fairchild Tropical Botanic Garden, Coral Gables, Florida, USA

Cultivating Scientific Literacy Through Botanic Garden Education

In an era of climate crisis and biodiversity loss, botanic gardens serve as vital living laboratories for science education. This presentation explores innovative approaches to science education at Fairchild Tropical Botanic Garden, highlighting how authentic research experiences in botanical settings create meaningful connections between visitors and the natural world. Drawing from successful programs that engage diverse audiences—from school children to adult learners—I will demonstrate how science-based education in botanic gardens fosters environmental stewardship, scientific literacy, and a deeper understanding of plant conservation challenges. By sharing evidence-based practices and measurable outcomes, this talk will provide a framework for how botanical institutions can leverage their unique resources to advance scientific education that addresses contemporary environmental challenges while inspiring the next generation of plant scientists and conservationists.

- Presentation 2 [Art] Jiyeon KOO, Chairman, Korea Botanical Art Society

In this presentation, I explore the interdisciplinary approach to botanic garden education by integrating science, art, and the humanities, focusing on the vital role of botanical

DAY 3

illustration in engaging the public and fostering environmental awareness. As society advances technologically, spaces like arboretums and botanical gardens become increasingly important for emotional restoration and connecting people with nature. I will highlight global efforts—ranging from Korea's National Arboretum to leading institutions in Europe, North America, Australia, and Africa—that actively promote botanical illustration as a means of scientific communication and cultural enrichment. Although it started as a traditional art form, botanical illustration remains a powerful tool for documenting plant diversity accurately, supporting conservation, and educating audiences. I will share examples from institutions such as Kew Gardens, the New York Botanical Garden, and the Grootbos Florilegium in South Africa, demonstrating how art and science can collaborate to deepen understanding and appreciation of plants. Integrating art with scientific research enhances knowledge and emotional connection, which are essential for cultivating environmental stewardship. Ultimately, I advocate for continued interdisciplinary collaboration, emphasizing how botanical illustration and botanic gardens can serve as dynamic spaces that bridge scientific inquiry, cultural values, and public education. By leveraging these synergies, I see botanical gardens playing a transformative role in promoting ecological consciousness and emotional well-being in today's rapidly changing world.

- Presentation 3 [Museum] Mijung YOON, Deputy Director of Garden and Education Research Division, Korea National Arboretum

Each presentation will be 10 minutes long, followed by a 5-minute Q&A.

- Preparation for Panel Discussion (5 min.)

- Panel Discussion with experts from botanic gardens worldwide (30 min.)

Chair : Patrick GRIFFITH, Executive Director, Montgomery Botanical Center

1) Till HAGELE, Head of Greenhouse Dept., Botanical Garden Munich-Nymphenburg, Germany

2) Marga ANGGRIANTO, Managing Director, Bogor Botanical Garden, Indonesia

3) Siti Syuhada SAPNO, Programme Coordinator, Forest Learning Centre, Malaysia

4) Andriy PROKOPIV, Director, Botanical Garden of Lviv University

- Closing (5 min.)

PS_9_1

Cultivating Scientific Literacy Through Botanic Garden Education

11th June 13:00-14:30

Amy PADOLF

Fairchild Tropical Botanic Garden

In an era of climate crisis and biodiversity loss, botanic gardens serve as vital living laboratories for science education. This presentation explores innovative approaches to science education at Fairchild Tropical Botanic Garden, highlighting how authentic research experiences in botanical settings create meaningful connections between visitors and the natural world. Drawing from successful programs that engage diverse audiences—from school children to adult learners—I will demonstrate how science-based education in botanic gardens fosters environmental stewardship, scientific literacy, and a deeper understanding of plant conservation challenges. By sharing evidence-based practices and measurable outcomes, this talk will provide a framework for how botanical institutions can leverage their unique resources to advance scientific education that addresses contemporary environmental challenges while inspiring the next generation of plant scientists and conservationists.

Interdisciplinary approach to Botanic Garden Education; Intergrating Science, Art and the Humanities

11th June 13:00-14:30

Jiyeon KOO

Korea Botanical Art Society

In this presentation, I explore the interdisciplinary approach to botanic garden education by integrating science, art, and the humanities, focusing on the vital role of botanical illustration in engaging the public and fostering environmental awareness. As society advances technologically, spaces like arboretums and botanical gardens become increasingly important for emotional restoration and connecting people with nature. I will highlight global efforts—ranging from Korea's National Arboretum to leading institutions in Europe, North America, Australia, and Africa—that actively promote botanical illustration as a means of scientific communication and cultural enrichment. Although it started as a traditional art form, botanical illustration remains a powerful tool for documenting plant diversity accurately, supporting conservation, and educating audiences. I will share examples from institutions such as Kew Gardens, the New York Botanical Garden, and the Grootbos Florilegium in South Africa, demonstrating how art and science can collaborate to deepen understanding and appreciation of plants. Integrating art with scientific research enhances knowledge and emotional connection, which are essential for cultivating environmental stewardship. Ultimately, I advocate for continued interdisciplinary collaboration, emphasizing how botanical illustration and botanic gardens can serve as dynamic spaces that bridge scientific inquiry, cultural values, and public education. By leveraging these synergies, I see botanical gardens playing a transformative role in promoting ecological consciousness and emotional well-being in today's rapidly changing world.

PS_9_3

When the Arboretum Meets the Museum in Nature : Bridging Nature, Culture, and Education

11th June 13:00-14:30

Mijeong YOON

Korea National Arboretum

The Korea National Forest Museum, operated by the Korea National Arboretum, delivers the values of forests and biodiversity through a range of exhibitions and educational programs.
By linking exhibitions with learning activities, the forest museum enhances visitors' understanding of forest culture and raises awareness of biodiversity conservation. Furthermore, the museum operates a traveling exhibition program in collaboration with local forest museums across the country, fostering regional engagement and expanding the reach of its content. This presentation introduces how the integration of exhibition and education contributes to public awareness and promotes sustainable forest culture.

PS_35

Addressing Climate Anxiety through Botanical Garden Educational Programs: Analysis and Effectiveness

11th June 13:00-14:30

Korea National Arboretum, Korea University

1. Eunjin CHANG, Professor, Department of Counseling Psychology, Korea Baptist Theological University, Former President, Korean Psychological Association

2. Hyeyoung JIN, Director of Research planning and General affairs division, Korea National Arboretum

3. Mike MAUNDER, Executive Chair, Kew REACH

4. *Keehong CHOI, Professor, Department of Psychology, Korea University, Vice president, Korean Psychological Association

This symposium aims to review the current state of climate anxiety experienced by the Korean public in the era of climate change and discuss psycho-social solutions to cope with climate anxiety. Following the presentations, it will introduce educational and therapeutic gardening programs conducted at botanic garden in the UK for mental health, as well as nature-based healing programs implemented at the Korea National Arboretum, sharing their effectiveness.

Researchers and practitioners from the Korea Institute for Health and Social Affairs, the Korean Psychological Association, Korea University KU Mind Health Research Institute, the UK's Eden Project, and the Korea National Arboretum will share empirical data and extensive experience. Finally, the role of botanical gardens and arboreta in nature-based healing activities for mental health in the era of climate change will be discussed.

PS_35_1

Brief Anxiety Scale for Climate Change (BACC) for Adolescents and Adults: Scale Development and Initial Validation

11th June 13:00-14:30

Keehong CHOI

Korea University

Climate disrupts lifestyles globally and poses significant challenges to mental health. Although several scales assess climate anxiety, many combine symptoms with coping responses or fail to adequately capture the core symptomatology of anxiety. Hence, this study aimed to develop and validate the Brief Anxiety Scale for Climate Change (BACC), a self-report measure designed to assess symptoms of climate anxiety. A preliminary pool of 21 items was generated based on the diagnostic criteria for generalized anxiety disorder and climate-related stress. Study 1 (n = 300) explored the factor structure via an exploratory factor analysis (EFA) while Study 2 (n = 400) independently validated the structure via a confirmatory factor analysis (CFA). Analyses of the internal consistency, content validity, and discriminant validity helped refine the scale to a final 13-item version with two factors: cognitive and functional impairment. CFA results indicated that all the fit indices met the recommended thresholds, and the final version demonstrated excellent internal consistency (Cronbach's α = 0.92). Additionally, latent correlations revealed that climate anxiety was moderately associated with generalized anxiety and depression. These findings suggest that the BACC is a promising tool for assessing climate anxiety and identifying individuals who may require psychological support.

PS_35_2

Training the Crew of Spaceship Earth: Approaches to Climate Change Education at Eden Project

11th June 13:00-14:30

Robbie KIRKMAN

Eden Project

Young people today find themselves growing up into a complex global picture. Previous generations have behaved as irresponsible passengers aboard 'Spaceship Earth' and we see the impacts of those behaviours manifest within the unfolding climate and biodiversity crisis.

What we need now is an informed and responsible crew and an 'operating manual' at a time when we're all asking - 'How do we fly this thing?' Nowhere are these concerns more apparent than in our young people: in the absence of joined-up, strong, climate-friendly leadership and action we see anxiety fill the void. Added to this, school students are increasingly asking themselves, 'How does what I'm learning today help me build a tomorrow that I want to be part of?'

Eden Project is a symbol for transformation and hope – we demonstrate what can be achieved when we work together, creatively with the grain of nature. Through our education programmes we provide an antidote to anxiety, instilling a sense of awe and wonder for the natural world, demonstrating, inspiring and empowering young people to stand up for nature and each other.

Drawn from our experience of running education programmes at Eden Project and our understanding of the evidence-base on Nature Connection and Learning for Environment and Regenerative Sustainability, we share the methodological approaches that underpin our teaching and learning work with children, young people and schools. These methodologies are contextualised within learning programmes we currently deliver on our site at Eden Project Cornwall.

PS_24

Current Status of Arboretum and Botanical Garden Education for Central Asia Biodiversity Conservation

11th June 15:00-16:30

Korea National Arboretum

Komil TOJIBAEV, Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan, Tashkent, Republic of Uzbekistan

Gulnara SITPAYEVA, Republican State Enterprise on the Right of Economic Management "Institute of Botany and Phytointroduction" of the Committee of forestry and wildlife of the Ministry of Ecology and natural resources of the Republic of Kazakhstan, Almaty, Republic of Kazakhstan

Ivan KHEGAI, Scientific Research Institute Botanical Garden named after E. Gareev of the National Academy of Sciences of the Kyrgyz Republic, Bishkek, Kyrgyz Republic

Dovutsho NAVRUZSHOEV, Pamir Biological Institute named after Kh. Yu. Yusufbekov of National Academy of Sciences of the Republic of Tajikistan, Khorog, Republic of Tajikistan

Kyung CHOI, Korea National Arboretum, Pocheon, Republic of Korea

Hyukjin KIM, Korea National Arboretum, Pocheon, Republic of Korea

Heeyoung GIL, Korea National Arboretum, Pocheon, Republic of Korea

Central Asia is home to unique and diverse plant species, many of which are endemic and play a crucial role in maintaining ecological balance. However, rapid environmental changes, land degradation, and climate change pose significant threats to the region's biodiversity. Arboretums and botanical gardens are essential institutions for plant conservation, research, and education, helping to mitigate these challenges by preserving plant genetic resources and raising public awareness.

Despite their importance, educational programs in arboretums and botanical gardens across Central Asia remain underdeveloped and lack a unified approach. Strengthening education and training in these institutions is critical to fostering a deeper understanding of plant conservation among professionals, students, and the public. Through structured learning programs, these institutions can serve as hubs for environmental education, community engagement, and research collaborations.

This workshop aims to bring together experts from Central Asian forestry and botanical institutions to assess the current status of arboretum and botanical garden education, share best practices, and develop strategies to enhance conservation-related educational programs. By facilitating knowledge exchange and fostering regional cooperation, this initiative seeks to empower arboretums and botanical gardens to play a more effective role in biodiversity conservation.

PS_24_1

Yashil Makon (Green Space) – a new nationwide program in Uzbekistan and the role of the Tashkent Botanical Garden in strengthening its scientific platform

11th June 15:00-16:30

TOJIBAEV Sh. Komiljon[1]
Coauthor : ABDINAZAROV Sodikjon[2]

[1]Director General of the Institute of Botany, Uzbekistan Academy of Sciences

[2]Director of the Tashkent Botanical Garden, Uzbekistan Academy of Sciences

Uzbekistan is a Central Asian country located on the largest of the six continents of the planet, framed by the Syr Darya and Amu Darya Rivers. More than 80% of the territory belongs to arid desert areas. At the same time, like many countries in arid regions, the country belongs to the category of non-forest countries. Forests cover only 3.68 million hectares (8.6%) of Uzbekistan. Junipers form the basis of forests in mountainous areas, and saxaul forests in desert areas.

In 2021, Uzbekistan announced an ambitious project, Yashil Makon (Green Space). Within the framework of the project, Uzbekistan will plant 200 million seedlings of trees and shrubs annually (1 billion trees in total), thereby increasing green areas in cities by 30%. Massive afforestation activities were carried out at the Aral Sea dried bottom, aimed at combating dust storms and stabilizing the socio-ecological situation in the region.

The Tashkent Botanical Garden (TBG) of the Uzbekistan Academy of Sciences is the scientific platform for this megaproject. An integral part of the activities of the Botanical Garden within the framework of this project is training the local people, and preparing recommendations for the selection of species of trees and shrubs according to the different ecoregions of Uzbekistan. At the same time, special attention is paid to school-age children. The Tashkent Botanical Garden has signed an agreement with the Ministry of Public Education, according to which hundreds of schoolchildren visit the botanical garden every year, where they are introduced to the first skills of planting trees and caring for seedlings. In 2024, the TBG was visited by students from more than 50 preschools, more than 100 high schools and about 30 colleges.

Scientific and Educational Contributions of the Pamir Botanical Garden to Plant Biodiversity Conservation

11th June 15:00-16:30

Dovutsho NAVRUZSHOEV

Pamir Biological Institute. Kh. Yusufbekova National academy of sciences, Khorog, Tajikistan

For 85 years, introduction work has been underway to grow plants from different regions of the world and Central Asia in the conditions of the Pamir Botanical Garden.
Not far from the center of the Gorno-Badakhshan Autonomous Region (GBAO) - Khorog at an altitude of 2320 m above sea level, in the confluence of the Gunt and Shahdara rivers is the green treasury of the Pamir - the Pamir Botanical Garden (PBG) named after A.V. Gursky.
The Garden was founded in 1940. Administratively, the Garden obeys the Pamir Biological Institute named after academician Kh. Yusufbekov, being his department, is thus including the structure of the National Academy of Sciences of Tajikistan.
The Garden is of considerable interest to other gardens as a source of high mountain flora seeds. Every year, the garden receives about 2000 seeds of seeds from various floral regions of the world. Sedum exchange is carried out with 170 addressees of the former republics of the USSR and about 200 addressees from 40 distant foreign countries. Currently, the territory of the Garden is 624 hectares, of which 100 hectares are the irrigated part. The PBG was created as a natural laboratory for studying the life of plants in the conditions of the highlands. The Garden is a specialized research, scientific and educational institution engaged in the accumulation of the gene pool of various local and foreign plants, a thorough study of their environmental and biological properties, the introduction of the most valuable of them in green construction, rural and forestry, food industry and medicine. The plant fund of the Garden is about 4,000 species and varieties. More than 30,000 species, forms and varieties of plants have been tested in nurseries and botanical collections of the Garden. In the Garden, work was carried out on the testing of certain types from the global potato collection. Thanks to the conducted scientific work of the Garden staff, the assortment of potatoes and vegetable crops on Pamir increased significantly. In order to study rare and disappearing plants, a nursery was created in the PBG. Currently, about 80 species of rare and endangered plants of GBAO are collected in this nursery.
The Pamir Mountains are included in the UNESCO World Heritage List. Unique flora and fauna, which occur in the Pamir Botanical Garden are listed in the Red Book and protected. The Pamir Museum of Nature is located in the garden, which stores the history of the Garden creation. The Pamir Botanical Garden attracts hundreds of tourists come to the Pamir annually from different parts of the world who visit the botanical garden as one of the main remarkableness of Badakhshan. Schoolchildren and students of Tajikistan universities come on summer educational practices based on the Pamir Botanical Garden. The Pamir Botanical Garden is truly unique, and it would be great to preserve and increase its collection for future generations.

Educational activities in Research Institute

11th June 15:00-16:30

TURBATOVA Aisha Omurbekovna

Botanical Garden named after E.Z. Gareev

Brief History of the Botanical Garden

The Botanical Garden of the Kyrgyz Republic, established on March 13, 1938, celebrates 87 years of scientific and botanical significance. Located on the southern outskirts of the city of Frunze, now Bishkek, in the floodplain of the Ala-Archa River at an altitude of 780 meters above sea level, the garden began with plantings of 40 species of trees and shrubs in 1940-41. These initial plantings included local and introduced species, which were organized according to botanical and geographical classification, representing regions such as Kyrgyzstan, Central Asia, Europe, Crimea, the Caucasus, Siberia, the Far East, and North America.

By 1952, the garden expanded its scope to include floriculture, first with a limited selection, followed by ornamental herbaceous plants and roses in the open ground. A greenhouse was constructed to house tropical and subtropical species. In 1962, a tree and shrub research laboratory was established based on the garden's dendrological collection. The garden's scientific reach grew, and by 1968, the arboretum was granted reserve status due to its exceptional collection of plants, which included perennial species from around the world and the local flora.

In 1962, the Botanical Garden was also allocated a new plot of land in the floodplain of the Alamedin River, situated at an altitude of 920 meters above sea level in the southeastern part of Frunze. Today, this area houses an administrative building, arboretum complexes, and two laboratories with nurseries at I. Akhunbaeva Street, Bishkek.

With the expanding research efforts, the Botanical Garden was granted the status of a research institute in 1964. This development led to the creation of laboratories focusing on the biology of fruit plants and the introduction and acclimatization of floral and ornamental plants. The Laboratory of Plant Physiology was established in 1975 and later renamed the Laboratory of Experimental Botany in 2008.

On January 31, 1996, the Botanical Garden was renamed in honor of Professor E.Z. Gareev, a corresponding member of the Academy of Sciences of the Kyrgyz SSR, in recognition of his significant contributions to the development of the garden and biological science in Kyrgyzstan.

The Research Institute of the Botanical Garden named after E.Z. Gareev is part of the Department of Chemical, Technological, Medical, Biological, and Agricultural Sciences of the National Academy of Sciences of the Kyrgyz Republic. The current director is Ph.D. Khegai Ivan Valerievich.

Educational Role and Public Engagement

Education plays a key role in biodiversity conservation and sustainable use, especially in a region as ecologically diverse as Central Asia. The Botanical Garden of the Kyrgyz Republic is deeply committed to fostering awareness and advancing scientific research through various

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educational initiatives. For instance, the garden hosts international seminars and conferences for scientists and ecologists, focusing on vital topics such as preserving wild tulips in Central Asia. These speciesare both ecologically significant and culturally important.

In addition to its research and conservation efforts, the Botanical Garden provides internships for university and college students majoring in medical biology and ecology. These internships offer valuable hands-on experience, helping students gain practical knowledge while contributing to the garden's ongoing research projects.

The garden also offers educational tours and excursions for schools, preschools, and adult visitors. These programs aim to engage a broader audience in learning about the region's unique flora and the importance of preserving biodiversity for future generations. Through these diverse educational activities, the Botanical Garden is vital in nurturing the next generation of scientists, ecologists, and environmental stewards. Thus, the Botanical Garden serves as a scientific research institution and an educational and cultural hub.

To further enhance its educational impact, the following initiatives are underway:

• New Thematic Exhibitions and Learning Spaces: Creating specialized areas within the Botanical Garden for educational purposes.

• Educational Programs: Developing advanced training courses for specialists in protected areas, green construction, and environmental education, including creating materials and advisory services for various audiences.

• Community Outreach: Organizing events such as lectures, festivals, and exhibitions in collaboration with local and international organizations.

Wild Tulip Conservation and the Annual Wild Tulip Festival in Kyrgyzstan

One key initiative in the conservation of wild tulips in the Central Asian region is the Annual Wild Tulip Festival in Kyrgyzstan, which focuses on the theme:

"Wild Tulips of Central Asia: Modern Challenges, Threats, and Conservation Methods."

The festival includes a series of workshops and seminars that cover the following critical topics:

• Ecological Threats and Challenges:
- Climate Change and Its Impact on the distribution of wild tulips.
- Ecosystem Degradation: The effects of livestock grazing, agriculture, and urbanization.
- Illegal Harvesting and Trade of rare tulip species.

• Biological and Genetic Research:
- Species Diversity: Central Asia's endemic and rare wild tulip species.
- Genetic Research: Prospects for tulip conservation and population restoration.
- Wild vs. Cultivated Tulips: The role of wild species in modern breeding programs.

• Conservation and Restoration of Natural Populations:
- National and International Programs focused on wild tulip protection.
- Creation of Nature Reserves and Protected Areas for tulip habitats.
- Botanical Gardens and Scientific Institutions: Their role in cultivating tulips artificially.

• Socio-Economic Aspects and Ecotourism:

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- The role of local communities in preserving natural heritage.
- Ecotourism and its role in wild tulip conservation.
- How cultural events and festivals contribute to raising awareness about wild flora.

• Educational and Science Popularization:
- Engaging Youth and Students in research and conservation.
- The role of media and social networks in increasing awareness about wild tulip conservation.

The festival will also feature participation from scientists from neighboring Central Asian countries, who will share insights into the study and conservation of wild tulips.

In recent years, wild tulips have gained global attention for their historical and cultural significance to Central Asia, the region where most modern varieties originated. However, scientists are increasingly concerned about the threats to rare tulip populations, primarily due to climate change, urbanization, and human activity. The Wild Tulip Festival is vital for raising awareness, promoting discussions on sustainable cultivation methods, and sharing conservation strategies. The event also serves as a platform for decision-makers to get involved in developing more effective regional conservation policies. In addition, popular science literature, video materials, and documentaries will be produced to educate the public further.

Government and International Support for Biodiversity Conservation

The Ministry of Natural Resources, Ecology, and Technical Supervision of the Kyrgyz Republic, with the support of UNDP Kyrgyzstan, has revisited the National Strategy and Roadmap for Biodiversity Conservation. This update aligns with the Kunming-Montreal Global Biodiversity Framework, which was adopted as part of the Biodiversity Convention.

As part of this process, the Ministry and UNDP have organized national seminars and activities to bring together stakeholders and discuss biodiversity's challenges. These gatherings aim to set national priorities for biodiversity conservation and determine practical actions to safeguard ecosystems in Kyrgyzstan.

Scientific activities

The primary focus of the Research Institute's activities includes:

1. Conservation of Biological Diversity in the Context of Urbanization and Climate Change

The specialized research areas include introducing, selecting, and rationalizing plants and conserving rare and endangered plant species both ex-situ (in cultivation) and in situ (in their natural habitats). These scientific directions align with global conservation standards and are practiced by botanical gardens worldwide as part of the state system for sustainable plant resource management.

2. Research Objectives and Applied Work

The Institute's comprehensive research addresses climate change and anthropogenic impacts, aiming to improve socio-economic conditions and ensure environmental, biological, and food safety in Kyrgyzstan. Specific goals include:

- Enhancing the microclimate and air quality in urban areas through green spaces, contributing to a healthier living environment.

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- Developing and distributing resilient seedlings for urban and suburban regions of Bishkek, considering soil quality and water availability.

Key Scientific and Practical Problems Addressed

The Research Institute focuses on various scientific and practical issues, including:

- Conservation of Plant Gene Pools: Preserving local and foreign plant species, with a collection of over 6,800 taxa of higher plants.
- Introduction and Collection Expansion: We introduce new species, forms, and varieties of plants to the collection while ensuring their adaptation to changing climates. Special attention is given to rare and endangered species within the garden and across Kyrgyzstan.
- Plant Acclimatization and Growth Regulation: Studying the biological-ecological and physiological-biochemical characteristics of introduced plants to enhance their growth and development. This includes determining the best propagation methods, particularly for difficult-to-root species, including conifers and deciduous trees.
- Horticultural and Agricultural Advancements: Developing methods for the propagation of ornamental and fruit species, as well as creating new varieties of fruit trees (such as apple and plum) with improved resistance to pests and diseases.
- Genetic and Selection Research: Focusing on fruit tree breeding to create new, high-yield, and pest-resistant varieties.
- Training and Publications: Conducting research on dissertation topics, training highly qualified scientific personnel, and publishing research results, both nationally and internationally.
- International Collaboration: Expanding partnerships with botanical gardens, nurseries, and scientific institutions worldwide.
- Environmental and Educational Outreach: Offering educational seminars, lectures, and field trips to students, scientists, and the general public, promoting environmental education and raising awareness about the effects of climate change.
- Expansion and Development of Nurseries: To support the Institute's goals, work began in the fall of 2023 to expand the nurseries for ornamental and fruit plants at the Research Institute. This will increase the production and sale of planting materials adapted to Kyrgyzstan's arid continental climate, particularly those suited for urban environments. Using locally grown, climate-resistant plants will reduce costs and improve the environment in Bishkek and surrounding areas.

Conclusion

The Research Institute of the Botanical Garden named after E.Z. Gareev, plays a crucial role in addressing Kyrgyzstan's environmental challenges. Its efforts in plant conservation, climate change adaptation, and environmental education are helping to create a sustainable future for the region. The Institute contributes to the country's ecology, economy, and society through research, public engagement, and international cooperation.

PS_24_4

Educational and Ecological and Teaching Activities of the Main Botanical Garden of Kazakhstan

11th June 15:00-16:30

Gulnara T. SITPAYEVA

Institute of Botany and Phytointroduction of RK CFAW of MENR

The Main Botanical Garden is one of the oldest botanical gardens of Kazakhstan and of Central Asia. The main mission of the Main Botanical Garden is deemed to be the following: the performance of academic research related to the introduction and the selection of natural and cultured national and global flora, as well as the study, preservation and effective use of the vegetation of Kazakhstan. In total in the scientific and the exposition zones of the Main Botanical Garden there are represented the plant collections that include 3466 taxons of higher plants, 1853 species, 343 forms and 1076 cultivars of plants representing the national and global flora from various regions of the world.

Among the main objectives, fulfilled by the RK state botanical gardens an important role is played by the ecological teaching and educational activities. Our garden is located in the centre of the big city, nearby there are located: the exhibition complex, the national universities, schools and colleges in which connection the territory of the botanical garden is the location that attracts the Almaty residents. Thus in 2023 around 579 thousand people visited the garden, while in 2024 the garden was visited by over 700 thousand people.

Since the year 2020, along with the beginning of the general reconstruction of the MBG, we have started to actively implement the programmes related to the ecological teaching and education, based on the new educational principles. At present, the educational strategy for sustainable development has become one of the priority focal areas of the activities of our Institute.

The development of the ecological teaching and educational activities is also in line with the objectives of the Global strategy for the preservation of plants until the year 2030, one of which goals is to establish and enhance the initiatives related to the professional education and the growth of the potential, related to the preservation of plants, to the academic research and monitoring activities, the taxonomy and the information management, horticulture, botany, biological research related to the preservation of plants, biotechnology and the restoration of the environment.

In connection with the abovementioned aspects, one of the priorities of the Main Botanical Gardens is deemed to be the enhancement of work in the sphere of educational and the ecological and teaching activities. It is this task that is fulfilled by the educational project: "To Know in Order to Love", which was launched in the territory of the MBG of Almaty. The main goal of the project is to provide the knowledge of the surrounding world, and so, to instill the love for nature. Within the framework of the project there were held the interesting scientific film screenings and the lectures, workshops, interactive excursions, ecological quests and many other aspects.

In addition there were developed the five routes for adults and for family walks, eight routes for interactive children's excursions and eight different learning and creative workshops where

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the information on plants and on nature as a whole is provided in the form of games. During the excursions, in addition to the main introduction to the Botanical garden, our guides provide information on the plant world which is very easy to understand, depending on the age of the visitors.

Thus, the children's excursions are supplemented by the game-like interactive elements. In each of the workshops the schoolchildren practice the skills of beginner naturalists using board games game like quests and the making of projects using natural materials. As a result of activities, not only do participants learn how amazing the plant world is, but they also begin to understand how closely the elements of the environment are intertwined, and how important it is not only to care for plants, but also to care for the nature as a whole.

In the course of an excursion, "Siberia is a wonderful land", the developers of the educational programme talk about which plants are capable of surviving in the harsh conditions of extreme frosts, the sharp weather fluctuations and of permafrost. During the excursion titled "America to the left and to the right", children learn which plants are referred to as the "American while cedar" and "Oregon Grapes", which plant fruits are used as a substitute for coffee and for hair shampoo, which plant fibre is added to the jeans fabric to increase strength and many other things. During the excursion, named: "Where the Sun Rises", the travel to oriental expositions awaits the visitors, taking them to the plants, growing in China, Korea, Japan, in the Far East and on Kamchatka Peninsula. The excursion participants learn which plant is as old as the dinosaurs and which one is referred to as "a vessel full of water", they will also see the devil's tree, the Chinese gooseberry, the tree with the velvet bark which bears fruit in the form of the black pearls.

The Global strategy for the Preservation of Plants until 2030 determines the actions of the botanical organisations related to the improvement of green infrastructure of cities where special attention is given to provision of the teaching and the development of ecological skills. It is also noted that there is a need to hold demonstrations and shows for the visitors of botanical organisations related to the use of local species in the city environment.

With the engagement of the partner company "Chevron", the employees of the Institute organized within the botanical garden the work on such projects, as: "Young Citizen Scientists" Summer School and "Green Ranger Club".

The interested schoolchildren from the public middle schools and high schools became the participants of the summer school "Young Citizen Scientists". The Institute developed the educational programmes in three focal areas: seed science on the basis of the seed bank of he natural flora of Kazakhstan; the fundamentals of the Phytopathology and of Entomology; the closed ground plants and the Mapping of Plants of the Nursery. The specialists in the fields convened classes within the framework of academic internships in the Main Botanical Garden. One of the results of this project was the mobile application, developed by school children and assisting in the performance of monitoring, the mapping and the replenishment of the database of the vegetation fund.

Within the framework of "Green Rangers Club" twenty meetings of the club members were organized. The club united more than 50 volunteers on the permanent basis. The aim of this project is the public involvement in the solution of the problems of the urban greenery projects, the training of volunteers on the basis of the Main Botanical Garden with respect to the following

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skills: monitoring the condition of trees, caring for plants, reconstruction of greenery and the protection of urban "green" facilities. There was designed a programme, which included 12 lectures and 12 practical tutorials. The volunteers performed the monitoring of the health condition of trees in two exposition plots of the Garden. During the sessions of the club volunteers learned information on the plant diseases and the species of plants that grow in the city.

In 2024 the Institute became a participant of the Tabigat labs project in partnership with "Chevron" company. The following was implemented within the framework of this project:

- The presentation of methodological guide "The diseases that city trees suffer from, and how to help city trees" complied by the academic researchers of the Institute.
- Monthly meetings of book club (BOOKulture) from May to September.
- For the Zero Emissions Day (21 September) there was compiled a book shelf of environmental literature – 30 books based on the topics of ecology, climate change and mindful consumption. The books are freely available to all the botanical garden visitors.

Within the framework of the family festival "Tabigat Labs" (Nature Labs) there were also held "Old Boulevard" ecogame, workshops, a lecture on the topic of "Project of civil science: importance and opportunities". In the course of the lecture the garden visitors learned of the importance of the study and the preservation of wild nature jointly with the help of academic volunteers and specialists, as well as the special considerations of the work with the iNaturalist platform, the civil science project and the academic volunteer work, titled Citizen Science.

For the purposes of popularizing knowledge on the rare and on endemic species of flora of Kazakhstan the botanical garden organizes activities jointly with the sponsors, that related to the planting of seedlings: the Sievers apple tree, the Nedzvetsky apple tree, almond tree, the Yarmolnik birch tree.

The following educational projects for children have been organized in the territory of the Main Botanical Gardens:

Photography exhibition of school children – participants of the training in the Academy "Wildlife Photographer of the Year Kazakhstan". This exhibition was organized with the support of the British Council Kazakhstan in collaboration with the London Natural History Museum and the Ubran Forum Kazakhstan Public foundation. In the exhibition there were presented the works of the 18 kazakhstani teenage 15-17 year olds who had undergone training by Claus Nigge, a famous wildlife photographer.

- Young artists participated in a workshop in support of the preservation of the Sievers Apple tree by artist Brigitte Hoffherr for children which was organized jointly with "Almaly Zhumak" Public Foundation, where children learned a lot of interesting information on the Sievers apple tree, attended an excursion around the collection plot on wild fruit plants of Kazakhstan and made their own illustration.
- Interactive VR installation in the botanical garden in June – a joint project with Goethe Institute "Boundless Library".

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In 2024 alone almost 500 people visited various workshops in the MBG. In doing so, around 200 children from the socially vulnerable strata of the population participated in these activities. On 19 July, 2024 there was organized and held the first family inclusive ecofestival InEcoFest in the Main Botanical Garden. Over 4000 guests participated in it. The following was included in the programme of the festival: tutorials, games, lectures, concert programme, fashion show, excursions around the botanical garden, film screenings the sales fair and exhibition of the goods used in the sphere of ecology and inclusion. Eighteen for a for various activities were organized.

Over the last five years the academic and popular lectures on matters related to the protection of plant world were organized on the summer stage of the Main Botanical garden. The topics and the lecture plan were developed by the Institute's academic researchers. The lectures on the following topics: on the importance of the study and the preservation of the Sievers apple tree, an endemic of Kazakhstan, "The National Flower of Kazakhstan", dedicated to the tulips of Kazakhstan, as well as the lectures on urban greenery and the on the national parks of the Republic. An online broadcast was organized for those unable to attend. The Main Botanical Garden is also a wonderful forum for conducting internships for students of the higher educational establishments of Kazakhstan.

The information resources in possession of the Main Botanical Garden are of special importance in the formation of the ecologically oriented public conscience. One of them is the Department of academic library of the Institute. Its funds which include the literature sources with respect to various focal areas of botany, ecology, geography are used not only by the Garden's employees, but also by the school and university students and by teachers. All the information work is performed by the specialists of the Department of Public Relations with the use of own information resources, such as pages in social networks and the Institute's own website: www.botsad.kz, as well as with the engagement of mass media representatives and of bloggers. In addition to it the opportunity of presenting information to the visitors of the Main Botanical Garden directly in the territory of the Botanical garden is also used. In the year 2024 two hundred and eighty nine publications in social networks on Facebook, Instagram and Telegram pages and on the Institutes own website www.botsad.kz were published, i.e. they were published daily, except for Saturdays and Sundays. All the publications are divided into three types:

- academic information on the activities of all the institute labs, introductions of academic researchers, information on work results, including participation in the international academic conferences and round tables, exchange of experience and cooperation with botanists of the entire world;
- useful information on plant world, familiarization with interesting plants from the Main Botanical Garden collections;
-i nformation in the form of announcements and advertisements with the invitation to activities, held in the territory of the Main Botanical Garden (workshops, lectures, educational prgrammes with the participation of the botanical academics, musical evenings and exhibitions).

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Thus, over the recent years the intensive development of relations and of focal areas in the sphere of ecological teaching has gone on. The number and the topics of classes are increased, the new methods of working with the population are practiced and the new organizational structures are being established and the trained staff in the sphere of environmental teaching and working with the population are being engaged. All of this assists in the formation of ecological conscience with visitors and the forming of a positive attitude to the biological resources of the country. Today the Main Biological garden has become a recognized leader and coordinating centre in the sphere of ecological education in Kazakhstan.

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PS_22

UNESCO East Asia-KNA Joint Panel Discussion: Botanic Gardens, the Hub for Wellbeing, Sustainability and SDG Action through Education, Research, and Conservation in East Asia

11th June 15:00-16:30

UNESCO Regional Office for East Asia & Korea National Arboretum

Host: Meeyoung CHOI, Chief of Education, UNESCO Regional Office for East Asia
Ai SUGIURA, Chief of Natural Science, UNESCO Regional Office for East Asia
Sarangerel OIDOVSAMBUU, Head of Laboratory of Natural Products Chemistry, Mongolian Academy of Sciences
TBC, Shanghai institute of Mateiral Medica Botanical Garden
Jungyu BAE, Director of Garden Education Research Division, Korea National Arboretum
Tomohisa YUKAWA, Director of Tsukuba Botanical Garden (National Museum of Nature and Science Japan)
Rei HAN, Director of South China Botanical Garden

Botanic gardens are uniquely positioned to address global challenges such as biodiversity loss, climate change, and human wellbeing. They serve as platforms for education, research, and conservation, making them vital contributors to the Sustainable Development Goals (SDGs). Under the concept of the specific role of botanic gardens, This session is expected to bring together the diverse roles of botanic gardens, focusing on their potential to SDG 3, 4, 10, 13.

Opening Remarks
- Shahbaz KHAN, Director, UNESCO Regional Office for East Asia in Beijing, China
- Youngsuk IM, Director-General of Korea National Arboretum
- Byungsoon YOON, Seceretary-General(Acting), Korean National Commission for UNESCO

Panel Discussion
- Moderator: Meeyoung CHOI, Chief of Education, UNESCO Regional Office for East Asia

Panel 1. UNESCO Programmes and Framework supporting Botanic Gardens
Ai SUGIURA, Chief of Natural Science, UNESCO Regional Office for East Asia

Panel 2. Youth-Led Citizen Science in Mongolia
Sarangerel OIDOVSAMBUU, Head of Laboratory of Natural Products Chemistry, Mongolian Academy of Sciences

Panel 3. Therapeutic Horticulture: Examples from biosphere reserves and botanic gardens
TBC, Shanghai institute of Mateiral Medica Botanical Garden

Panel 4. Youth Internship Programme in Botanic Gardens Nationwide in Korea
Jungyu BAE, Director of Garden Education Research Division, Korea National Arboretum

Panel 5. School and Community Partnership for Education for Sustainable Development in Japan
Tomohisa YUKAWA, Director of Tsukuba Botanical Garden (National Museum of Nature and Science Japan)

Panel 6. School and Community Partnership for Education for Sustainable Development in China
Rei HAN, Director of South China Botanical Garden

PS_22_1

School and Community Partnership for Education for Sustainable Development in Japan

11th June 15:00-16:30

Tomohisa YUKAWA

Tsukuba Botanical Garden

Most botanical gardens in Japan were established by government agencies in charge of agriculture or construction; therefore, efforts to support education have been limited. In addition, many botanical gardens have been under management pressure in recent years and lack the appropriate human resources and budgets to support education. Under such circumstances, the Education and Promotion Committee of the Japan Botanical Garden Association is promoting the improvement of the literacy of botanical garden staff nationwide regarding education support, as well as the development and joint use of educational resources. We hold workshops every year to facilitate the implementation of SDG initiatives by botanical gardens across Japan. The theme of the 2019 workshop was to devise learning programs related to the SDGs and to facilitate educational dissemination that addresses local issues through collaboration with diverse sectors. An analysis of annual learning programs at 23 botanical gardens nationwide revealed that they are already implementing programs that meet one of all 17 SDG targets, even though they have not consciously incorporated the SDGs. Further, there were more programs related to Targets 15, 4, 3, and 12, in that order. Since most of the botanical garden's learning programs have the potential to contribute to the SDGs, it is expected that the staff in charge of outreach will be able to contribute more to the SDGs in their events and exhibitions by being aware of and explicitly expressing the SDG perspective.

PS_11

Plant-Based Activities for Human Well-being

11th June 17:00-18:30

Korea National Arboretum
Society for People, Plants and Environment

Aekyung LEE, Dankook University, President of Society for People, Plants and Environment, Seoul, Korea
Sinae PARK, Kunkook University, Seoul, Korea
Hyeran KWACK, Seoul National University of Education, Seoul, Korea
Miae JEONG, Korea National Arboretum, Seoul, Korea
Junghee LEE, National Institute of Forest Science, Seoul, Korea

"Plants" play key role in human well-being. In this session, we will cover various activities (garden therapy, therapeutic horticultural programs, horticultural activities, forest healing…) related to human health in botanic gardens.

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PS_11_1

The Evolving Role of Botanical Gardens in Advancing Plant-Based Healing

11th June 17:00-18:30

Aekyung LEE

Dankook University

Plants are the language of healing and recovery. With forest- and agro-healing increasingly supported by institutional frameworks and public policy, plant-based healing is gaining recognition as a vital contributor to human well-being. Botanical gardens are evolving—from static displays to dynamic healing environments that foster deep connections between people and plants. Healing gardens are being integrated into policy, botanical gardens are being reimagined as healing spaces, and plants continue to evolve as a language of recovery. In this context, designing client-centered programs and promoting interdisciplinary collaboration among experts is more important than ever.

PS_11_2

An Educational Approach to the Coevolution of Forest Education

11th June 17:00-18:30

Hyeran KWACK

Seoul National University of Education

Forest education has the driving force to develop only when it co-evolves in accordance with changes in the times and characteristics of child development. As a global standard for this, we will look into consumer-centered forest education plans centered on design and content development centered on Gen Z genration and educational methods such as immersion, process-oriented, and shared learning for forest education program development.

PS_11_3

Evidence-Based Garden Therapy - The Therapeutic Value of Plants in Hospital Settings

11th June 17:00-18:30

Sinae PARK

Konkuk University

This presentation introduces the evidence-based healing mechanisms of garden therapy. Based on the interaction between humans and plants, garden therapy promotes therapeutic effects across physical, emotional, cognitive, and social aspects. Through recent research findings and practical case studies, this presentation explores the potential of garden therapy as a new paradigm in hospital-based healthcare environments.

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PS_11_4

Enjoying, Learning, Healing through Plants: Inclusive Gardening at the Korea National Arboretum

11th June 17:00-18:30

Mijeong YOON

Korea National Arboretum

The Korea National Arboretum has implemented various plant-based programs that promote public well-being beyond its traditional research and exhibition roles. One such initiative is a specialized "Gardening Program for the Socially Vulnerable," designed to support the elderly, persons with disabilities, and underserved populations. Through therapeutic gardens, urban farming plots, and indoor horticultural activities, the program fosters emotional stability, physical engagement, and social inclusion. These initiatives demonstrate how arboreta can serve as inclusive, community-oriented spaces that contribute to health and well-being. This presentation introduces the program's approach, outcomes, and potential for broader implementation in public green spaces.

PS_25

WWF-KNA Joint-Session: A Strategic Approach to Activities (Including Education) for Enhancing Awareness of Biodiversity Conservation

11th June 17:00-18:30

WWF Korea & Korea National Arboretum

Minhye PARK, World Wildlife Fund Korea, Seoul, Korea
Nicholas TAYLOR, GGGI, Seoul, Korea
Liwan CHANG, Taiwan Forestry Research Institute, Taipei, Taiwan
Yu QIAN, International Crane Foundation, Shanghai, China
Carlos VELAZCO, National Geographic, Washington, United States
Yongha YOO, Seoul Sinmun Daily, Seoul, Korea

Biodiversity conservation is an essential factor for a sustainable future, yet public awareness remains insufficient. Efforts are being made from various sectors to highlight the importance of biodiversity and mitigate risk factors, but continuous awareness Improvement is crucial for achieving better results. To address this, we aim to explore past efforts, identify current challenges, and discuss possible solutions. In this panel discussion, experts from various fields will assess the current level of public awareness on biodiversity and explore effective mediums to enhance it. In particular, we will propose new partnerships for improving biodiversity awareness through an interdisciplinary approach that transcends disciplinary boundaries. This discussion aims to explore practical strategies and collaborative measures to promote biodiversity conservation awareness. The panel will include representatives form nature conservation NGOs, international organizations handling biodiversity information, associations engaged in nature exploration and education, environmental journalists, and environmental activists. With diverse perspectives, this discussion will provide a valuable opportunity to gain insights from multiple fields, making it a meaningful platform for exchanging ideas and strategies.

PROGRAMME

DAY 4

The 11th INTERNATIONAL CONGRESS
ON EDUCATION IN BOTANIC GARDENS

OVERVIEW

CONGRESS TIMETABLE **DAY 4**

09:00-10:00

Plenary Speech 5 / Room 102-104
The Farmer Tantoh New Village Environmental Movement
Farmer TANTOH (Founder of Save Your Future Association)

10:30-12:00

Oral Presentations	Panel session	Panel session	Panel session	Oral Presentations	Workshop	Workshop	Panel Session
Topic 5	Topic 2	Topic 5	Topic 2	Topic 2	Topic 2	Topic 2	Topic 4
Chair : Chie TSUTSUMI				**Chair : Svetlana SIZYKH**			
Room 101	Room 102	Room 103	Room 104	Room 105	Room 209A	Room 209B	Room 210
NB_O_120 (Video Session) A Garden Made for All: Becoming a More Accessible Garden **Jennifer SCHWARZ**	**PS_20** Gardens, Arboretums, and Communities Come Together **Miae JUNG** (Korea National Arboretum) **Michelle PROVAZNIK** (American Public Garden Association) **Tim UPSON** (Royal Horticultural Society)	**PS_32** Cultivating Collaboration: Interdisciplinary Partnerships to Address the Horticultural Skills Gap **Charlotte GILSENAN** (Bankside Open Spaces Trust) **Dr. Suzanne MOSS** (Royal Horticultural Society) **Gemma TANDY** (Royal Horticultural Society	**PS_49** Art in the Garden: Fusing Art and Science **Felicity GAFFNEY** (National Botanic Gardens of Ireland) **Bjork THORLEIFSDOTTIR** (Reykjavik Botanic Garden) **Joseph LYNCH** (National Botanic Gardens of Ireland) **Ásthildur JONSDOTTIR** (University of Iceland)	**BS_O_62** (Video Session) MakiLingap – A Stewardship Campaign Program for the Makiling Botanic Gardens: Fostering Partnerships for Biodiversity Conservation and Education **Leilani CASTILLO**	**WS_45_2** Climate Change Action – What More Can We Do? Creating a Declaration of Intent to Address Climate Change Goals (Part One of Two) **Helen MILLER** (Botanic Gardens Conservation International)	**WS_46** Case Study: Development and Application of Arboretum Educational Program for the Implementation of the SDGs by Elementary School Students **Heeyoung RYU** (Korea National Arboretum) Nextwork) **Minim CHO** (Korea National Arboretum) Nextwork) **Gyesung LEE** (Korea National Arboretum)	**PS_15** Digital Healing Gardens: Future Education in Botanical Gardens and Arboreta Using Advanced Technologies (KOAGI) **Korea Arboreta and** Gardens Institute (KOAGI)
NB_O_109 Building the Science Popularization Bridge: Innovation and Practice of National Botanical Gardens **Hongyan CHEN**				**BS_O_43** Educational Collaborations in America's Garden Capital **Mackenzie KNIGHT-FOCHS**			
NB_O_115 The Role of Botany Education and Botanic Gardens in Mitigating Global Environmental Challenges **Rusea GO**				**BS_O_80** Engaging Members and Staff: Raising Awareness through Cross Departmental Collaboration **Jessica MONAHAN**			
NB_O_105 Rooting in a New Homeland:A Case Study at Meise Botanic Garden(Belgium) **Marie DESPIEGELAERE**				**BS_O_89** learning in a botanical garden on conceptual change in biology **Vesta VANCUGOVIENE**			

13:00-14:30

Oral Presentations	Panel session	Panel session	Workshop	Pannel Session	Workshop	Panel session	Workshop
Topic 5	Topic 1	Topic 4	Topic 1	Topic 2	Topic 4	Topic 5	Topic 2
Chair : Kokugonza HARRIET							
Room 101	Room 102	Room 103	Room 104	Room 105	Room 209A	Room 209B	Room 210
NB_O_123 InIntegrating Botanical Garden Educational Activities into the Formal Education System through Student Engagement through the Schoolyard **Chuwei KONG**	**PS_7** Why is Seoul Striving to Become a Garden City? **Youngmin KIM** (University of Seoul) **Hyemi YU** (Seoul Metropolitan Government) **Eunyeong PARK** (Joongbu University) **Sunmi KIM** (Editor of Dong-A Ilbo)	**PS_18** Youth Citizen Science Program for Climate Change Impact Assessment **H.O. BUENVENIDA** (Capiz State University) **Sayee GIRDHARI** (Season Watch) **Donghak KIM** (Korea National Arboretum) **Wonseop KIM** (Donga Science) **Yoori CHO** (Seoul National University)	**PS_48** The Development and Acceptance of Knowledge and Information of Korean Traditional Garden Plants **Hyunsil SHIN** (Woosuk University) **Yeongho CHOI** (Korea Heritage Service)	**PS_50** ASEAN-ROK International Garden with ASEAN Cooperation Plan **Sunghwan KIM** (Korea Forest Service, Seoul, Korea	**WS_16** Workshop on Botanical Education Initiatives Led by Youth **Somin KIM** (Korea Rural Nextwork) **Teachers and students** (Hwangdun Middle School)	**PS_33** Growing Together: Cultivating Diversity in Horticultural Careers **Charlotte GILSENAN** (Bankside Open Spaces Trust) **Dr. Suzanne MOSS** (Royal Horticultural Society) **Gemma TANDY** (Royal Horticultural Society)	**WS_51** Applying the Kunming-Montreal Global Biodiversity Framework (KMGBF) and Global Strategy for Plant Conservation (GSPC) to Your Education Activities **Helen MILLER** (Botanic Gardens Conservation International, UK – coordinator) **Tara MOREAU** (UBC Botanic Garden)
NB_O_130 Learning to Put the "Co" in Community: A Glimpse into the U.S. Botanic Garden's Three-Year Community Engagement Strategy **Nina GRAHAM**							
NB_O_86 Central Asia Green Road Project: Building a Collaborative Future for Biodiversity Conservation in Central Asia **Hyeonjin JEONG**							
NB_O_145 Operational Direction of the Regional Coexistence Project by the Korea Arboreta and Gardens Institute to Address Local Extinction **Jaesun YI**							

Outdoor Workshop
Time : 12 JUNE 10:30 - 12:00, Place: Bongeunsa Temple (531 Bongeunsa-ro, Gangnam-gu, Seoul)

Topic 1 **WS_26**
Sensitive Encounters: Healing and Caring for Biodiversity through Plant Connection and Timefulness

Valerie CHARVEL (Meise Botanic Garden)

NB_O_120

A Garden Made for All: Becoming a More Accessible Garden

12th June 10:30-12:00

J. SCHWARZ[1*]

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Keywords: Accessibility, Equity, Inclusion, Universal Design, Programs, Education

This presentation will share the Chicago Botanic Garden's (CBG) experiences, process, and results of a comprehensive accessibility audit and creation of an action plan for implementing recommendations. Through this presentation, participants will learn about Universal Design, the accessibility audit process, and approaches to making both gardens and public programs accessible to people of all abilities. The belief that all people benefit from interaction with nature drive the Garden's equity, diversity, inclusion and accessibility (EDIA) work. The opportunity to fully participate in the programs offered by the Chicago Botanic Garden by people of all abilities is the ultimate goal of the Garden's accessibility initiative. In 2024, the CBG undertook an operational, programmatic, digital, and structural accessibility audit supported by a consultant to identify the best, most effective, and most financially viable ways of including people of all abilities in the experiences we provide. The audit was grounded in the concept of Universal Design, a concept in which programs and environments are designed to be usable by all people, to the greatest extent possible, without the need for adaption or specialized design. This results in better experiences for people of all abilities. The audit has assessed the status of the CBG's operational, programmatic, digital, and structural accessibility, identified and prioritized the ways that the CBG can become more accessible across all four aspects, created a prioritized action plan with recommended improvements based on our context, space, and resources. This will provide a guide for the organization for implementing the recommendations over time in a financially and resource efficient way. Participants will leave this session with a thorough understanding of how the accessibility audit process works, the types of concerns that might arise in both physical space and program operations, and solutions that they can bring back to their home gardens.

NB_O_109

Building the Science Popularization Bridge: Innovation and Practice of National Botanical Gardens

12th June 10:30-12:00

H.Y. CHEN[1], K. LI[1]

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Keywords: Botanical gardens, Education,Knowledge network, activities

Botanical gardens, serving as crucial hubs for plant conservation, research, and public education, play an indispensable role in global nature education. Science popularization is one of the important functions of the CNBG. This report mainly explores how the CNBG has become a bridge connecting science and the public through innovative science communication practices. The China National Botanical Garden (North Garden), with the aim of improving the scientific literacy of the whole people and serving the national innovation-driven strategies and policies, promotes the coordinated development of science popularization and scientific research. It gives full play to its resource advantages of rich biodiversity, vast space, and a large number of scientific and technological personnel, accurately targets the audience, and constructs a knowledge network centered on plants and supplemented by all things. It creates a science popularization space layout with the science museum as the core and the park as the carrier, and forms a science popularization team with full time science popularization personnel as the core and the participation of all scientific and technological workers in the park. By holding various science popularization activities to meet the needs of different audience groups, it continuously creates popular brand activities such as the "Symbiosis of All Things Lecture Hall" "Experts Show You About Plants" and "Nature Observation Classes in Botanical Gardens". Meanwhile, the CNBG actively exerts its platform function, widely rallies social forces, integrates scientists, scientific and technological workers, science popularization experts, social groups, and volunteer teams, and collaborates in multiple directions to build a large-scale science popularization pattern.

The Role of Botany Education and Botanic Gardens in Mitigating Global Environmental Challenges

12th June 10:30-12:00

Rusea GO

Biology Department, Faculty of Science, Universiti Putra Malaysia, 43400 UPM SERDANG, Selangor, Malaysia.

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Keywords: botany literacy, climate change, deforestation, ex-situ conservation, species preservation

Botany education and botanical gardens play a pivotal role in addressing global environmental challenges, including biodiversity loss, climate change, and habitat destruction. Through formal education, research, and public engagement, botany education enhances awareness and understanding of plant conservation, sustainable practices, and ecological resilience. Botanical gardens function as living laboratories, safeguarding endangered plant species, supporting scientific research, and fostering environmental stewardship through community outreach. Notable initiatives, such as the Millennium Seed Bank Partnership at Kew Gardens, which has preserved over 2.4 billion seeds, and Singapore Botanic Gardens' rainforest restoration programs, exemplify their global conservation impact. Additionally, educational programs like the Fairchild Challenge in the U.S. actively engage students in hands-on sustainability projects. In Malaysia, universities play a critical role in sustaining botany programs to produce biodiversity and conservation professionals for various environmental agencies. University-based botanical gardens, such as the Agriculture, Medicinal, and Ornamental Garden at Universiti Putra Malaysia, the Fernarium at Universiti Kebangsaan Malaysia, and Rimba Ilmu at the University of Malaya, contribute significantly to conservation and education. This paper explores the roles of botany education and botanic gardens in addressing environmental degradation, highlighting their synergistic contributions to sustainability, ecosystem restoration, and climate change adaptation. Through case studies and examples, this paper illustrates how these fields work together to foster environmental stewardship, support biodiversity, and provide innovative solutions for global environmental challenges by integrating education with conservation efforts to strengthen ecological literacy and inspire proactive environmental action, ultimately fostering a more sustainable future.

Rooting in a New Homeland: A Case Study at Meise Botanic Garden (Belgium)

12th June 10:30-12:00

M. DESPIEGELAERE[1*], E. BOTTE1 [2], V. CHARAVEL[1 2], L. BLOMMAERT[1], J. KLEBER[1], K. ES[1], and S. DESSEIN[1]

[1]Meise Botanic Garden, Meise, Belgium

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Keywords: newcomers, culinary garden, inclusion, decolonization, mental health

Meise Botanic Garden developed an initiative that welcomes asylum seekers from several reception centers in Brussels, in collaboration with the Federal Agency for the Reception of Asylum Seekers. Our focus is on non-accompanied minors (aged between 15 - 25) who have recently arrived in Belgium. As a botanic garden, we offer them a green sanctuary - a place to step away from the challenges of life in a reception centre. Research has shown that spending time in nature helps in processing and healing from traumatic experiences.

The participants engage in hands-on activities in our Culinary Garden, where they dig, weed, harvest crops,and cook delicious meals with the day's harvest. By working together outdoors, they build connections beyond the label of "refugee," forming relationships within a more egalitarian and collaborative environment. The act of cultivating the land fosters a sense of community and ownership.

The workshop is educational, including learning about typical Belgian crops and sustainable agriculture. The participants become more acquainted with the Dutch language, and make a first step to integrate into our Belgian society. However, knowledge exchange flows both ways: they teach staff about cooking a Palestinian Msakhan and how to pronounce the word for garlic in the African language, Yoruba. We must expand beyond a Western perspective and value the indigenous knowledge in ecological conservation, as we confront biodiversity loss.

Botanic gardens have long been linked to the colonial histories of their countries, shaped by the collection and movement of plants across the world. While originally serving scientific and conservation purposes, they were also influenced by systems of power that dictated plant hunting and profit. Today, botanic gardens have the opportunity to become inclusive spaces that foster social and environmental justice.

By acknowledging this history, botanic gardens can actively contribute to recognition and inclusion, ensuring that those affected by displacement and historical inequalities find belonging and agency. Initiatives like this are a step toward a more just and decolonized future, rooted in respect for nature and each other.

MakiLingap - A Stewardship Campaign Program for the Makiling Botanic Gardens: Fostering Partnerships for Biodiversity Conservation and Education

12th June 10:30-12:00

L.A. CASTILLO[1*], M.S. CANCERAN[1], A.A. LIMPIADA[1], A.C. MALAYBA[1], and R.P. CERENO[1,2]

[1]Makiling Botanic Gardens, Makiling Center for Mountain Ecosystems, College of Forestry and Natural Resources, University of the Philippines Los Baños, College, Laguna, Philippines

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Keywords: partnership, Global Strategy for Plant Conservation, biodiversity conservation and education

Partnerships for plant conservation are vital as stated in Target 16 of the Global Strategy for Plant Conservation (GSPC). The MakiLingap Program for the Makiling Botanic Gardens (MBG) which was launched in 2010 is anchored on this GSPC Target 16. Despite being the oldest legislated botanic garden in the Philippines, MBG has limited funding to carry out its mandate to serve as a training laboratory for instruction, research, and extension. The MakiLingap is a coined word from Maki which means Makiling and Lingap – a Filipino word which means care. MakiLingap Program generally aims to build partnerships with institutions and organizations to sponsor projects at MBG with impacts on biodiversity conservation and education, environmental restoration and climate change. Through various presentations of the program to several conferences, symposia, and public fora, some of the biggest institutions have responded. The SM Supermalls sponsored the fabrication and installation of informative signages in 2010 while the Toyota Motor Philippines Foundation (TMPF) sponsored the refurbishment of MBG visitors' area in 2012. These sponsorships have significantly upgraded the education function of MBG. From 2019 to present, other institutions have adopted establishment of theme gardens which started the taxonomic landscape of MBG's living collections showcasing ex situ and in situ conservation of rare, endemic, and threatened Philippine plants. These include Ficus and Breadfruits, Palm Garden, and Myrtles Garden which were sponsored by Australian, TMPF, and Turkish Embassy, respectively. In 2023, the Philippine Geothermal Production Company, Inc. sponsored the enhancement of Molave Forest which include inventory of trees for carbon sequestration and assessment. The MakiLingap Program has been very instrumental in keeping MBG's mission of promoting public awareness and appreciation of the diversity, importance, and conservation of Philippine flora through biodiversity conservation education and living collections management. MakiLingap will continue for both botanic gardens and education are priceless.

BS_O_43

Educational Collaborations in America's Garden Capital

12th June 10:30-12:00

M. KNIGHT-FOCHS[1*], and B. THOMPSONOWAK[2]

[1] Scott Arboretum & Gardens, Swarthmore, Pennsylvania, United States of America

[2] Morris Arboretum & Gardens of the University of Pennsylvania, Philadelphia, Pennsylvania, United States of America

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Keywords: Collaboration, education, conferences, partnership, America's Garden Capital

This presentation will explore the power of interdisciplinary partnerships in fostering collaboration between large botanic gardens and smaller local gardens within the greater Philadelphia area, known as America's Garden Capital. With over 30 public gardens within a 30-mile radius, the region is a hub for horticultural expertise, encompassing gardens of varying sizes and budgets, supported by a wide range of affinity groups. These diverse institutions have significant opportunities to collaborate, share resources, and exchange best practices. Through case studies of both long-standing and emerging partnerships, such as the Woody Plant Conference, Perennial Plant Conference, Annual Design Symposium (Morris, NDAL Conn. College), Peony Palooza, Tree Canopy Conference, and the Chester Children's Chorus Summer Program, this presentation will highlight successful collaborative efforts. Emphasizing the benefits of shared leadership and collective goals, the presenters will discuss how these partnerships enhance educational programming, strengthen the horticultural community, and create a network of mutual support among institutions of all sizes.

BS_O_80

Engaging Members and Staff: Raising Awareness through Cross Departmental Collaboration

12th June 10:30-12:00

J. MONAHAN[1]

[1] San Diego Botanic Garden, Encinitas, CA, USA

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Keywords: engagement, members, interdisciplinary

San Diego Botanic Garden embarked on an exciting and transformative initiative with the launch of the Members Only Mornings program in 2024. Given the recent rapid growth of staff positions over the past three years, as well as the need for consistent mission centered member engagement, this program sought to improve collaboration between departments while providing deeper, more meaningful experiences for members. The science work of the garden goes unnoticed for many of our active members since much of it takes place outside the traditional garden grounds. However, awareness to our stakeholders, including members and even staff has been a challenge with very rapid growth. Prior to our ability to expand our collaboration outside the organization- we needed to build programming that increases internal collaboration and breaks down work silos that have evolved from rapid growth thus changing the culture of how we as an organization had historically communicated and collaborated. This program taught collaboration from ideation through evaluation and expansion. The new structure of Members Only Morning has one year of quarterly programming with an attendance of nearly 800 and collaboration of all garden departments. Members Only Mornings is a powerful step in the right direction as it enhances member retention and satisfaction. Building a culture of cross-departmental collaboration is the most important aspect of this program that should spill out and foster the expansion and growth of programming to new audiences.

BS_O_89

The Impact of Learning in a Botanical Garden on Conceptual Change in Biology

12th June 10:30-12:00

V. VANČUGOVIENĖ[1,2,3*], E. LEHTINEN[2,4] and I. SÖDERVIK[5]

[1]Vytautas Magnus University Botanical Garden, Kaunas, Lithuania

[2]Vytautas Magnus University Education AAccording to several past studies, learning in botanical gardens contributes significantly to a student's conceptual understanding (Mettis et al., 2023; Sellmann & Bogner, 2013).

[3]Vytautas Magnus University STEAM Didactic Centre, Kaunas, Lithuania

[4]Turku University, Turku, Finland

[5]Helsinki University, Helsinki, Finland

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Keywords: intervention, secondary school, conceptual change, photosynthesis, respiration, inquiry-based learning, biology education

According to several past studies, learning in botanical gardens contributes significantly to a student's conceptual understanding (Mettis et al., 2023; Sellmann & Bogner, 2013). Research on the long-term effects of learning in botanical gardens on conceptual understanding is limited, however. Therefore, there is a need to highlight the important role of botanical gardens in education through scientific research and to strengthen the collaboration between botanical gardens and educational scientists. We conducted this study (Vančugovienė et al., 2024) to determine whether learning in Vytautas Magnus University Botanical Garden (BG) (Lithuania) improves students' conceptual understanding of biological concepts over long time. There were 79 students in 9th grade (14-16 years old) who participated in inquiry-based learning biology lessons in BG, and 72 students in 9th grade who participated in traditional biology lessons at school. In contrast to traditional classroom teaching, inquiry-based learning in BG was found to positively influence the development of correct scientific knowledge. Students also overcame resistant misconceptions about photosynthesis and respiration through the learning activities in BG. The students in the experimental group outperformed those in the traditional classroom after three months. Eventually, specially designed lessons in botanical gardens may allow for the implementation of conceptual change, leading to the alteration of previously held misconceptions into scientifically accurate concepts.

NB_O_123

Integrating Botanical Garden Educational Activities into the Formal Education System through Student Engagement through the Schoolyard

12th June 13:00-14:00

C. KONG[1,2] and J CHEN [1,*]

[1] CAS Key Laboratory of Tropical Forest Ecology, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, Mengla, Yunnan, China

[2] University of Chinese Academy of Sciences, Beijing, China

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Keywords: school garden, individual interest, science capital, critical thinking disposition, inquiry-based learning

How can botanical gardens better serve their educational function and integrate into the formal education system? In the past, "Botanical Garden into Schools (植物园进校园)" activities were often conducted in the form of single lectures or one-day science outreach events. This study explores a new long-term approach: bringing experiential and inquiry-based activities from botanical gardens into the school environment, making them a regular part of students' daily learning. Specifically, leveraging the school garden or green space in the schoolyard, the researcher established nature observation clubs in three schools over three semesters and assessed the impact of the educational program on students' individual interest in nature, science capital, and critical thinking dispositions through pre- and post-questionnaires, semi-structured interviews, and daily observations. Based on three semesters of on-site research, the study identifies the factors influencing primary school students' individual interest in nature and the pathway through which this interest develops, as well as the impact of inquiry-based learning activities on middle school students' science capital and critical thinking dispositions. In conclusion, the study advocates for integrating botanical garden activities into the formal education system, using the school's outdoor environment to provide age-appropriate educational activities: cultivating primary school students' interest in nature through experiential activities, enhancing middle school students' science capital and critical thinking dispositions through inquiry-based activities.

NB_O_130

Learning to Put the "Co" in Community: A Glimpse into the U.S. Botanic Garden's Three-Year Community Engagement Strategy

12th June 13:00-14:30

N.S. GRAHAM

United States Botanic Garden, Washington, D.C., United States of America

*Corresponding author email: Nina.Graham@aoc.gov

Keywords: Community, collaboration, listen, connection, co-create, and sustain relationships

Green spaces like public gardens have a long history of implicit and explicit exclusionary practices that have shaped our past and inform the present. However, these injustices must be countered as we move into the future. How do organizations begin the conversation and implement efforts that address the necessary change while maintaining positive and permanent momentum moving forward? It takes more than a statement of support or audience-specific programming. The work must start internally, be deliberate, and be continuous. In 2021, the United States Botanic Garden (USBG) committed resources to build its capacity to engage with historically underserved communities. This commitment resulted in a three-year community engagement strategy that championed a new path to welcome and engage the local community. With the completion of three-year community engagement strategy in 2025 this session will examine the program evolution from initial concept to present day, including challenges and successes related to staffing, communications, community engagement, and co-creating enriching programmatic experiences with residents and local organizations. Learning Outcomes: After attending this session, participants will leave with replicable actions to enhance understanding of community interests and priorities and co-creating enriching programs around the importance of plants to their everyday lives. Shared resources will include strategies to develop and sustain relationships with organizations such as: community centers, libraries, community gardens, local government agencies, and workforce development organizations.

NB_O_86

Central Asia Green Road Project: Building a Collaborative Future for Biodiversity Conservation in Central Asia

12th June 13:00-14:30

H.J. JEONG, J. JUNG, A.L. KIM, S.Y. JUNG, K.S. CHANG, H.-J. KIM, K. CHOI, and H.-Y. GIL*

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Keywords: biodiversity conservation, CABCN, capacity-building, Central Asia, conservation network, regional collaboration

The Central Asia green road project, initiated by the Korea National Arboretum in 2015, has significantly advanced regional collaboration for biodiversity conservation across Central Asia. A key achievement of this initiative is the establishment of the Central Asia Biodiversity Conservation Network (CABCN), which unites eight national organizations, including arboreta and botanical gardens, from participating countries (Uzbekistan, Kazakhstan, Kyrgyzstan and Tajikistan). Through the organization of nine international workshops, the network has provided a platform for knowledge exchange, capacity building, and collaborative research, thereby strengthening conservation efforts throughout the region. In addition to fostering inter-institutional partnerships, the project has implemented a comprehensive capacity-building program designed to enhance the research capabilities of early-career scientists in Central Asia. This program integrates hands-on training and collaborative research, equipping participants with essential skills in taxonomy, genetic analysis, and conservation practices. Key components, such as floristic surveys, biodiversity informatics workshops, and specialized taxonomy seminars, have not only stimulated scientific collaboration but have also led to joint publications that underscore the regional flora and the genetic diversity of target species. Currently, the project is entering on its third phase (2025–2029), featuring an advanced strategic framework and ongoing efforts to sustain both conservation and educational activities across national boundaries. This integrated approach aligns with the objectives of the Global Strategy for Plant Conservation (GSPC) and reinforces international conservation commitments. In conclusion, the Central Asia Green Road Project has played a crucial role in fostering regional collaboration, strengthening scientific capacity, and aligning local efforts with international strategies, thereby advancing biodiversity conservation in Central Asia.

NB_O_145

Operational Direction of the Regional Coexistence Project by the Korea Arboreta and Gardens Institute to Address Local Extinction

12th June 13:00-14:30

J.S. YI[1*], D.H. LEE[1], C.Y. JEON[1], S.H. JI[1], S.W. PARK[1], and K.C. KO[1]

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Keywords: Arboretum, Regional Coexistence, Local Extinction, Sustainable Development, Biodiversity Conservation

Korea Arboreta and Gardens Institute (KOAGI) and its affiliated Baekdudaegan National Arboretum (BDNA) are implementing a regional coexistence project to address the issue of local extinction. This initiative aims to revitalize the regional economy and promote community recovery by utilizing arboretum resources.

The Baekdudaegan National Arboretum (BDNA) collaborates with local residents to produce essential plants for the arboretum through contract farming. This approach enhances the income of local farmers and establishes a stable production base.

Additionally, to ensure the sustainable production of native Korean plants, BDNA has developed customized educational programs for local residents, enhancing their skills in plant cultivation and management. This initiative encourages active participation from the local community in the production of native plants.

Furthermore, BDNA, in collaboration with local residents and businesses, organizes the Bonghwa Native Plant Festival (Bongja Festival), utilizing locally cultivated plants. This festival contributes to job creation and tourism development, positively impacting the regional economy.

By developing region-specific programs, revitalizing the local economy, strengthening community cooperation, and conserving biodiversity, BDNA aims to build a sustainable regional society and create an environment where nature and people coexist harmoniously.

WS_45-2

Climate Change Action - What More Can We Do? Creating a Declaration of Intent to Address Climate Change Goals (Part Two of Two)

12th June 10:30-12:00

BGCI

Helen MILLER, Botanic Gardens Conservation International, UK – coordinator

Climate change presents a significant threat to plant conservation, a 2-3°C temperature rise could lead to half the world's plant species being threatened with extinction. And the impact to future generations and life as we know it, could also be catastrophic. Alongside the Kunming-Montreal Global Biodiversity Framework and United Nations Framework Convention on Climate Change, the UN Sustainable Development Goal 13: Climate Action (2030) is a key target for halting the climate crisis, but time is running out. We need urgent collective action and the ability to reach millions of people, to create more sustainable behaviours and ensure support for plant conservation.
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Botanic garden education and engagement programmes play a pivotal role in addressing climate change, raising awareness of and educating visitors on the impacts of climate change. But is there more that we could be doing? As neutral, safe spaces we often shy away from addressing difficult or political subjects, our programmes inform, but do they inspire audiences to take action? Can we as gardens play a bigger and more impactful role in the climate conversation?

Botanic gardens as a network welcome approx.. 1 billion visitors a year, highlighting the potential role that we have to deliver significant action for plant conservation and climate action.

In this 2-part workshop we will provide an overview of climate goals and the work that has been delivered to date by our sector. We will use a combination of discussions, world cafes and practical activities to develop a Declaration of Action, outlining the actions our network can take to deliver for plant conservation engagement towards Climate Action targets and identify training and resources to support our network in their commitment to achieving climate action goals. This Declaration, will be a pledge and a shopping list of actions/activities and used to demonstrate the collective power of our international botanic garden network in creating positive change. This Declaration will be presented to the United Nations in late 2025 at the UN Climate Change Conference (COP30).

In part one we will look at what we are already doing, how we categorise these types of activities and will develop initial ideas and opportunities.

In part two we will look at the opportunities identified in part one in more detail, considering barriers and support/resources needed, agreeing on a realistic but impactful set of actions/activities that will complete our Declaration of Intent. In addition, we will develop and agree on a pledge statement for the Declaration.

WS_46

Case Study: Development and Application of Arboretum Educational Program for the Implementation of the SDGs by Elementary School Students

12th June 10:30-12:00

Korea National Arboretum

Heeyoung RYU – Korea National Arboretum, Rep. of Korea

Minim CHO - Korea National Arboretum, Rep. of Korea

Gyesung LEE - Korea National Arboretum, Rep. of Korea

Korea National Arboretum was developing a youth arboretum education program to implement the SDGs. Specifically, the Goals are to empower youth to make desirable decisions and take action by viewing and experiencing the natural world from a sustainable development perspective on international issues such as climate change and biodiversity loss. To this end, the National Arboretum has developed an arboretum education program consisting of six sessions in a block time system for fifth and sixth-grade elementary school students to help them achieve SDG 13 and 15. Korea National Arboretum has provided learning opportunities for students in its main exhibit hall. The purpose of this workshop is as follows. First, I will explain the background and educational goals of the National Arboretum's sustainable development education program. Second, I will introduce the main activities of the developed education program and the contents of the education workbook. Third, participants will have experienced how this educational activity runs in an actual Arboretum.

WS_26

Sensitive Encounters: Healing and Caring for Biodiversity through Plant Connection and Timefulness

12th June 10:30-12:00

Meise Botanic Garden, Belgium. BGCI member.

Valerie CHARAVEL[1,2] coordinator.
E. Botte[1,2], M. Despiegelaere[1], L. Blommaert[1], J. Kleber[1], K. Es[1], J. Degreef[1,2] and S. Dessein[1]
[1]Meise Botanic Garden, Meise, Belgium;
[2]Service general de l'Enseignement superieur et de la Recherche scientifique, Federation Wallonie-Bruxelles, Belgium

Today's global challenges are enormous, affecting biodiversity, societies, and living conditions. This in turn affects our physical, mental, and emotional well-being.
In the techno-industrialized world, disconnection from nature, urbanization, digitalization, and a feeling of powerlessness in the face of events and decisions beyond our control, increase our anxiety and desensitization in a headlong flight.
Simply sharing devastating environmental data is no longer enough to catalyze change.

Instead, this workshop proposes addressing these challenges through embodied, emotional, and imaginative experiences. By reconnecting with the sensitive, we aim to restore our kinship within the Tree of Life, reawaken our sense of being Earthlings, and rediscover our purpose and well-being.

Botanic gardens provide unique and privileged spaces where the richness of biomes, the wondrous dance of the seasons, and the evolutionary history of Life are tangible and relatable. They are the ideal places to rediscover the art of wonder and to restore our sensitive intelligence. They bridge scientific knowledge and poetic imagination.

At Meise Botanic Garden, we offer 4 "wellness" workshops:
Poetic Botany, Sensory Workshop, Qi Gong, and Deep Time Walk.
Beyond scientific knowledge, they all involve and interweave:
- embodied mindfulness
- timefulness (present moment, seasons, Deep Time)
- envisioning positive futures
- emotions, imagination, poetics, and creative art
- porosity of internal/external "ecosystems"
- biophilia cultivation

Our methods include ecopsychology, deep ecology, art therapy, body health practices, …

The session will include:
- A brief introduction to the workshop.
- Hands-on experimentation with selected practices from our workshops.
- A concluding discussion to reflect on experiences and explore applications in participants' own contexts.

WS_16

Workshop on Botanical Initiatives Led by Youth

12th June 13:00-14:30

Korea Rural Network Co.,Ltd

Somin KIM, Korea Rural Nextwork. Gangwon, Korea

Teachers and students from Hwangdun Middle School, Korea

A workshop that empowers youth to actively participate as key stakeholders by sharing Korean case studies and international examples of botanical education, aimed at exploring effective strategies for integrating such programs into schools and enhancing student engagement.

Workshop Details

- Opening (5 minutes)
- Case Study 1: Botanic Garden education at Hwangdun Middle School in Korea – process, outcomes, and reflections from students and teachers (10 minutes)
- Case Study 2: Botanic garden education conducted at the Naples Botanical Garden (10 minutes)
- Hands-on Activity : Demonstration of an educational program from the Naples Botanical Gardens (30 minutes)
- Discussion & Q&A (30 minutes)
- Closing (5 minutes)

WS_51

Applying the Kunming-Montreal Global Biodiversity Framework (KMGBF) and Global Strategy for Plant Conservation (GSPC) to Your Education Activities

12th June 13:00-14:30

Botanic Gardens Conservation International
University of British Columbia (UBC) Botanic Garden

Helen MILLER, Botanic Gardens Conservation International, UK – coordinator

Tara MOREAU, UBC Botanic Garden

Interested in how your garden can advance policy-aligned programming and engage our communities in collective plant conservation? Join our workshop and learn about how botanic gardens can translate global goals into local teaching, learning and action. The Global Strategy for Plant Conservation (GSPC) was adopted by the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) in 2002. When first adopted it included 16 targets to be achieved by 2010. Now in its third iteration phase (2020-2030) the GSPC is aligned with the Kunming Montreal Global Biodiversity Framework (KMGBF) and includes 22 voluntary complementary actions. Communication, education, awareness and update of the KMGBF and GSPC is essential to protecting plants and botanic garden educators are critical to building momentum.

The Kunming-Montreal Global Biodiversity Framework (GBF) supports the achievement of the Sustainable Development Goals and sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050. Among the Framework's key elements are 4 goals for 2050 and 23 targets for 2030. The updated GSPC introduces a suite of complementary actions designed to operationalize the post-2020 KMGBF through enhanced plant-focused targets.
In this workshop we will provide an overview of the GSPC and how it aligns to the KMGBF. We will use practical, small group discussions to look at how each organisation's education activities are contributing towards these goals, identifying where the gaps are and providing a resource and methodology that participants can replicate within their own organisations post congress.

Gardens, Arboretums, and Communities Come Together

12th June 10:30-12:00

Korea National Arboretum

Miae JEONG, Korea National Arboretum, Seoul, Korea

Michelle PROVAZNIK, American Public Garden Association, USA

Tim UPSON, Royal Horticultural Society, UK

Gardens provide a place to socially bond and gather. Gardening can be an effective way to build community and strengthen relationships. In addition, gardens in an area can generate economic revenue if they attract tourists. In endangered areas, it can help revitalize the local economy. Most importantly, gardens can educate and promote environmental awareness. In the United States, gardens are regularly organized to educate residents about the benefits of gardens for the public and provide hands-on training in gardening. The United Kingdom has a garden culture promotion campaign that educates residents about the ecological characteristics of plants and uses this education to educate others. South Korea is in the first stage of creating gardens for education and community building. It is expected that garden creation will be expanded through the village garden project and that garden culture will gradually spread. This paper examines the cases of garden education and garden creation in the three countries and discusses the value of gardens in local communities in the future.

DAY 4

PS_20_1

Connecting Communities through Public Gardens

12th June 10:30-12:00

Michelle PROVAZNIK

American Public Gardens Association

Many public gardens began as private estates featuring the collections of avid plantsmen or women. As these gardens opened to visitors and new landscapes were intentionally built to be public gardens, their role in connecting people and plants evolved. Through their extensive plant collections and multi-faceted programs, today's public gardens are now connecting their communities in new ways.

People seek out gardens as places of respite, beauty, inspiration, and learning. They are places to connect to nature and each other. Through this presentation, we will explore the many ways public gardens are connecting with their communities.

PS_20_2

Case Study of Garden Promotion Campaign in UK

12th June 10:30-12:00

Tim UPSON

Royal Horticultural Society

The RHS was founded in 1802 with the purpose of promoting the Science, Art and Practice of Horticulture which remains its fundamental role to this day. Core activities have focused on its gardens and collections, training horticulturists and science programmes. As the role of the RHS has evolved, it has sought to reach out to schools, engaging with beginners in addition to keen gardeners, and reach out into communities to engage with the 30 million gardeners in the UK. This includes Britain in Bloom, a volunteer network under the umbrella of the RHS founded over 60 years ago and reaching out across the UK to green communities.

Our community programmes, engagement with beginners and those in urban areas has become central to our work and fully embedded in the current RHS strategy. We have community teams based in most of our gardens working locally, whilst national programmes, such as Britain in Bloom and the National Education Nature Park, aim to bring gardening and the study of nature into schools across England.

This lecture will review this wider work of the RHS but will primarily focus on the interaction between our community outreach and the RHS Gardens using RHS Bridgewater, our fifth and newest garden opened in May 2021, as a case study. Located within the City of Salford, part of the Greater Manchester conurbation in north-west England, it was the site of a grand Victorian estate, Worsley New Hall, and now located adjacent to mixed urban populations including areas of deprivation. It is now transformed with the original walled garden at its heart with beautiful and practical spaces to inspire, education and engage. A key part of the project from the early planning has been the community element and the opportunity to engage locally and bring community horticulture into the garden. A dedicated community allotment area provides spaces for groups to come and learn, mentored by garden staff. Another area is devoted to therapeutic horticulture providing an area for social prescribing working with the local health authority. Encouraging young people to consider a career in horticulture, the working wood provides an area aim for those not in work or education, whilst the green skills garden a dedicated space for work experience, learning new skills and we hope a stepping stone into training and a career in horticulture.

Whilst the whole garden provides a space for all, these dedicated spaces allow a mixed and vibrant community programme and brings this to the fore as part of any visit to RHS Bridgewater.

DAY 4

PS_20_3

Creating an Arboretum with the Local Community: The Resident Participation Model of Suwon Arboretum

12th June 10:30-12:00

Sunju KIM

Suwon Arboretum

This workshop explores how community engagement and resident participation have been realized throughout the establishment and operation of Suwon Arboretum, a brand name referring to two public arboreta owned and operated by Suwon Special City Government, and how these efforts have enabled the Arboretum to serve as a regional ecological and cultural hub.

As an urban ecological landmark, Suwon Arboretum is committed to achieving its vision of "an arboretum created together with residents" by actively collecting public opinions and operating a variety of participatory programs.

Key topics include:

- Operation of various channels to collect resident input, such as civic participation forums, communication boxes, and special lectures
- Development of diverse participatory programs, including resident gardener initiatives and school-linked field learning programs
- Case studies on green job creation and community collaboration
- The role of residents in arboretum management and operation as well as strategies for ensuring sustainability.

The Impact of Gardens on Communities

12th June 10:30-12:00

Miae JEONG

Korea National Arboretum

Gardens have a variety of functions and can play a role in improving the local environment. Text mining of gardens revealed that they have different functions in the public and private spheres. In the public sphere, they play a role in community revitalization, education, and economic revitalization. Based on the text mining results and literature study, four functions were derived. Based on the four functions (socio-cultural, economic, environmental, and health), it was applied to improve the local environment. Domestic environmental improvement projects utilizing gardens were conducted by local governments. There are examples of Seoul, where gardens played a role in improving the environment in areas lacking green space, and Gyeonggi Province, where gardens provided a place for socio-cultural gatherings of residents. In particular, the perception of gardens varies depending on whether they are managed by a government office or a local community organization.

We investigated the impact of local gardens created by the Forest Service to spread garden culture on local communities. We surveyed 759 visitors to seven local gardens as of 2023. The purpose and behavior of garden use were examined, and the value of the garden was surveyed. Visitors most often visit gardens to relieve stress and relax. The most common perceived functions of gardens were stress relief, peace, and healing.

As a result, gardens have multiple functions, and in the public realm, such as the community, they have a net function of increasing environmental quality, creating economic jobs, and restoring community.

PS_32

Cultivating Collaboration: Interdisciplinary Partnerships to Address the Horticultural Skills Gap

12th June 10:30-12:00

Royal Horticultural Society AND Bankside Open Spaces Trust

Charlotte GILSENAN: CEO Bankside Open Spaces Trust

Dr Suzanne MOSS: Director of Learning and Public Engagement, Royal Horticultural Society

Gemma TANDY: Head of Professional Programmes, Royal Horticultural Society

The Royal Horticultural Society (RHS) and Bankside Open Spaces Trust (BOST) have collaborated to address skills gaps and the lack of diversity in horticultural skills through the Future Gardeners and New Shoots programmes. Research shows that while horticulture contributes £38bn to the UK economy, businesses struggle to fill technical, specialist, and managerial roles, with 14% of these positions remaining vacant for over a year. This panel will explore the impacts and outcomes of these initiatives and those similar, discussing their impact on the horticultural community. The session will encourage a discussion of a range of partnerships, showcasing varied approaches to fostering inclusivity and skills development in the sector.

The Future Gardeners programme, initiated by BOST, provides practical horticultural training to individuals from diverse backgrounds, including the unemployed and career changers. By targeting underrepresented groups, Future Gardeners aims to create a more inclusive workforce through partnerships and accredited training.

Similarly, the RHS's New Shoots programme introduces diverse audiences to horticultural careers through educational workshops, taster sessions, and internship opportunities. New Shoots emphasises environmental stewardship and sustainable gardening practices, fostering improved skills and connection to nature.

Discussion points will include methodologies, challenges, and successes of interdisciplinary partnerships, offering insights into implementing similar initiatives to address current issues and skills gaps. The session will address the benefits and limitations of partnership working, and share insights into ways of working for enhanced impact. Join us for an engaging and informative session highlighting the benefits of partnership working in the horticultural sector.

DAY 4

PS_49

Art in the Garden: Fusing Art and Science

12th June 10:30-12:00

National Botanic Gardens of Ireland, Reykjavik Botanic Garden and University of Iceland

Coordinator: Felicity GAFFNEY, National Botanic Gardens of Ireland,
Bjork THORLEIFSDOTTIR, Reykjavik Botanic Garden,
Joseph Lynch, National Botanic Gardens of Ireland
Ásthildur JONSDOTTIR, University of Iceland

Join us for a lively panel discussion with Art educator Dr.Ásthildur Jónsdóttir University of Iceland, School of Education and Botanic Garden educators; Bjork Thorleifsdóttir, Reykjavik Botanic Garden, Felicity Gaffney and Joseph Lynch National Botanic Gardens of Ireland, exploring the myriad ways Art can be a useful tool in engaging and encouraging visitors to the gardens. Fusing art and science can be an incredibly useful tool in communicating plant science and a variety of important messages in line with the ethos and mission of the botanic garden.
Join the collaborative team of artists and botanic garden educators from Iceland and Ireland exploring how art has been used in the botanic gardens in such a variety of ways and find out about the Erasmus programme that facilitated the international project - Artists and Botanic Gardens - Creating and Developing Education Innovation. Many other projects will be highlighted during the discussion including how the Reykjavík Botanic Garden has collaborated with students of all ages from kindergarden to doctoral level to develop exhibitions at the garden where the focus is the connection between man and nature. 'Stories from the gardens' was a very successful artistic social history project based in the National Botanic Gardens of Ireland exploring the sense of place and the role the gardens played in the lives of the many contributors. Developing workshops which have relevance to historical heritage feast days and public holidays is another innovative way to reach visitors of all ages creatively.

PS_15

DAY 4

Digital Healing Gardens: Future Education in Botanical Gardens and Arboreta Using Advanced Technologies (KOAGI)

12th June 10:30-12:00

Korea Arboreta and Gardens Institute(KOAGI)

Korea Arboreta and Gardens Institute, Seoul, Korea

This workshop will explore the concept of Digital Healing Gardens and their potential applications in future botanical garden and arboretum education. The session will introduce innovative ways to integrate digital technologies into garden-based learning, enhancing visitor engagement and therapeutic experiences. Topics will include the definition and future utilization of digital healing gardens, the role of advanced technology in botanical education, and innovative educational approaches. Participants will engage in discussions on future strategies and share insights on integrating digital tools into plant education programs.

PS_15_1

Digital Healing Gardens: Future Education in Botanical Gardens and Arboreta Using Advanced Technologies

12th June 10:30-12:00

Jinsung PARK

Korea Arboretum And Gardens Institute

The Digital Healing Garden is a virtual or mixed reality space designed by combining the therapeutic elements of nature with digital technology, allowing users to interact with nature in immersive ways. Its primary goal is to enable socially disadvantaged individuals, such as those with limited mobility, to experience the benefits of a garden without needing to physically visit one. The Digital Healing Garden is a virtual or mixed reality space designed by combining the therapeutic elements of nature with digital technology, allowing users to interact with nature in immersive ways. Its primary goal is to enable socially disadvantaged individuals, such as those with limited mobility, to experience the benefits of a garden without needing to physically visit one. The Digital Healing Garden will contribute to the global spread of garden culture, making it more inclusive and accessible for people around the world.

PS_15_2

The Future of Botanical Garden Education with New Technologies

12th June 10:30-12:00

Buki JEOUN

Korea Arboretum And Gardens Institute

As the climate crisis and urbanization intensify, the disconnect between nature and humanity continues to grow. In this changing context, botanical gardens are emerging as vital spaces not only for exhibition but also for ecological education and emotional healing. This presentation proposes a future educational model that integrates emerging technologies to maximize the pedagogical functions of botanical gardens. Specifically, immersive content using transparent displays and virtual reality(VR) technologies visually conveys ecological characteristics and plant development processes, expanding learners' sensory experiences and enhancing both emotional engagement and learning outcomes. This presentation explores how such digital technologies can transform plant-based education into a dynamic and interactive experience, offering practical insights for educators, botanical garden administrators, and technology developers.

DAY 4

PS_7

Why Is Seoul Striving to Become a Garden City?

12th June 13:00-14:30

Garden-City Bureau, The Seoul Metropolitan Government

Youngmin KIM, University of Seoul, Korea

Hyemi YU, Director of Landscape Planning Division Garden-City Bureau, Seoul Metropolitan Government, Korea

Eunyeong PARK, Joongbu University, Korea

Sunmi KIM, Editor of Dong-A Ilbo, Korea

Based on the importance and necessity of 'garden healing' that helps modern people's mental health, this panel session to listen to presentations and discussions by experts on the value of gardens, including botanical gardens, in our time and the positive impact of activities in the gardens/botanical gardens on mental health.
In addition, it is also introduced that the main programs of the 'Seoul International Garden Show' and 'Garden City Seoul', which pursue happiness in everyday life with nature.

PS_7_1

The Value of Garden City, Seoul

12th June 13:00-14:30

Hyemi YU

Seoul Metropolitan Government

The Garden City Seoul project aims to reconnect fragmented green spaces throughout the city by creating pocket gardens and three-dimensional gardens, ensuring that every resident can access a garden within a five-minute walk.

This initiative seeks to integrate gardens into the fabric of everyday urban life, realizing the vision of "365 Days, Everywhere a Seoul Garden."

By expanding garden-based leisure programs, Seoul is promoting a broader transformation in urban lifestyles. In response to the challenges of rapid urbanization, growing individualism, and an aging population, gardens are increasingly recognized as one of the most effective strategies for enhancing urban well-being.

Seoul is working toward the realization of a "Five-Minute Garden City," where every citizen can experience healing, inspiration, and community connection in a nearby garden—ultimately demonstrating the transformative value of Garden City Seoul.

DAY 4

PS_7_2

The psychological effects of gardens on human health and well-being

12th June 13:00-14:30

Sunmi KIM

The Dong-A Ilbo

This presentation explores the therapeutic and mindfulness-promoting functions of gardens, focusing on their psychological and emotional benefits in contemporary life. Far beyond their ecological or ornamental roles, gardens serve as immersive sensory environments that nurture self-awareness, attentiveness, and inner peace. Through repetitive acts of care—planting, pruning, watering—individuals engage in meditative practices that foster reconnection with both the self and the natural world. In particular, gardens provide a vital retreat from the relentless noise and pace of modern society, helping to ease mental agitation and restore emotional balance.

Such experiences are closely linked to psychological healing processes, including emotional regulation, memory restoration, and the mourning of loss. As spaces of reflection, gardens support not only the processing of emotions but also the retrieval of forgotten or repressed memories. They become sites of quiet ritual and gentle transformation. The symbolic act of tending a garden—investing time, attention, and care into a living system—mirrors the nurturing of one's own inner life. This analogy highlights a profound, often overlooked connection between horticultural practice and mental well-being.

In an era of escalating stress, ecological anxiety, and digital fatigue, the garden emerges as both a sanctuary and a practice—one that cultivates mindfulness, resilience, and a grounded presence. This presentation argues for the renewed relevance of gardens in promoting psychological health, proposing that they be understood not only as physical spaces but as living, ethical environments of care.

PS_7_3

Why Does Seoul Aspire to Become a Garden City? Aging Society and Garden Healing

12th June 13:00-14:30

Eun-yeong, PARK

Joongbu University

Seoul is emphasizing the therapeutic value of gardens in response to an aging society, seeking pathways to develop as a garden city. This presentation explores the significance of garden healing in an aging urban environment and examines Seoul's garden policies.

Garden healing encompasses various elements that enhance physical health, mental well-being, and cognitive function, playing a critical role in improving the quality of life for older adults. As the elderly population grows, gardens serve as essential spaces that encourage physical activity while helping prevent and alleviate conditions such as depression, anxiety, and dementia.

As a densely populated city, Seoul faces a pressing need to expand green spaces. Its vision of becoming a garden city is not merely about increasing greenery but rather about fostering mental well-being and strengthening social connections through gardens. Furthermore, garden healing and garden prescriptions are gaining recognition as significant social welfare policies that provide a new form of healthcare support for aging populations.

This presentation will introduce key initiatives, including Seoul's garden prescription programs and community gardening projects for vulnerable populations, demonstrating how the city's efforts contribute to the well-being of the elderly and advance the concept of a garden-based urban future.

PS_18

Youth Citizen Science Program for Climate Change Impact Assessment

12th June 13:00-14:30

Korea National Arboretum (KNA)

1) H.O. BUENVENIDA, Capiz State University, Philippines

2) Sayee GIRDHARI, Season Watch, India

3) Donghak KIM, Korea National Arboretum, Korea

4) Wonseop KIM, Donga Science, Korea

5) Yoori CHO, Seoul National University, Korea

The Citizen Science Program Sharing Panel session is designed to bring together experts, educators, and citizen scientists from arboreta, botanical gardens, universities, and civic organizations to discuss and exchange insights on climate change-related citizen science initiatives. This session will highlight ongoing efforts to engage the public—particularly youth—in monitoring and assessing the impacts of climate change through scientific observation and community participation.

One of the primary goals of this session is to foster international collaboration by sharing case studies from various countries, including the Philippines, India and Korea. These presentations will provide a comparative perspective on how different regions are utilizing citizen science to collect and analyze climate data, emphasizing the role of public engagement in climate research.

The session will also explore practical strategies for expanding youth participation in citizen science programs. A notable example is the “Cherry Blossom Ending Project”, a citizen science initiative where young participants and families documented cherry blossom blooming patterns to track climate change indicators. By showcasing this project and similar efforts, the session will highlight the educational and scientific value of engaging youth in long-term climate monitoring.

Through a combination of presentations, case studies, and discussions, this session aims to strengthen collaborative networks, enhance public awareness of climate change, and inspire future generations to take an active role in environmental science.

PS_18_1

Citizen Science in Climate Change Education: SeasonWatch, a Case Study from India

12th June 13:00-14:30

Sayee GIRDHARI[1,*]
Geetha RAMASWAMI[1], Swati SIDHU[1], Nizar M[1], Suhirtha MUHIL[1],

Nature Conservation Foundation

Citizen science has been a powerful approach for documenting biodiversity worldwide. It is also applicable for monitoring tree phenology across a large geographical area, which can contribute to our understanding of the ecological impacts of climate change over space and time.

SeasonWatch, a citizen science and climate change awareness program in India, illustrates this approach. The program engages children, undergraduate students and nature enthusiasts through age-appropriate and regionally contextualised resources, in the study of changing biodiversity and the environment, especially through the systematic observation of tree phenology. With over 840,000 observations on 171 widespread tree species, this volunteer-contributed dataset is one of the largest on tree phenology from India. This data has helped understand correlations between the environment and the flowering and fruiting behaviour of common, culturally beloved tropical tree species. Additionally, through immersive tree walks, interactive workshops, and intensive training sessions, SeasonWatch has enhanced people's connection with trees and public awareness of climate change.

Citizen Science, Arboretums, Mangrove Ecoparks, and Whatnots: Reimagining Science Education Through Nature and Community

12th June 13:00-14:30

H.O. BUENVENIDA

M.D. DUMAPIG[1], C.F. GICANA[1], J.D. DE PABLO[1], and F.L.LABORTE[1]

[1] Capiz State University- Pontevedra Campus

potential of these natural realia in the context of community-based science education in the Philippines. Using a qualitative inquiry approach, the research examines two arboretums and two mangrove ecoparks frequently visited by students and the public. It investigates how these ecological sites facilitate active learning, shape environmental values, and enhance science teaching and learning.

Science teachers play a crucial role in maximizing the educational benefits of these spaces, but equally significant is the contribution of local community members who manage and maintain them. Findings reveal that learners exhibit positive perceptions of these outdoor learning environments, demonstrating increased engagement and deeper understanding of ecological systems. More importantly, experiential learning in these settings promotes environmental ethics, moral responsibility, and sensitivity to conservation issues. Students not only acquire scientific knowledge but also develop a stronger connection with nature, leading to transformative changes in their attitudes toward sustainability and climate change.

Arboretums and mangrove ecoparks function as informal yet powerful educational platforms that bridge theoretical knowledge with real-world ecological interactions. They offer accessible, immersive experiences that encourage ecosystem-centered perspectives rather than human-centered exploitation of natural resources. The proximity of these green spaces to urban areas further strengthens their role in environmental education, making them ideal settings for fostering nature-friendly values in both students and the general public.

This study underscores the critical importance of integrating community-based natural learning environments into science education. By leveraging citizen science approaches and local ecological sites, educators can cultivate a deeper environmental consciousness, ensuring that learning extends beyond the classroom and into real-world sustainability practices.

Monitoring Plant Phenology in Response to Climate Change and Expanding Citizen Participation - A Case Study of the Korea National Arboretum

12th June 13:00-14:30

Donghak KIM[1,*]
Wonseop KIM[2] and Seunghwan OH[3]

[1] Korea National Arboretum / [2] Donga Science / [3] Kyungpook National University

In recent years, climate change has significantly affected the growth cycles of plants. Long-term monitoring and analysis of these changes are essential for understanding ecosystem dynamics and establishing effective response strategies. Since 2009, the Korea National Arboretum (KNA) has collaborated with national and public arboreta across the country to monitor the phenological changes of climate indicator plant species. To ensure consistency in observations, KNA published the Plant Phenology Monitoring Manual and analyzed over a decade of data, confirming that phenological events in Korean forests are occurring earlier, indicating a shift in the ecological calendar. Based on its plant phenology observation program, KNA is actively promoting the participation of citizen scientists. One of its flagship initiatives, the Cherry Blossom Ending Project, encourages the public to observe and record cherry blossom flowering times. By leveraging social media and digital platforms, this project lowers the barrier to participation and enhances both accessibility and usability of observational data. In addition, KNA facilitates on-site citizen monitoring activities at arboreta to raise public awareness of climate change and promote science-based environmental action.

KNA also runs plant phenology education and participation programs targeting university students. Through partnerships with universities, phenology monitoring is integrated into both regular curricula and extracurricular activities. For younger audiences, including middle and high school students, seasonal observation workbooks and hands-on field education programs are being developed to foster ecological and climate sensitivity. These efforts aim to equip future generations with the knowledge and practical capacity to understand and respond to environmental challenges through a scientific lens.

This presentation will introduce the Korea National Arboretum's plant phenology monitoring efforts, including the development of observation standards and key findings. It will also highlight strategies for expanding engagement through citizen science and youth participation programs, and propose future directions for broader implementation.

PS_18_4

Case Study of a 12-year Citizen Science Project in South Korea (Earth Loving Explorers)

12th June 13:00-14:30

Yeeun KIM[1,*]
Wonsup KIM[1], Sewon CHUN[1], Juhye KIM[1], Yikweon JANG[2]

[1] Donga Science/ [2] Ewha Womans University (Division of Ecoscience)

Increasing participation and engagement is a challenge faced by many citizen science projects. This presentation aims to introduce how one project motivated several thousand participants and produced tangible results through collaborative efforts.
Earth Loving Explorers, a citizen science project in South Korea, was initiated through Kids Science Donga, a children's science magazine, in 2012 to investigate the distribution of an endangered treefrog species in Korea. Over the past 10 years, the project has expanded to include various research initiatives on different species, resulting in the publication of eight research papers and engaging nearly 3,500 participants annually.
This project is unique in that it requires each participating team to consist of at least one child and one parent or guardian, with educational sessions provided by researchers. Working as a child–adult team made it possible to teach more complex concepts and allowed teams to collect more data throughout the year.
Over time, the project has collaborated not only with individual researchers but also with organizations such as the Korea National Arboretum (KNA). With KNA, the "Cherry Blossom Ending" project monitored the flowering time and duration of cherry blossom trees to understand the effects of climate change.
This presentation will highlight the efforts of the Earth Loving Explorers project and its positive impact on participants, while showcasing the outcomes of these collaborative citizen science initiatives.

DAY 4

PS_18_5

Observing and Responding to Climate Change through Public Participation: The Role of Citizen Science and Digital Herbarium Projects

12th June 13:00-14:30

Yoori CHO[1,*]
Sujong JEONG[1,2]

[1] Climate Tech Center, Seoul National University

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Effective climate change response requires active participation beyond experts and policymakers; it must include citizens who observe, record, and act based on environmental changes. Citizen science offers a powerful framework through which ordinary individuals can monitor local ecosystems, collect long-term data, and deepen their scientific understanding of climate change. This presentation explores various citizen-led initiatives, including the monitoring of plant phenology, species distribution, and shifts in seasonal patterns, as key indicators of climate change. In particular, the presentation highlights the role of "digital herbarium" projects, where citizens contribute by digitizing historical plant specimens preserved in botanical collections. Through scanning, metadata generation, and database building, citizens help reconstruct long-term biological records that are critical for comparing past and present ecological conditions. These digital archives serve as valuable resources for detecting climate-driven changes over decades or even centuries.

By illustrating how citizen-led observation, documentation, and analysis can enhance climate resilience, scientific communication, and policy engagement, this session emphasizes the growing potential of citizen science as a cornerstone for collective climate action and suggests pathways for its sustainable development.

the efforts of the Earth Loving Explorers project and its positive impact on participants, while showcasing the outcomes of these collaborative citizen science initiatives.

PS_48

The Development and Acceptance of Knowledge and Information of Korean Traditional Garden Plants

12th June 13:00-14:30

KOREA HERITAGE SERVICE

Hyunsil SHIN, Woosuk University, Wanju, Korea

Yeongho CHOI, Korea Heritage Service, Daejeon, Korea

I would like to examine the characteristics and factors of the development of knowledge and information about traditional Korean garden plants by analyzing books on gardens and flowers compiled during the Joseon Dynasty. Scholars of the Joseon Dynasty have accumulated garden-related knowledge along with the development of Silhak, and through exchanges between various schools, they can understand the characteristics of plants, cultivation methods, management methods, and garden creation, as well as the transmission and education of future garden-related expertise.

Through this process, traditional knowledge of the use of plants in traditional gardens can be proven, and the authenticity of traditional gardens can be secured and their characteristics can be emphasized by inheriting the method of using plants in the Joseon Dynasty when creating actual traditional gardens.

DAY 4

PS_50

ASEAN-ROK International Garden with ASEAN Cooperation Plan

12th June 13:00-14:30

Korea Forest Service(Arboretum and Garden Policy Division)

Sunghwan KIM, Korea Forest Service, Seoul, Korea

ShinGu KANG, Korea Arboreta And Gardens Institute

The proposal to establish the ASEAN-ROK Garden *tentative title originated as a follow-up initiative to the 2019 ASEAN-ROK Commemorative Summit (Nov, Busan) and the High-Level Meeting on Forestry 2019 (Oct, Seoul), After that, facilities and budget plans for the establishment of ASEAN Korean gardens were established. This workshop will discuss ways to utilize ASEAN Korean gardens, expected roles, and programs

PS_33

Growing Together: Cultivating Diversity in Horticultural Careers

12th June 13:00-14:30

Royal Horticultural Society AND Bankside Open Spaces Trust

Charlotte GILSENAN: CEO Bankside Open Spaces Trust

Dr Suzanne MOSS: Director of Learning and Public Engagement, Royal Horticultural Society

Gemma TANDY: Head of Professional Programmes, Royal Horticultural Society

Bankside Open Spaces Trust (BOST) and the Royal Horticultural Society (RHS) have collaborated to address socio-economic, cultural, and physical barriers preventing marginalized communities from accessing gardens and educational programs. Despite strong neurodiversity (up to 70%) and LGBTQ+ diversity (up to 12%) in horticultural training, ethnic and cultural diversity remains low, with only 1.4% representation in an industry where 14% of the UK population identifies as non-white. This panel session will invite discussion of the barriers to diversity in the horticultural sector, and will encourage sharing of potential solutions, and approaches contributors have found most effective.

The Future Gardeners programme, initiated by BOST, provides practical horticultural training to individuals from diverse backgrounds, addressing skills gaps and high unemployment rates across London. The programme has supported over 300 unemployed participants, with 80% securing employment or further training.

The RHS's New Shoots programme aims to improve diversity within the horticultural sector by enhancing career perceptions and removing barriers. It inspires new horticulturists through access assistance, taster days, and flexible learning opportunities.

The collaboration of these two programmes has been instrumental in removing participation barriers, but they are always looking to improve. The session will include case studies from these programmes and others, including learnings and successes. It will also provide practical applications for delegates to apply to their inclusion initiatives, including addressing communication barriers, partnership considerations, working with diverse groups, resourcing, and continual learning. Join us for a dynamic discussion of how we can improve diversity across all our programmes.

PROGRAMME

POSTER ABSTRACT

The 11th INTERNATIONAL CONGRESS
ON EDUCATION IN BOTANIC GARDENS

POSTER ABSTRACT

HW_P_7

Insect Pest and Tree Disease Monitoring at the Saemangeum National Arboretum Development Site

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Keywords: insect pest, tree disease, Saemangeum National Arboretum

This study was conducted to maintain the vitality and secure ecological stability of the trees planted in the Saemangeum National Arboretum. The study identified the occurrence period and host plants of major insect pests, and occurrence of tree diseases from June to October 2024, and analyzed the damage characteristics of each insect pests and tree diseases. As a result of monitoring, it was confirmed that the Hyphantria cunea, Mimela testaceipes, Tuberocephalus(Trichosiphoniella) sakurae, Monema flavescen, and Eligma narcissus were the major pests causing damage in the planned tree, and each pest showed different damage patterns depending on the host plant and time. The period with the greatest pest damage was June and July, when H. cunea, M. testaceipes, T. sakurae, and M. flavescen appeared at the same time. The most common tree disease was leaf spot disease, and it was confirmed that physiological disorders included chlorosis and leaf dieback. The trees most damaged by insect pests and tree diseases were cherry trees and willow trees. This study was able to identify the occurrence patterns of insect pests and tree diseases in the Saemangeum National Arboretum development site, and it can be used for manager training for stable maintenance and management of the arboretum in the future.

POSTER ABSTRACT

HW_P_12

Metabolite Profiling Using Uhplc-Hrms and Antioxidant Activity of Pogostemon cablin Benth. Extract from Different Location

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Keywords: antioxidant, Pogostemon cablin, profiling metabolit.

Pogostemon cablin Benth. or patchouli is a tropical plant that produces essential oils as raw materials for therapeutic oils for topical treatment and perfume, known as patchouli oil. It is known that several compounds, such as patchoulol, have antidepressant and antioxidant activity. The presence of metabolites in patchouli plays an important role in causing biological activity so that the composition and concentration level will affect the level of activity. To maintain the quality of patchouli, quality control is needed starting from the provision of raw materials to the production of extract or medicated oil. This study succeeded in profiling metabolite of P. cablin leaf extracts from three locations in Indonesia (Sukabumi, West Sumatra, and Aceh) using UHPLC-HRMS. The metabolite profile of patchouli leaf extract was successfully identified with 38 compounds with the flavonoid compound group; organic acids; phenylethanol; sesquiterpenes; and alkaloids. Principal component analysis (PCA) score plot can clearly differentiate patchouli based on its growing location, which shows that there are differences in metabolites in patchouli. The antioxidant potential of patchouli leaf extract was shown to be 13.57-52.75 mg equivalent Trolox/g extract with the DPPH method and 51.49-93.47 mg equivalent Trolox/g extract with the FRAP method. P. cablin from Sukabumi showed the highest antioxidant potential. Metabolite profiles were able to distinguish P. calbin from various locations and their biological activities.

POSTER ABSTRACT

HW_P_18

POSTER ABSTRACT

The Potential Inhibitory Mechanism of Egcg Against the Chikungunya Virus Targeting Non-Structural Protein 2 through Molecular Dynamics Simulation

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Keywords: anti-chikungunya virus, EGCG, Indonesian herbal compounds, molecular dynamic, nsP2 protease

This study explores the potential of Indonesian herbal compounds against the chikungunya virus (CHIKV), which causes widespread illness without a specific cure known as chikungunya fever (CHIKF). By focusing on the nsP2 protein, crucial for the virus's replication, the research utilizes computational methods identifying inhibitor compounds with high binding affinity. These promising candidates are further analyzed through 1 μs of molecular dynamic (MD) simulation studies, aiming to find effective inhibitors to control the chikungunya spread, leveraging Indonesia's rich biodiversity for novel anti-CHIKV therapies. The results of our study highlight the molecular mechanism of the potential of epigallocatechin 3-O-gallate (EGCG) from Camelia sinensis in inhibiting nsP2 protease by binding to essential catalytic residues and exploring more energetically favorable orientations within the catalytic pocket. This dynamic binding process suggests that EGCG may disrupt the protease's catalytic functions, potentially altering domain interactions without compromising the protein's overall structure. Given nsP2's minimal homology with human proteins, the risk of cross-reactivity is reduced, making it a suitable target for CHIKV therapy. This study suggests EGCG as a prime candidate for further development as a broad-spectrum inhibitor against CHIKF.

POSTER ABSTRACT

HW_P_26

Understanding of Suitable Tree Species for Planting in Saemangeum Region Based on Different Soil Composition

J.H. SONG[1,*], J.Y. HA[1], H.Y. KIM[2], M.G. KO[2], and J.S. PARK [1]

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Keywords: Saemangeum, Arboretum, reclaimed land, planting base, soil composition

This study was carried out to investigate suitable plant species for planting in development site of National Saemangeum Arboretum, where has been changing from ocean floor to reclaimed land slowly. Fieldwork was conducted every year from 2020 to 2024. For utilizing to construction of National Saemangeum Arboretum, we divided the composition of planting base into three groups - field soil 100%(A), field soil 50%: outside soil 50%(B), field soil 50%: dredged soil 50%(C). After growth measurement of 103 species for four years, most suitable soil composition was 'B(field soil 50%: outside soil 50%)', which means we have to brought soil from outside at least 50% of total soil amount for planting in Saemangeum region. Root collar diameter of Melia azedarach L., Albizia julibrissin Durazz., and Styphnolobium japonicum (L.) Schott in B were higher than A or C soil. Average radical scavenging activity of Gleditsia japonica Miq. was 75.7%, followed by Pinus thunbergii Parl.(70.2%), Melia azedarach L.(68.0%), and Albizia julibrissin Durazz.(63.1%) although there are no difference was found as affected by soil composition. Average proline concentration of Pinus thunbergii Parl. was lowest (0.24μg/mL) among observed plant species, which means it was not sensitive against stress. We need to conduct growth monitoring continuously, and accumulated researches of growth changes in reclaimed area help us understanding of suitable tree species for planting under climate change in Saemangeum region.

POSTER ABSTRACT

HW_P_28

Education for Tackling the Illegal Plant Trade

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Keywords: Forest, Happiness, Healing, Plants, Seoul Grand Park

Since 2015, Seoul Grand Park has been operating a Forest Healing Program designed to help participants restore their physical and mental well-being through meaningful interactions with plants. Participants can enjoy a special experience, surrounded by lush forests, fresh air, warm sunlight, and the calming presence of nature.

The Gift of the Forest, Forest Healing

- Forest healing involves activities designed to enhance immunity and restore physical and mental health by engaging with natural forest elements such as phytoncides, negative air ions, sunlight, forest trails, and plants.

What Makes Seoul Grand Park's Program Special?

- Healing Forest: Features a lush, carefully preserved forest spanning 500,000㎡ that remained untouched and restricted to the public for over 30 years.
- Year-round Access: Available throughout all four seasons, offering continuous opportunities for healing.
- Tailored Programs: Specifically designed for diverse groups, including adults, menopausal women, and individuals with disabilities.
- Convenient Location: Easily accessible via public transportation, ensuring comfortable and effortless visits.

Program Details

(1) Forest Programs (April–November)

- Healing Forest (120 min): Designed for employee groups; includes stretching, herbal foot baths, and more.
- Happiness Forest (120 min): Tailored for individuals with disabilities; features singing bowl meditation, plant aroma experiences, and more.

(2) Indoor Programs (Year-round)

- Happy Dream (90 min): For women experiencing menopause; incorporates medicinal plant therapies, stretching, herbal foot baths, and more.
- Relaxing Dream (90 min): Open to all adults; includes singing bowl meditation, flower tea tasting, and more.

How to Participate?

- Programs are available by reservation only.
- Book your session via the Seoul City Public Service Reservation System: http://yeyak.seoul.go.kr

Experience true relaxation in nature with Seoul Grand Park's Forest Healing Programs.

POSTER ABSTRACT

HW_P_29

Patterns of Variation in Viburnum carlesii (Adoxaceae) Inferred from GBS and Morphology

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Keywords: Horticultural plants, Genotyping-by-sequencing (GBS), SNP, Morphological variation, Genetic differentiation

Viburnum L. (Adoxaceae) is a genus consisting of approximately 163 species of shrubs and small trees and known for their showy inflorescences and fruits. This genus is highly valued in horticulture due to its ability to select individuals with excellent traits and the successful development of hybrid cultivars. The V. carlesii species is found in low hills of central and southern Korea and the western part of Japan, exhibiting wide range of morphological variation. However, the identity of the recognized varieties remains unclear, leading to taxonomic confusion. To investigate the morphological variation and genetic differentiation patterns, we investigated 14 populations of V. carlesii, using 11 morphological traits and 77,462 SNP loci obtained form the GBS method. The results of our analyses show that there are two genetically and morphologically distinct groups: (1) a group found in the inland regions of the Korean Peninsula (V. carlesii var. bitchiuense), and (2) a group found along the western coast of Korea, Ulleung Island, and Tsushima Island in Japan (V. carlesii var. carlesii). Interestingly, the Samcheok and Ulsan populations, located near the East Sea, exhibited intermediate characteristics of the two varieties, suggesting the possibility of hybridization. Further research, including the samples of the inland Japanese population, particularly the holotype locality of V. carlesii var. bitchiuense, and V × juddii an artificial hybrid between the two varieties, will be needed to establish clear taxonomic species boundaries within V. carlesii and to understand the evolution of biogeography.

POSTER ABSTRACT

HW_P_31

Development of a Healing Camp Program for Environmental Victims Based on Arboretum Activities: A Case Study of Chollipo Arboretum

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Keywords: healing factors, emotional(psychological), physical, Quality of Life

Chollipo Arboretum, designated as the Chungcheongnam-do Regional Environmental Education Center in 2019, offers environmental education programs reflecting Regional Characteristics.

As health concerns relatd to environmental issues continue to rise, the arboretum has developed and implemented programs aimed at improving both physical and mental well-being through nature-based activities. Since 2022, a two-day healing camp has been conducted for asbestos mine victims, and in 2024, a new program was introduced for residents living near coal-fired power plants.

Given the aging demographic of participants, the program emphasizes light physical activities and natural mobility enhancement through immersive nature experiences. Continuous improvements have been made based on participant feedback, with satisfaction rates exceeding 98%, demonstrating significant benefits in both physical and emotional stability.

Recognized as an effective model for recovery and environmental education, this program was awarded the Grand Prize at the 2024 Arboretum and Botanical Garden Best Program Competition. Future developments will integrate sensory healing experiences with horticultural activities, further promoting physical and emotional well-being while fostering a deeper understanding of ecological and environmental values. Chollipo Arboretum remains committed to advancing its programs, driving innovation in environmental and ecological education.

POSTER ABSTRACT

HW_P_32

POSTER ABSTRACT

Effects of Enjoying Green Spaces on Mental Health, Ecological Sensitivity, Nature Connectedness, and Pro-Environmental Behavior

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Keywords: enjoyment of green space, plant cultivation, leisure, ecological sensitivity, nature connectedness

Nature experiences can contribute to the health and well-being of young adults. Also, nature experience influence the development of nature connectedness and enhance pro-environmental attitudes. Then, nature experiences related to plants may affect the later development of nature connectedness. How does the experience related to plants among the nature experiences relate to the mental health, nature connectedness, ecological sensitivity, and pro-environmental attitude of young adults? We divided nature experiences into plant cultivation, green space enjoyment, and leisure. The purpose of the study is to investigate the relationship between the three types of nature experiences and Mental Health (MH), Nature Connectedness (NC), Ecological Sensitivity (ES) and Conservation Action Intention (CAI) and to find out the effects of the plant experiences on these factors. With online survey responses from 224 students of a South Korean university, the analyses were conducted using SPSS. The results of the correlation analysis showed that all three types of experiences had a significant relationship with MH, NC, ES, and CAI. However, the enjoyment of green space showed somewhat higher correlation than other experiences. As a result of regression analysis, leisure experience was found to be the variable with the highest explanatory power for emotional well-being, but for all other variables, the enjoyment of green spaces was identified as the most significant explanatory variable. These results imply that personal happiness, ecological sensitivity, and connection with nature can be cultivated as efforts to enjoy and appreciate themselves increase rather than the experiences of utilizing plants or nature, and further lead to attempts to protect the environment.

POSTER ABSTRACT

HW_P_50

Activities of the JABG Education and Promotion Committee

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Keywords: activity support, botanical gardens in Japan, collaboration in botanical gardens, JABG, promoting cooperation, public awareness

The Japan Association of Botanical Gardens (JABG) promotes research and education on botanical gardens, plants, and the conservation of plant diversity, with approximately 120 organizations currently as members. JABG's Education and Promotion Committee is involved in various educational activities with the following aims: training educational staff, supporting educational activities, and promoting public awareness of member gardens. The committee organizes annual workshops for garden staff on various educational topics. In 2023, during a TV drama featuring Dr. Tomitaro Makino, a renowned Japanese botanist, the committee provided exhibition panel data and related materials to member gardens. A total of 41 gardens participated, hosting exhibitions based on this data. Additionally, the committee promotes outreach through social media and produces YouTube video tours that introduce botanical gardens across Japan, featuring themes based on seasons and social topics. These activities aim to promote cooperation between botanical gardens, progress educational activities, and raise awareness of the role and importance of botanical gardens throughout Japan.

POSTER ABSTRACT

HW_P_77

The Role of Botanic Gardens in Public Awareness about Plant Conservation

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Keywords: Biodiversity, botanic gardens, conservation awareness, public engagement, plant diversity, education

Botanic gardens play a crucial role in promoting public understanding of plant conservation, bringing together scientific research and community participation in response to the growing threat of biodiversity loss. These living museums, home to more than 30% of the world's plant species, serve as distinct educational platforms to inform visitors about the necessity of conserving plant biodiversity in the face of challenges such as habitat loss, climate change, and invasive species. Endangered species are showcased, sustainable practices are demonstrated, and the ecological and cultural importance of plants is emphasized through botanic gardens' interpretive displays, guided tours, and interactive exhibits. Research suggests that experiential learning has a substantial positive impact on public awareness and endorsement of conservation projects (e.g., Wyse Jackson & Sutherland, 2000). Establishments such as Kew Gardens and the Missouri Botanical Garden run citizen science initiatives, involving visitors in seed storage and habitat revitalization, thereby converting passive observation into active involvement. Digital outreach efforts, encompassing social media, virtual tours, and online databases, are broadening their scope of engagement, as evidenced by the Royal Botanic Garden Edinburgh's enhanced public interaction during global campaigns, such as updates to the IUCN's Red List. Studies indicate that individuals exposed to conservation messages display a greater inclination to adopt environmentally friendly actions like minimizing water consumption or backing reforestation efforts (Primack et al., 2019). Despite progress, ongoing challenges remain, such as insufficient funding and the requirement to broaden audience diversity to better represent a wider range of demographics. Botanic gardens foster emotional connections by combining scientific data with narrative examples, such as stories of the extinct Sophora toromiro or the resilient Welwitschia mirabilis, which surpass the impact of statistics alone. Botanic gardens are powerful advocates for plant conservation, thanks to the synergy between education, participation, and inspiration, which boosts public awareness and incites action. As biodiversity decreases, their part in promoting a society that values conservation grows more vital, guaranteeing the survival of plants for the benefit of future generations.

POSTER ABSTRACT

HW_P_112

Shedding the Very First Light on the Pollination of Glochidion chodoense (Euphorbiaceae), a Korean Endemic Species in Jindo island, South Korea

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Keywords: Glochidion chodoense, endemic plant, Epicephala, pollinator, obligate mutualism, seed predation

The present study is to make the very first report on the pollination of Glochidion chodoense J.S.Lee & H.T.Im, which is a Korean endemic species only inhabiting on Jindo and Jodo Islands, South Korea. The plant bears female and male flowers blooming continuously from May to October, and the fruits become mature between September and October. The preliminary result revealed that the plant has obligate mutualism with a very specific pollinator, namely Epicephala obovatella of Gracillariidae. Female moth carries mature pollens on the proboscis from male flowers to female flowers at night; it puts the proboscis, where the pollens were attached, into a female flower and deposited the pollens on the stigma. However, the moth does not simply deliver 'the service'. Right after the pollination, it oviposits one or two eggs near the ovules developing inside the flowers, and the larvae grow inside consuming one or two ovules. E. obovatella appears to be multivoltine, continuously occurring throughout the blooming season of G. chodoense. Lastly, a brief diagnosis of the moth is provided for identification along with images of adult and genitalia.

POSTER ABSTRACT

HW_P_122

Valuable Botanic Garden Concept: 5 Key Principles

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Keywords: children, educational programs, key principles, well-being

Changes in the world, a focus on the future, environmental anxiety, disconnection from the natural world. These are just some potentially stress-inducing factors affecting one's mental and subsequently physical health. The question "How to take care of our mental health?" has become a pressing issue. What kind of life do we want to have now and for future generations?

The botanic garden is a socially important institution with an immense potential to target numerous groups of people, adults as well as the more sensitive children and youth, threatened by the modern epidemic of stress. Based on experience with children's educational activities, and given the positive effect of contact with nature on mental health, a new concept for botanic garden educational programs has been developed. Guided by the idea of a valuable garden supporting the well-being of child visitors, we defined 5 key principles of the new concept. We designed a connected portfolio of new educational programs supporting mindfulness, emotional well-being, and stress reduction.

The first principle –"Meet" – mediated the experience of the garden's biodiversity through close contact with nature. The "Notice" principle supported the development of mindfulness through observation and exploration. Natural learning through play became the basis of the "Play" principle. The applied "Smell, taste, touch" principle developed a multisensory perception of nature, and the "Experience" principle gave all program participants the possibility of a common experience.

We are convinced that the newly designed programs, through close interaction with nature, have helped children to work with their own emotions and to get the important feeling that the world is a safe place to live, and nature is an important part of it.

POSTER ABSTRACT

HW_P_148

Connecting People to Native Flora: Sustainable Electric Bus Tours at Sejong National Arboretum

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Keywords: Native plant education, Electric bus tour, Plant interpretation

Sejong National Arboretum operates a sustainable tour program using electric buses within the arboretum. This program combines native plant interpretation with an electric bus tour, allowing participants to observe various Iris species, which are both native to Korea and representative plants of Sejong National Arboretum. Through these guided interpretations, participants learn about the importance of habitat conservation and biodiversity.

POSTER ABSTRACT

HW_P_149

Establishment of the Economic Valuation Framework for Arboretums and the Economic Value of the Sejong National Arboretum

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Keywords: Arboretum, Total Economic Value (TEV), Economic Spillover Effect, Non-Market Valuation, Contingent Valuation Method (CVM), Sejong National Arboretum

Arboretums play a critical role in biodiversity conservation, climate change mitigation, environmental education, and recreational services. However, their economic value has traditionally been assessed within a limited framework, failing to incorporate the full spectrum of social, environmental, and economic benefits. This study establishes a Total Economic Value (TEV) assessment framework for arboretums, with a specific focus on the Sejong National Arboretum, and provides policy recommendations based on empirical findings. This study employs a TEV-based methodology to evaluate use values (direct, indirect, and option) and non-use values (bequest, existence, and altruistic). Economic valuation was conducted using CVM for non-market valuation, TCM for direct use estimation, and Input-Output Analysis for economic spillover effects. The total economic value (TEV) of the Sejong National Arboretum is estimated at KRW 5,644.5 billion, with non-use values comprising 91.4%. The direct use value, including general visitation and special events, was KRW 394.9 billion, while educational and scientific research values were KRW 15.9 billion and KRW 10.3 billion. Economic ripple effects include KRW 749 billion (production), KRW 130 billion (income), KRW 286 billion (value-added), and 545 jobs. A WTP analysis showed strong public preference for urban green space expansion (KRW 95,336 per capita), a 10% increase in plant species diversity (KRW 67,307), and enhanced global conservation efforts (KRW 63,562), highlighting the arboretum's ecological and economic. This study develops a TEV-based valuation model for evidence-based arboretum management. Future research should expand valuation scope, establish long-term monitoring, and standardize methods through international benchmarking. The findings affirm the Sejong National Arboretum's ecological, educational, and economic value, supporting TEV-based conservation policy and resource allocation.

POSTER ABSTRACT

HW_P_155

Stress Relief in the Arboretum: a Nature-Based Mental Health Program for Firefighters

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Keywords: Mental health improvement, Healing, Stress relief

In 2024, Sejong National Arboretum conducted a plant-based mental health recovery program for firefighters frequently exposed to disaster situations. This long-term program, held over seven sessions, was provided participants with immersive sensory activities such as gardening and making herbal sachets in the arboretum. Subjective surveys were conducted before and after the program, confirming psychological recovery effects, including anxiety reduction and improved emotional well-being.

POSTER ABSTRACT

HW_P_179

POSTER ABSTRACT

Effect of Acacia mangium Bark Extracts on Insulin Secretion in BRIN BD11 Cells

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Keywords: antidiabetic, inner bark, insulinotropic activity, outer bark

Indonesia ranks fifth in the world for the highest number of diabetes cases, with 19.5 million affected individuals in 2021 and this number is estimated to increase to 28.6 million by 2045. At the same time, Acacia mangium bark (AB) is a widely available waste product from logging activities in Indonesia. In 2023, log production from the Acacia genus reached 31.11 million m^3, accounting for 45.61% of Indonesia's total log production. However, the bark remains underutilized. Various studies have explored the antidiabetic potential of AB extract, but its effect on stimulating insulin secretion (insulinotropic activity, IA) has not yet been investigated. The study aimed to determine the extraction yield of AB, evaluate its IA through an in-vitro assay, and analyze the phytochemical profile of the extracts. The inner and outer barks of AB were sequentially extracted using Ultrasound-Assisted Extraction for 45 minutes with n-hexane, ethyl acetate, ethanol, and water. The results demonstrated that different bark parts and solvent types produced extracts with varying yields, IA, and phytochemical profiles. The ethanol extract from the outer bark (OE extract) was the most promising for developing herbal medicine. Treatment with OE extract at a 100 µg/mL concentration increased insulin secretion in BRIN BD11 cells to 260.6 pg/mL, compared to 44.6 pg/mL in the untreated control group. The extraction yield of OE extract was 10.86%. Phytochemical analysis using LCMS identified dominant compounds in the OE extract, including 9-D-hydroperoxylinoleic acid, thapsic acid, azelaic acid, dibutyl sebacate, and tricaproin.

POSTER ABSTRACT

BS_P_10

Sharing for Better Acting: The Educational Group of the French-Speaking Botanical Gardens Association (JBFPF)

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Keywords: 'education' network, share of knowledge and best practices, mutual help between gardens (big or small)

The Education Group of the JBFPF is made up of around ten educators, leaders and scientific mediators from the Botanic Gardens of France and french-speaking countries (JBFPF) who are active and involved in the life of the 'education' network.

The wider network (around 90 people) is open to all. It gathers educators, activity leaders and scientific mediators from french-speaking botanical gardens who wish to join. Members of the network can take advantage of the workshops, training courses and technical days organised by the education group. They can also benefit from a wide network of people working in the same field, who can share their knowledge, give advice, exchange best practice or come up with ideas for partnerships.

The common denominator of this network, beyond frontiers, is therefore to bring together people from french-speaking countries who share a common mission: sharing with the public the goals and challenges of botanical gardens, the latest knowledge about the plant world and, quite simply, their passion for plants. Although the network is currently made up mainly of French, Belgian and Swiss members. Our presence at the BGCI's 11th International Congress on Education in Botanic Gardens is an invitation to anyone working in french-speaking botanical education to join us.

POSTER ABSTRACT

BS_P_15

From Learning to Action: Service-Learning as a Tool for Environmental Education

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Keywords: Service-Learning, Education for Sustainable Development (ESD), Science Communication, Student Involvement

Botanical gardens serve a vital role in biodiversity conservation and environmental education. The Botanical Garden at the University of Tübingen integrates these missions with an innovative service-learning program, enabling students to actively engage in environmental education while applying their academic knowledge in a real-world setting.

Through the seminar "Service Learning: Grüne Werkstatt im Botanischen Garten," students immerse themselves in learning through engagement, developing and implementing their own educational programs for visitors. By designing guided tours and interactive learning experiences, they bridge theory and practice while honing their communication and teaching skills. This service-learning approach aligns with the principles of Education for Sustainable Development (ESD) by empowering students to become active contributors to sustainability education. By fostering environmental awareness, critical thinking, and participatory learning, the program equips students with essential competencies for addressing global sustainability challenges.

Beyond enhancing student learning, the program provides lasting benefits for the Botanical Garden and the wider community. New, innovative tour concepts emerge, ensuring a dynamic and evolving educational program. Successful programs are shared with other botanical gardens within the German Association of Botanical Gardens, promoting collaboration and knowledge exchange. Many students continue as environmental educators beyond the seminar, fostering long-term sustainability and growth.

Visitors, including children and adults, benefit from diverse, engaging, and modern educational offerings, strengthening their connection to nature and environmental responsibility. Ultimately, this initiative reinforces the Botanical Garden's role as a vibrant center for Education for Sustainable Development, societal engagement, and lifelong learning.

POSTER ABSTRACT

BS_P_39

Advancing Botanical Garden Education: A Case Study of Themed Forest Programs at Hwadamsup Botanic Garden

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Keywords: Botanical Garden Education, Visitor Engagement Strategies, Public-Private Collaboration, Sustainable Educational Program Design

1. Background

The visitor engagement programs at Hwadam Forest have evolved beyond simple craft activities into integrated experiences that combine education and interactive participation, enhancing botanical garden education for visitors. The themes of interpretation have also evolved from simply explaining plants to incorporating environmental education. While previous craft-based programs (e.g., creating marimo aquariums, decorating mugs) offered only temporary engagement, the interpretation-integrated programs unique to Hwadam Forest (e.g., Themed Forest programs featuring moss, bonsai, and biodiversity interpretation) have significantly enhanced environmental education effectiveness. These programs have also increased visitor satisfaction and length of stay while positively impacting the financial sustainability of private botanical gardens. This study aims to analyze the impact of the Integrated programs that combine interpretation and hands-on craft activities, introduced in 2023, on the educational role and operational efficiency of botanical gardens. Additionally, it examines the program The Moss- Themed Forest Experience, which received certification as an Outstanding Environmental Education Program from the Ministry of Environment, highlighting its significance as a public-private partnership model.

2. Methods

This study was conducted through a comparative analysis of program outcomes between two periods:

- 2021–2022 (operation of craft-based programs)
- 2023–2024 (operation of interpretation-integrated experiential programs) Research subjects
- Participants in programs at Hwadam Forest
- Key operational indicators of the botanical garden Research methods
- Comparison of participant numbers and satisfaction levels (2022 vs. 2023)
- Analysis of changes in per capita spending and revenue growth rates
- Examination of program operation strategies and participant responses

POSTER ABSTRACT

• Assessment of the experiential process of obtaining certification of the "The Moss- Themed Forest Experience" by the Ministry of Environment and its impact on the botanical garden

3. Conclusions and Recommendations
This study confirmed that interpretation-integrated experiential programs are more effective than craft-based programs in enhancing the educational value of the botanical garden and fostering participants' environmental sensitivity

1) The Need for Changes in Botanical Garden Experiential Programs
• Future program designs should incorporate direct interaction with nature and establish methods to assess learning effectiveness systematically.
• Compared to inexpensive and simple craft activities, programs that integrate interpretation with optimized hands-on experiences using plant-kits provide higher educational value and participant satisfaction while also yielding positive effects from a botanical garden management perspective.

2) Public-Private Collaboration for Sustainable Botanical Garden Education
• Botanical gardens possess expertise in plant science and field-based education, while the Ministry of Environment ensures program stability, effectiveness, and innovation through systematic evaluation. Collaboration between these entities is essential to develop more structured and high-quality environmental education programs.
• Exploring the potential for ESG (Environmental, Social, and Governance) initiatives to support funding models for botanical garden education.

3) Expansion of Integrated Environmental Education Models
• Through integrated environmental education models, botanical gardens can serve as platforms where experts from various disciplines, including arts, environmental science, and climate studies, collaborate to enhance educational experiences. This approach can also contribute to regional development and sustainable partnerships while broadening the role of botanical gardens.
• Exploring the potential to expand educational networks among domestic and international botanical gardens by leveraging certified programs as a foundation for collaboration.

Final Remarks
This study underscores the necessity of transitioning from traditional craft-based programs to interpretation-integrated experiential education models to enhance both educational value and financial sustainability in botanical gardens. Furthermore, strengthening public-private collaboration and expanding interdisciplinary environmental education initiatives will be crucial in ensuring the long-term success and impact of botanical garden education.

POSTER ABSTRACT

BS_P_41

From Tracks to Green Corridors: An Eco-Semiotic Reading of Gwangju's Pureun-gil

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Keywords: limited to six words or phrases, separated by commas

Pureun-gil is an 8.5km green corridor in Gwangju City, transformed from an abandoned railway line into a public park since 2002 through active local community participation. This pathway intersected the urban center, closely connecting with adjacent residential areas. It featured distinctive characteristics including a narrow, elongated topography resulting from urban expansion, deliberately selected tree species, and citizen-led development initiatives. While the name 'Pureun-gil' (meaning 'Green Path') reflected its aspiration to be a verdant ecological space, it was essential to examine whether it truly achieved a harmonious balance between ecological integrity and community wellbeing. This study aimed to reevaluate Pureun-gil's significance as an urban green space, exploring sustainable development pathways that enhanced both ecological values and community wellness. Our methodology integrated both scientific and semiotic cultural perspectives through on-site investigation and in-depth interviews with civil society representatives and local visitors. Our findings revealed tensions between conservation needs and recreational use, with visitors' anthropocentric perspectives often overlooking ecological concerns. The study also explored semiotic conditions for transforming Pureun-gil into an iconic place that could strengthen local identity through distinctive visual elements and meaningful cultural narratives. The transformation of abandoned railway lines into green spaces can be discussed as a case study of sustainable development that captures the historical transition of local communities, preserving their heritage while creating new ecological and social values.

POSTER ABSTRACT

BS_P_69

Korean Traditional Play for Forest Ecology Education: "Children and Forest, Mingling with Traditional Play"

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Keywords: Forest Ecology Education, Korean Tranditional Play Culture, Korean National Crriculum

Children can connect with the forest through traditional play tools. Korean traditional plays, which are easily adapted and developed by finding various materials in the school or nearby forests and using them, can be used for forest ecology education.

The Korean national curriculum was analyzed and applied to design a program for elementary and primary school students. A total of 32 traditional play-related education programs, four for each of the four seasons, are composed of seasonal experiences and applicable games. For example, "Mugunghwa Bloomed" in the summer when the Mugunghwa flower blooms. The children were allowed to play.

Each class was organized as a convergence class so that students could learn about forest ecology first and then play traditional games using the learning materials. For example, the Tangram play was organized as a learning play where children could learn about trees and leaves while assembling seven pieces of leaves.

The National Arboretum continues to develop educational programs that combine forest education with Korea's traditional play culture, and in line with the revised Early Childhood Curriculum and Elementary School Curriculum, the National Arboretum published a new booklet, "Children, Forests, and Traditional Play," to share programs developed to support the educational operations of related educational institutions and organizations, including arboretums and botanical gardens in Korea.

It is hoped that the forest will become a place of learning and help children develop holistically, and that educational synergies will be passed on.

POSTER ABSTRACT

BS_P_70

"Soop-I Orae", the Children's Education Space of the Korea National Arboretum

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Keywords: Arboretum, Conservation of the Ecosystem, Ecological Environment Education

'Soop-I Orae' is a children's educational space located in the National Arboretum, which opened in May 2021. The name 'Soop-I Orae' carries two meanings: 'Let's preserve the forest for a long time' and 'The forest beckons children to come.' It serves as an educational venue designed to convey the importance of forest ecosystems in an engaging and accessible manner for children, utilizing both indoor and outdoor spaces.

The facility is designed with a building area of 275㎡, inspired by the structure of a beehive. During its construction, existing trees such as the bola cypress(Taxodium distichum (L.) Rich.) and the fir(Abies holophylla MAX) were preserved in their original locations without relocation or logging, and measures were taken to prevent bird collisions, ensuring coexistence with various forest organisms while considering biodiversity and sustainability.

'Soop-I Orae' offers a variety of educational programs for preschool and elementary school students, providing hands-on experiences with living organisms in settings such as indoor classrooms, outdoor earth playgrounds, worm playgrounds, bracken gardens, butterfly gardens, vegetable gardens, Korean fir courtyards, and artificial ponds.
The programs are conducted as a continuous forest education program from April to October, with prior reservations required. The forest education program includes themes such as 'Life Activities and Sensory Experiences,' 'Exploring Forest Organisms,' 'The Life Cycle of Organisms,' and 'Sustainable Forest Management.'.

This space provides sustainable forest education through hands-on activities that engage the senses, allowing children to play and learn in the forest by touching the soil, planting trees or plants, and observing tadpoles, rather than using artificial toys.

POSTER ABSTRACT

BS_P_71

Raising Awareness of Forest Biodiversity Conservation Among Children: Focusing on Interactive Exhibits

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Keywords: World Biodiversity Day, Biodiversity Conservation, Interactive Exhibition.

Every year, May 22 is designated as World Biodiversity Day. The day commemorates the Convention on Biological Diversity (CBD), adopted by the United Nations Conference on Environment and Development in 1992, and promotes biodiversity conservation and awareness. The theme for World Biodiversity Day 2024 is “Be part of the Plan” to encourage international participation in the implementation of biodiversity plans. The National Arboretum has categorized Korea's red plant list according to the IUCN Red List and utilized it as a basis for conservation and restoration.

Based on this data, the plants utilized in the interactive exhibit were organized around Critically Endangered (CR) species Allium dumebuchum H.J.Choi, Glochidion chodoense C.S.Lee & H.T.Im, and Endangered (EN) species Iris setosa Pall.exLink, Cypripedium japonicum Thunb. and Abies koreana E.H.Wilson. The exhibition is a participatory exhibition to raise children's awareness of forest biodiversity conservation, and ten types of postcards, five with real photos and the five with coloring, were created to display information on five Critically Endangered and Endangered native plants. By exposing children to information about Critically Endangered and Endangered plants and coloring them, we hoped to help them understand the meaning of the Red List and recognize the need to conserve these plants. The postcards colored by the children were displayed directly in the exhibition space of the Geodome. This act would have given them time to reflect on the meaning of the exhibition, and furthermore, it would have been an opportunity for a creative experience to reorganize their thoughts through direct interaction with the exhibition space.

POSTER ABSTRACT

BS_P_92

Planning and Design of the Jiuli Lake Science Education Trail

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Keywords: Planning and design, Science education trail, SCBG, Wanlv Lake, Jiuli Lake, wetland park

Wanlv Lake is a national wetland park and a 5A-level tourist attraction. The main content of this project is the planning and design of Jiuli Lake, a publicly accessible area within Wanlv Lake Wetland, to create the Jiuli Lake Science Education Trail. Leveraging the rich resources of the national wetland and the scientific research and science education capabilities of the South China Botanical Garden, the team formulated a plan centered on the core theoretical framework of ecological civilization, with wetland biodiversity as the theme, and biodiversity conservation and science education as the core objectives. Through the exploration of science education resources, conceptual planning, landscape design, and innovative content integration, three major science education themes were designed for the Jiuli Lake Science Trail. Theme 1: Learning Wetland Wisdom Together. This theme focuses on showcasing the wetland ecosystem and biodiversity science education. The entrance features include a guided tour of the science trail, displays of Wanlv Lake Wetland's human wisdom achievements benefiting people's livelihoods, such as major water conservancy projects, a wetland ecological wisdom science wall, an ecological panorama of Wanlv Lake, and interactive check-in facilities like the jellyfish pavilion. Theme 2: Building a Green Life Together. This theme highlights wetland forest culture science education, including the promotion of green and beautiful Guangdong, shared green living, the health benefits of green plant species, Hakka natural wellness culture, and introductions to wellness plants. Theme 3: Protecting Green Wonders Together. This theme showcases the unique science education of rare and distinctive flora and fauna, including the jellyfish of Wanlv Lake, rare plants of Heyuan, and plants named after Heyuan. The successful implementation of this project will create partnerships between national botanic gardens and smaller local gardens or tourist attraction, promoting high-quality local development.

POSTER ABSTRACT

BS_P_93

Cases and Necessity of Plant Education for Adapting to Future Climate-Induced Environmental Changes

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Keywords: Climate Crisis, Extreme Environment, Interdisciplinary Collaboration, Sustainable Agriculture

The term "climate crisis" has become a globally significant issue, prompting countries like the United States, the United Kingdom, and Germany to develop plant-based solutions and management technologies to address environmental changes. Research on plant growth in extreme environments, such as drought conditions, Antarctica, and space, is also being conducted to prepare for future climate challenges.

In space plant research, Japan is studying the effects of microgravity on root development, while China has successfully cultivated plants aboard its space station. NASA has been conducting plant growth experiments on the International Space Station since the 1960s. Although initially led by government agencies, space plant research is now seeing increasing involvement from the private sector. One example is the Growing Beyond Earth (GBE) program, a collaboration between NASA and Fairchild Tropical Botanic Garden, which involves middle and high schools in over 10 countries. This program broadens students' scientific perspectives, raises awareness of climate issues, and provides crucial data for sustainable food production in long-term space missions.

As seen in such initiatives, fostering partnerships between botanical gardens, schools, and research institutions is a key strategy for addressing future environmental changes through interdisciplinary research and education.

POSTER ABSTRACT

BS_P_111

Predicted Changes in Biodiversity Hotspots Under Climate Change Scenarios

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Keywords: Korean Peninsula, species distribution modeling, SSP scenario, biodiversity hotspots, vulnerability assessment

Using species distribution modeling (SDM), we predicted shifts in plant diversity hotspots under climate change scenarios (SSP1-2.6, SSP3-7.0, and SSP5-8.5) based on the responses of 93 northern plant species and 90 southern plant species. Niche overlap analysis was conducted to assess potential changes in biotic interactions. Modeling multiple species is particularly useful for identifying diversity-vulnerable areas where species richness declines and for establishing conservation strategies at the regional level. Under the sustainable development scenario (SSP1-2.6), a rapid environmental shift was projected between 2011 and 2040. The hotspots of northern plants were concentrated in central Korea, including Gyeonggi and Gangwon provinces, as well as mountain ranges such as the Taebaek and Sobaek Mountains. In contrast, southern plant hotspots were primarily located in Jeju Island and along the southern coastal regions. Unlike northern plants, southern plants exhibited significant latitudinal and elevational shifts under all scenarios, indicating their substantial influence on changes in plant diversity distribution across the Korean Peninsula. The east and south sea coastal areas were identified as vulnerability zones with significant biodiversity loss of northern plants. Climate change increased niche overlap intensity between northern and southern plants. The Korean Peninsula's geographical features limit the migration of species from lower latitudes or warmer regions, making it particularly vulnerable to biodiversity distribution shifts under climate change. Overall, a precise assessment of climate change vulnerability in the east and south sea coastal regions is required. Strengthening ex situ conservation efforts for northern plant species and establishing a collaborative network to monitor real-time plant migration and range shifts will be essential for future conservation planning.

POSTER ABSTRACT

BS_P_150

A Study on the Korean Traditional Garden Exhibition-Related Education Program: The Case of Flowered Wall (Kkotdam)

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Keywords: Korean traditional garden, flowered wall

Our ancestors have enjoyed decorating the walls and fences of houses with various patterns since ancient times, and the beautiful decorations with patterns were called 'Flowered Wall (Kkotdam)'.

Kkotdam is a pure Korean word. Historical records mention them as 'flower-plant- patterned wall' and 'flower-patterned wall'. The style and materials of these walls varied depending on their shape, social status, and location.

The patterns used in Kkotdam include plant motifs, animals, and characters, serving not only as decorative elements but also as symbolic expressions of hopes and origins. These walls are a beautiful part of Korean traditional landscape architecture.

Plant motifs commonly found in Kkotdam include Korean red pine, bamboo, Korean apricot, peony, chrysanthemums, lotus, orchids, and grape vine. the meanings of the plants in each pattern are as follows. There are Pinus densiflora (virtuous, noble), Bambusa (integrity, perseverance), Rhododendron mucronulatum (endurance, longevity), Punica granatum (fertility, life), Paeonia suffruticosa (wealth, prosperity), Prunus persica (new beginnings, paradise), and Chrysanthemum (loyalty, elegance).

In collaboration with the master craftsman from the Republic of Korea, J.W. Kim, we exhibited the missing parts of the flowered wall of Gyeonbokgung palace's Jagyeongjeon as a work, and also showed a video of the making process to demonstrate how it was created. It operated a Kkotdam production education program for annual members of Korea Arboreta and Gardens Institute (Sejong).

Korea Arboreta and Gardens Institute has planned an exhibition-related education program in collaboration with Korea National University of Heritage. The aim of this exhibition-related education program is to facilitate the ongoing advances and education of Korean garden content in order to promote Korean garden culture.

POSTER ABSTRACT

BS_P_152

POSTER ABSTRACT

Manual for Native Plant Cultivation: The Beginning of Plant Industry Promotion and the Public Role of Arboreta

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Keywords: Native Plant, Plant Production, Forest Restoration, Local Community

The UN Decade on Ecosystem Restoration and the Convention on Biological Diversity (CBD) emphasize the importance of utilizing native plants to restore degraded forest ecosystems and enhance their health. To implement this, the Baekdudaegan National Arboretum (BDNA) is conducting research on propagation and cultivation techniques to enhance the utilization of native plants. Since 2020, BDNA has been developing a manual that contains step-by-step contents from sowing to seedling management and propagation for 16 species, including Dendranthema zawadskii var. latiloba (Maxim.) Kitam. and Lythrum salicaria L., targeting forest restoration materials and demand-based native plants of local farms. These manuals are provided as public services through the Korea Arboreta and Gardens Institute (KoAGI) website (www.koagi.or.kr), serving as a guide for native plant production to local farmers, public and private arboreta, and the general public. Furthermore, BDNA is transferring its technologies to local farmers, aiming to enhance their capacity for plant production while creating new income sources and contributing to regional economic revitalization. Through this, BDNA aims to build a local community, thereby strengthening the promotion of the plant industry and the public role of the arboretum within the region.

POSTER ABSTRACT

BS_P_153

Operation of an Education Program through ESG Cooperation

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Keywords: Education Program, ESG, Forest Biodiversity Conservation, Proposal

This study was conducted as part of an ESG cooperation project between the Korea Arboretum and Garden Management Service and Yuhan-Kimberly to raise awareness of forest biodiversity conservation.

Under the title "Yuhan-Kimberly Green Camp," 42 university students from across the country were selected to participate in online pre-education on forest biodiversity and on-site training at the National Baekdudaegan Arboretum.

The 42 participants were divided into 10 teams, each of which developed a project proposal to promote awareness of forest biodiversity conservation. The proposals included an art festival, a photography exhibition, garden creation, subway poster exhibitions, tissue packaging designs, games, social media campaigns, and educational programs.

Among these, the photography exhibition, garden creation, and educational programs were actually implemented. Further development of the submitted proposals is expected to enhance public awareness and engagement in forest biodiversity conservation effectively.

POSTER ABSTRACT

PT_P_3

Biomimicry in Botanic Gardens

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Keywords: biomimicry, nature-based STEM, innovation, design, learning

Biomimicry, the practice of learning from and applying nature's strategies to design, offers a nature-based STEM approach that connects future innovations with the natural world. Botanic gardens provide accessible gateways to nature and ideal environments for fostering biomimicry education. By engaging with living systems, students can explore how nature's solutions address complex design challenges. This approach is particularly valuable in climate education, as it frames environmental issues through an optimistic lens—emphasizing that solutions already exist if we take the time to learn from nature. Royal Botanic Gardens Victoria have proven that Biomimicry programs in botanic gardens to be effective across various formats. These include in-person, online, and outreach programs - partnering with regional botanic gardens, making them a versatile, accessible, and impactful tool for connecting learners with STEM education, sustainable innovation and ecological stewardship.

POSTER ABSTRACT

PT_P_21

Wood Education to Spread the Positive Perception of Wood in Response to the Climate Crisis

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Keywords: wood education, wood culture, wood utilization

To address the climate crisis, major countries around the world are emphasizing 'forest sinks' as part of their strategies to reduce greenhouse gases, in accordance with international agreements. Forest sinks include forest management, afforestation and reforestation, forest biomass, and the use of wood products. Here, only 'domestic wood' is recognized according to international agreements, so it is necessary to establish a foundation for promoting the use of domestic wood. Wood is a high-performance building material that is stronger than other construction materials, and it is also a resource with both economic and environmental value. However, the public perceives forests as a key asset for environmental protection, which leads to a strong negative perception of wood harvesting. This is because there is a low awareness of information related to wood, such as its carbon storage function. To overcome the climate crisis, there is a need for expanded access to information and educational opportunities. Along with social and cultural changes, there has been an increased demand for wood education, but the scope of this education is shrinking even within public education. Therefore, a standardized guideline for wood education should be developed, which would systematically teach and provide hands-on experience of the necessity of wood harvesting and the various functions of wood.

POSTER ABSTRACT

PT_P_35

Sharing Discoveries through Citizen Participation

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Keywords: citizen participation, communication, digital mapping tools, photo-based interpretive panels, interpretation

Engaging visitors in botanical garden interpretation fosters deeper connections with nature and encourages active learning. This poster presents an accessible, cost-effective approach to public participation in interpretive material creation, leveraging widely available and free digital tools such as Google Drive and Google My Maps.

Visitors capture photographs of plants, insects, or landscapes and compose brief explanatory texts, often in a haiku-style format. These contributions are formatted into standardized interpretive panels, which can be printed and laminated for on-site display or shared digitally. Online platforms provide easy accessibility and interactivity, allowing for visitor engagement through comments and discussions.

This method has been successfully implemented in various settings, including the Ecology Park Gallery and Share Your Discoveries initiatives at the Ecology Park of the Natural History Museum and Institute, Chiba. It has also been applied in university museum practicums and public science workshops. Participants not only observe but also interpret and communicate their findings, fostering a more immersive educational experience. Unlike traditional citizen science projects that focus solely on data collection, this approach highlights interpretation and engagement, making it well-suited for botanical gardens and nature reserves aiming to enhance visitor participation.

At the Ecology Park, research staff also create longer interpretive on-site panels with detailed explanations. However, observations indicate that many visitors prefer the haiku-style visitor-generated panels over lengthy texts. These shorter, more accessible interpretations encourage movement along the garden paths while naturally engaging visitors with the content.

POSTER ABSTRACT

PT_P_46

From Virtual to Real Experiences

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Keywords: gamification, Roblox

We were invited by the Government of Buenos Aires to recreate the Carlos Thays Botanic Garden on the Buenos Aires site of the child-friendly gaming platform Roblox. We saw this opportunity as a way to attract gamers to the Botanic Garden and offer them an immersive experience that bridges the virtual and real worlds. The design of the virtual garden included the most iconic areas, along with hidden missions for players to complete. For example, one mission challenges participants to find the tallest palm tree in the garden. Upon completing each challenge, players earn a badge. Those who finish all seven missions receive a four-digit secret code, which allows them to unlock the same series of missions in the real Botanic Garden. A lockbox was placed at the garden's entrance. Players can open it using their code, which grants them a map with instructions for playing the same game in the real-life garden. Now, to find the tallest palm tree, players have to walk, explore, and look up in the garden in person! We believe creativity is key to engaging young people with botanic gardens. Introducing the garden in the virtual world is just the starting point. By challenging players to visit the physical garden through their gaming interests, we can create an engaging and educational experience that bridges the gap between the digital and natural worlds. This approach fosters a deeper connection with nature while promoting environmental awareness and curiosity.

POSTER ABSTRACT

PT_P_88

Development of an Image-Assisted Interactive Key for Lamiaceae in Korea

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Keywords: interactive key, Lamiaceae, plant identification, Lucid Central, citizen science, education

Despite advances in molecular and AI-based species identification technologies, morphology-based classification under human observation remains essential in various fields of research and education. Understanding plant taxonomy requires knowledge of identification keys that guide users through the process of distinguishing species based on morphological characteristics. However, traditional dichotomous keys rely solely on binary character divisions and specialized terminology, making them difficult for non-experts to use. In contrast, an image-based interactive key allows flexible character selection, incorporates illustrations and photographs, and provides a more accessible identification process. Lamiaceae, the sixth largest family of flowering plants, is widely known for its medicinal and ornamental uses, making it a good example of the application of such a tool. In this study, we reviewed 166 taxa and 165 morphological characters of Korean Lamiaceae based on published literature. Among them, we selected 85 taxa with voucher specimens available in the herbarium, which allowed direct verification of their character states, and identified 56 key diagnostic characters to distinguish them. Using this data, we developed an image-based interactive key system with Lucid Central Builder v4.0, which is available online at http://amborella.net/LamiaceaeProject/02. This tool allows users, especially non-specialists, to quickly identify Korean Lamiaceae species in the field based on observed characters. Our interactive key is currently limited to the Lamiaceae taxa distributed in Korea. However, it has the potential to be extended to all East Asian Lamiaceae species. In addition, by including horticultural species and non-native invasive plants, it could serve as a valuable tool for citizen science education. This expansion would facilitate the identification of diverse Lamiaceae taxa and provide a fundamental resource for the studies of taxonomy, biogeography, ecology, and citizen science education.

POSTER ABSTRACT

PT_P_127

Vilnius University Botanic Garden: Harnessing Technology for Interactive Learning and Engagement

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Keywords: Linneo project, QR codes, plant biodiversity, interactive quest, gamified education, interdisciplinary collaboration

The Vilnius University Botanic Garden leverages technology to enhance visitor engagement and learning, aligning with global trends in educational innovation within botanic gardens. This text highlights three key initiatives demonstrating how digital tools can transform visitor experiences.

As a participant in the EU-funded Linneo Project, Vilnius University collaborated with institutions such as schools, a zoological museum, an aquarium, and an educational research institute to develop an online platform that integrates botanic knowledge and multimedia tools. This interdisciplinary project targeted primary school students as its main audience, providing an engaging educational game to inspire interest in plant biodiversity. Additionally, the project offered supplementary materials, including lesson plans and detailed information, to support teachers in incorporating biodiversity topics into their curricula.

The garden also features a QR code system describing over 6,700 plant specimens. Scanning a QR code provides visitors with detailed information, including plant growth forms, morphological characteristics, care requirements, usage potential, and other key insights. This comprehensive approach allows for a self-guided, enriched learning experience tailored to individual interests.

For younger audiences and school groups, the garden offers an interactive quest. Using mobile devices and guided by a Google Maps-based digital interface, participants search for specific plants using morphological clues. Upon locating a plant, they match its label to the descriptions provided in the quest materials. This gamified activity fosters curiosity, critical thinking, and hands-on engagement with botany.

Through these initiatives, Vilnius University Botanic Garden demonstrates the potential of technology and interdisciplinary collaboration in promoting biodiversity awareness, education, and engagement. This paper highlights how digital tools can transform botanic gardens into inclusive, dynamic educational spaces, bridging nature and technology.

POSTER ABSTRACT

PT_P_131

Using Interactive, Child-Centered Interviews to Explore the Programmatic Interests and Needs of Family Audiences

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Keywords: engagement, families, children, gamification, data-driven, program development

As garden educators, we want to offer engagement opportunities that are interesting, relevant, and meaningful to our audiences. To provide these types of engaging experiences, we need to know who our audience is, their interests, and their programmatic needs. This poster will describe the interactive interest interviews conducted with the U.S. Botanic Garden's family audience, which primarily included families with children ages 12 and younger. We engaged visiting families in brief, interactive interviews that explored three overarching questions: Who are the families we see? What do they want to learn about and how? When/how should we offer programs for families? The interviews were designed to be fun and playful, involving manipulatives that children could interact with and opportunities for them to voice their own ideas. Gamifying these interactive interviews made them more engaging and increased participation from the desired audience. This poster will detail interview development, methods, and results. We'll give concrete examples of how we have applied insights from the interviews to make programmatic decisions. By asking the right questions and listening to audience responses, education teams can collect the information needed to make data-driven program development decisions, better aligning educational experiences with audience interests and needs.

POSTER ABSTRACT

PT_P_156

The Impact of Research on Arboretum Established in Coastal Reclaimed Land on Arboretum Education

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Keywords: Samangeum National Arboretum, Coastal reclaimed area, Collected data, Educational materials, Experiential leanring programs, Citizen science
limited to six words or phrases, separated by commas

The Korea Forest Serive and the Korea Arboreta and Gardens institute have been continuously conducting the 'A Study on the Plant Growth Environment Survey and Landscape Formation for the Saemangeum National Arboretum' from 2019 to the present(2025)

This study was carried out at the planned site of the Saemangeum National Arboretum, which is scheduled for completion in 2027. The Saemangeum region, developed as a large-scale reclaimed coastal area, has unique environmental characteristics different from inland areas, such as salinity stress caused by soil salinity levels and strong coastal winds. The primary goal of this study is to identify the optimal plant growth condtions in Samangeum and establish foundational data for sustainable landscape design.

The study was conducted in three phases from 2019 to 2024, focusing on:Verification of plant growth performance based on soil characteristics, Development of coastal windbreak forest models, Determination of the most cost-effective soil amendment ratios, Selection of tree species with superior growth adaptability
These study findings have been incorporated into the implementation plan for the Saemangeum National Arboretum. From 2025 onward, the study will focus on identifying optimal planting techniques for tree growth and developing advanced management technologies.

This study serves as the world's first foundational study on the establishment of an arboretum in a coastal reclaimed area, Based on the collected data, it is expected to play a pioneering role in arboretum education by providing key educational materials, including:Field-based experiential learning programs for testing plant adaptability in saline soils, Citizen science education programs that encourage public participation.
In conclusion, this study will contribute to raising awareness of the ecological value and importance of sustainability in arboretum education, setting a precedent for future educational and environmental conservation efforts.

POSTER ABSTRACT

PT_P_157

Urban Forest Citizen Science Project: Enhancing Urban Biodiversity Conservation through Citizen Participation

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Keywords: Urban forest, citizen science, biodiversity monitoring, invasive species, i-Naturalist platform

Urban forests play a crucial role in promoting biodiversity and improving environmental quality in urban areas. However, continuous management and public engagement are essential for their preservation. This study aimed to raise awareness of the necessity of urban ecological conservation through a citizen science project and to collect citizen-driven data to support policy development. From April to December 2023, three sub-projects were conducted nationwide in collaboration with citizen scientists: (1) urban forest biodiversity monitoring, (2) street tree phenological monitoring, and (3) invasive plant species monitoring. The i-Naturalist platform was utilized for data recording and analysis. In the urban forest biodiversity monitoring, 112 citizen scientists participated, documenting 3,314 biological occurrences. This dataset comprised 1,291 vascular plant observations, 1,201 entomological records, and 822 ornithological sightings, culminating in the identification of 858 distinct taxa (393 plant taxa, 389 insect taxa, and 76 avian taxa). The street tree phenological monitoring engaged 52 university students (in collaboration with IFSA_KOREA) to assess the phenophases of four key urban tree species: Zelkova serrata, Ginkgo biloba, Chionanthus retusus, and Lagerstroemia indica, collectively yielding 6,454 phenological data points. The invasive plant species monitoring, conducted in Sejong City with 51 internal researchers, documented the distribution and prevalence of approximately 170 non-native plant taxa, with 284 georeferenced occurrence records. This project demonstrated the feasibility of urban forest biodiversity conservation through participatory citizen science. By actively engaging in standardized data collection, citizen scientists contributed valuable ecological datasets, providing empirical evidence to inform urban forest conservation policies. Future research should focus on expanding participant engagement and refining data integration strategies for enhanced biodiversity monitoring.

POSTER ABSTRACT

PT_P_171

Development of an AI-Powered Herbarium Image Pre-Identification System in Violaceae: Focusing on Korean Species

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Keywords: AI, convolutional neural network, deep learning, digitalizing, herbarium specimens, Violaceae

A herbarium sheet is a record of temporal, geographical, morphological, and genetic information of a species. In recent years, the major herbaria in the world have rapidly digitized the labels and images of their collections and made them available online. It promotes traditional specimen-based taxonomic, evolutionary, and ecological studies, as well as AI-driven fields of biodiversity loss and climate change. Although accurate species identification is critical to specimen-based botanical research, large herbaria still contain many misidentified specimens that take taxon-specific experts considerable time and effort to re-identify. In recent years, the application of deep learning to species identification in herbarium sheets has been growing, driven by the growth of digital specimen data, improvements in GPU performance, and the development of convolutional neural networks (CNNs) that are adept at image identification. Viola (Violaceae), which includes about 40 taxa in Korea, is a representative taxon with a high rate of misidentification due to the high degree of similarity among species and seasonal variation within species. In this study, we applied the ResNet-18 to develop an identification model for specimen images of 36 taxa of Viola. As a result, the macro accuracy for all 36 taxa was 0.8651, and the macro F1 score was 0.7703. In the confusion matrix, the accuracy was over 97.9% for the top 29 (80.55%) taxa. The identification model even overcame the influence of intraspecific seasonal variation. In our future research, we will extend the development of the models to other taxa with high rates of misidentification among the Korean tracheophytes.

POSTER ABSTRACT

EY_P_16

Environmental education programmes of the National Botanical Garden of Georgian in the context of climate change

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Keywords: National Botanical Garden of Georgia (NBGG), environmental education, GSPC, climate change, plant diversity, conservation, international partnership

National Botanical Garden of Georgia implements various environmental educational programmes aimed at raising awareness of climate change. The educational portfolio of the botanical garden includes four main programmes: "Motivational and educational course" (grades VII-X), "Eco-researcher" (grades VII-IX), "Eco-adventure" (grades I-VI) and certification courses in horticulture and landscape design.

Especially popular is the Motivational and Educational Course for grades VII-X is, which contains seven meetings. Participants of the course learn crucial issues such as vulnerability of Georgia's dendroflora, activation of plant pests and diseases under condition of climate change and adaptive strategies of plant conservation. The programme has a significant multiplier effect – participants create presentations and informational posters that are effective tools for spreading information widely among the school community.

NBGG also regularly holds workshops on issues of global climate change, which resonate with the principles of the GSPC (2010-2020) (Objective IV, target 14) and 2024 Kunming-Montreal Global Biodiversity Framework. Workshops cover topics such as habitat degradation, the spread of invasive species, desertification, environmental pollusion and the vulnerability of red-listed plants. NBGG conducts educational lectures in celebration of environmental dates. Garden specialist visit schools with educational lectures and donate plants that can make a significant contribution to mitigating climate change.

Statistical data reveal the growing popularity of programmes: in 2018, the number of participants was 3500, while by 2024 this number increased to 6000 (71.4% increase) covering 150 schools throughout Georgia, not only schools situated in Tbilisi, but also in other regions of Georgia. Within the framework of the adult education component, about 400 people participated in thematic seminars that confirms the growing interest of society to the issues of global warming.

NBGG actively cooperates with government agencies, non-government organizations and international partners (BGGI, "Partnership for Nature"). The project portfolio will be diversified by developing new thematic directions (such as Therapeutic horticulture) and will broaden target audience. This will significantly contribute to the development of the culture of environmental responsibility in the society and promote actions focused on mitigating the climate change.

POSTER ABSTRACT

EY_P_23

Satisfaction Survey for Wood Experience Activities for Elementary, Middle, and High School Students

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Keywords: wood

Due to various environmental issues and the crisis of resource depletion, achieving a sustainable society is important. In this context, wood, as a sustainable natural material, is recognized as a crucial resource for realizing carbon neutrality. South Korea is also presenting policies to expand the use of domestic wood as part of its efforts to achieve carbon neutrality, and has set specific initiatives to strengthen wood education in schools and society. In response, the Korea Forest Service is supporting the operation of school wood experience classrooms to help students correctly understand the value of domestic wood and carbon neutrality, and to encourage practical use of wood in their daily lives. In this study, after operating wood experience classroom programs in 34 elementary, middle, and high schools, a satisfaction survey was conducted with 1,494 participating students. As a result, it was confirmed that awareness of the importance of wood usage increased after the experience. Based on the survey results, programs that can enhance satisfaction will be developed.

POSTER ABSTRACT

EY_P_58

Career Decision-Making Process of Forestry-Specialized High School Students Based on Grounded Theory

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Keywords: Forestry-Specialized High School, Career Decision-Making Process, Career Identity, Grounded Theory, Happenstance Theory

Forests play a crucial role in society, highlighting the growing need for specialized professionals in the forestry sector. To meet this demand, forestry-specialized vocational high schools offer tailored programs, with Korea Forest Science High School being the only institution exclusively dedicated to forestry education. This study explores the career decision-making process and career identity of students at Korea Forest Science High School, examining how they chose forestry as their career path and the factors influencing their decisions. To achieve this, data were analyzed using grounded theory, and categories were derived based on happenstance theory to investigate the relationship between students' experiences and career development. Additionally, career identity levels were measured using the Vocational Identity Status Assessment (VISA). The results indicate that strong employment aspirations and parental influence played a key role in students' career choices. Notably, experiences such as forest visits and interactions with forestry or agricultural professionals contributed to shaping positive perceptions of the forestry field. Career identity analysis revealed that the proportion of students in the achievement category exceeded those in the diffused category, contrasting with previous studies that reported higher rates of diffused identity. This finding suggests that the specialized curriculum and hands-on training at Korea Forest Science High School may have positively influenced students' career identity development. By linking career development with experiential and environmental factors, this study provides a systematic understanding of the career paths of forestry-specialized high school students. The findings offer valuable insights for improving forestry education and informing policy development.

POSTER ABSTRACT

EY_P_59

Investigating Biomimicry as a Tool for Plant-Based Education on Junior Global Goals

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Keywords: Junior Global Goals (JGG's), sustainable development goals (SDG), education, biomimicry, plants

Investigating Biomimicry as a tool for plant-based education on Junior Global Goals

Specific plants will have dealt with problems related to sustainability in nature. Their solutions can provide a basis for solving our own problems on that matter. These problems have been drawn up in 17 SDG's in order to protect both our planet and life on it. The 17 SDG's are condensed into 7 JGG's for both practical and educational reasons.

On the poster we want to explore each JGG using biomimicry's Life's Principles.

By choosing different plants and examining these for their explementary function in biomimicry's Life's Principles, we can address a problem in sustainability and look for solutions.

The 7 JGG's:
1 - Healthy and Happy (SDG's 1,2,3,4,5,10,16)
2 - Better Use (SDG's 9,11)
3 - Clean Energy (SDG's 7,13)
4 - Clean Nature (SDG's 13,14,15)
5 - Healthy Source (SDG 6)
6 - Everything Circular (SDG's 12, 17)
7 - Smart with Money (SDG's 1, 8, 10)

The 6 overarching Biomimicry Life's Principles: (*Adapting to change)
A - Evolve to Survive
B - Adapt to Changing Conditions
C - Be locally attuned and Responsive (*Grow and develop)
D - Use Life-friendly chemistry
E - Be Resource Efficient
F - Integrate Development with Growth

POSTER ABSTRACT

EY_P_65

Ecological Preservation Education at Private Botanical Gardens: The Case of Hantaek Botanical Garden in the Republic of Korea

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Keywords: ecological preservation education, private botanical garden

Today, we face serious environmental problems due to biodiversity reduction, climate crisis, and urbanization. Ecological conservation education is essential to solving these fundamental problems. Since its establishment in 1979, the Hantaek Botanical Garden has been a representative private botanical garden in Korea. It has 9,700 plants, including 2,400 native plants and strives to protect and propagate various plant species. Hantaek Botanical Garden was created in consideration of plant characteristics and the ecological environment, and it is known as a suitable botanical garden for ecological and environmental education because it has high biodiversity through long-term eco-friendly management through hard work. Based on this, Hantaek Botanical Garden operates field-oriented education programs on the environment, ecology, and conservation, including customized ecological education programs for infants, adolescents, and adults, gardening programs for residents' participation, and healing garden programs for the socially disadvantaged. In this way, the Hantaek Botanical Garden uses native and endangered plants to help visitors feel nature, realize the importance of biodiversity, understand the relationship between plants and the environment, and recognize the need for environmental protection to enhance ecological sensitivity. Hantaek Botanic Garden is conducting visiting environmental plant conservation education. As part of this, it is constructing small garden of endangered species in educational institutions. It uses endangered species and native plants to create a small garden by participating with children, parents, and faculty. Through this, participants are informed of the importance of promoting endangered species and protecting the environment.

POSTER ABSTRACT

EY_P_87

Success Cases and Implications of Biological Exploration Education That Began at an Arboretum

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Keywords: Bioblitz, Biodiversity, Botanic garden, Citizen scientist, Education

Bioblitz Korea is a citizen science participation-based educational program that was introduced in Korea in 2010. At the time of the introduction of the initial Bioblitz program, there were difficulties due to the lack of a systematic framework, securing funds, and publicity. However, as the event was held annually, operations stabilized, participation from both experts and the general public increased, and media attention grew, enhancing public awareness. Today, Bioblitz programs of various scales are being operated in around 30 cities across the country, indicating the growing impact of the program as a biodiversity-related initiative. To date, 24,041 individuals have participated in the program, with a wide range of participants from elementary school children to middle-aged and elderly citizens. According to the satisfaction survey, most participants showed a positive response to the program's approach, with a high level of satisfaction regarding the opportunity to engage in field exploration with experts. The program, which has been running for 15 years, can be largely divided into field exploration and interactive programs with experts, with its significant advantage being the opportunity to explore various groups of organisms. Some children who began attending the program during their childhood have continued to participate even as adults, demonstrating the long-lasting influence of the program. Furthermore, 29.6% of participants in the 2024 survey showed that they had rejoined the program at least once. While participation opportunities in educational activities have increased through various regional programs derived from Bioblitz Korea, there is a challenge in securing professional personnel capable of running these programs. At this point, it is necessary to strengthen the role of botanic gardens and arboretums in enhancing expertise by transitioning existing programs for training paraprofessionals, which is one of the goals of Bioblitz Korea.

POSTER ABSTRACT

EY_P_108

Youth Volunteers Participate in Environmental Protection Education in NBG

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Keywords: Youth volunteers, environmental education activities, environmental interpretation, university students, graduate students

Founded in 1929, the Nanjing Botanic Garden Mem. Sun Yat-sen (NBG) is the first national botanical garden in China. Since 1983, we have established a science education team dedicated to conducting environmental protection-themed educational activities, including inviting scientists to deliver lectures aimed at disseminating environmental knowledge to the public. These scientists, laid the foundation for our volunteer program despite the absence of a formal volunteer structure at that time.

Our volunteer team was officially established in 2006 and consists mainly of university students, graduate students, and community members. The majority of these student volunteers come from local universities, particularly those studying life sciences, horticulture, and related fields. Their academic background equips them with the necessary expertise to effectively conduct volunteer services. On weekends, they engage visitors by providing environmental interpretation services within the botanical garden.

The graduate student group within the volunteer team hails from the School of Education at Nanjing Normal University. With a solid theoretical foundation in education, they are able to assist in, or independently lead, environmental education activities with minimal training. For example, Arbor Day activities, nature experience activities, and docent training activities.

Additionally, the community segment of the volunteer team includes many young individuals passionate about plant conservation. They contribute by participating in on-site maintenance of exhibitions, gardening, and planting activities.

The involvement of young individuals infuses our volunteer team with greater dynamism and diversity. A wide range of volunteer services not only enriches the life experiences of young volunteers but also provides invaluable social experience for students. More importantly, our environmental education initiatives are likely to have a profound and lasting impact on the younger generation. While they may pursue diverse career paths, they are poised to become strong advocates for environmental protection.

POSTER ABSTRACT

EY_P_158

Forest of Giving: Sustainable Forest Restoration for Future Generations

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Keywords: Forest Restoration, Youth Engagement, Biodiversity Conservation, ESG, NbS

The "Forest of Giving" project is an environmental education and restoration program that actively engages students in forest restoration. Participants gain hands-on experience through tree planting and ecological monitoring, contributing to forest recovery, biodiversity conservation, and climate change mitigation. The project also fosters public participation through donations, enabling individuals to contribute to restoration efforts directly or indirectly while collaborating with businesses and organizations to enhance ESG (Environmental, Social, and Governance) practices.

Beyond participation, the project provides education on forest ecosystem restoration, helping students understand restoration principles and the significance of long-term ecological management. Restoration sites, including wildfire-damaged areas and abandoned military facilities, are carefully chosen to address critical environmental challenges. Post-restoration monitoring assesses ecosystem recovery and biodiversity enhancement, ensuring sustainable restoration models.

These efforts align with Nature-Based Solutions (NbS) by integrating ecological restoration to reduce carbon emissions and protect biodiversity. Moving forward, the "Forest of Giving" project will expand youth engagement, strengthen forest restoration education, and develop sustainable restoration strategies in collaboration with public and private sectors. By promoting active participation, the project empowers youth as vital contributors to environmental conservation while establishing a scalable model for community-led forest restoration.

POSTER ABSTRACT

EY_P_159

IPA-Based Analysis of Importance and Satisfaction Factors in Garden Practice Education

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Keywords: garden practice education, IPA analysis, professional workforce development, garden industry, garden construction

Garden practical training plays a crucial role in developing professional expertise in the garden industry, expanding urban green spaces, and promoting sustainable environmental practices. This study employs Importance-Performance Analysis (IPA) to assess key factors influencing participant satisfaction and training effectiveness. Survey data from participants of the Garden Dream Project (2021-2023) were analyzed to identify strengths and areas requiring improvement in the training program. The IPA results indicate that (Quadrant 1) instructor expertise and hands-on training components significantly contribute to participant satisfaction and competency development. However, (Quadrant 2) facility limitations, accessibility constraints, and insufficient interaction between instructors and participants were identified as key areas requiring improvement. Furthermore, while practical training positively impacted job readiness and professional skill enhancement, challenges such as limited training opportunities and weak collaboration with industry and municipalities were identified as major constraints. Based on these findings, this study proposes (1) expanding training facilities and equipment support, (2) reinforcing field-oriented curricula, (3) strengthening industry and municipal collaboration, and (4) enhancing educational materials and advanced learning opportunities as strategic recommendations to improve garden practical training programs. Implementing these measures is expected to optimize training effectiveness and contribute to the professional development of future garden experts. This study provides a foundation for policy recommendations aimed at enhancing the quality of garden education and fostering the sustainable growth of the garden industry.

POSTER ABSTRACT

EY_P_160

Reducing Carbon, Creating Oxygen: Youth Environmental Education at Sejong National Arboretum

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Keywords: Carbon neutrality, Youth environmental education, Arboretum education

Sejong National Arboretum operates various environmental education programs for youth. Younger students explore the carbon reduction effects of different tree species through the "Reducing Carbon, Creating Oxygen in the Arboretum" program, fostering eco-friendly attitudes. Older students enhance their climate resilience by learning about the importance of biodiversity conservation through the "Compass for Protecting the Earth".

POSTER ABSTRACT

NB_P_22

Plant Conservation Culture Education Program with the Community

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Keywords: biodiversity, endangered plants, conservation, gardening, horticultural therapy, community

In preparation for international agreements such as the Convention on Biological Diversity (CBD) and the Global Strategy for Plant Conservation (GSPC), it is crucial to systematically conserve and secure important plant genetic resources for the future. Shingu Botanic Garden is a representative university arboretum in Korea, and was designated as an Ex-situ conservation institution for endangered plants by the Ministry of Environment in 2010 and has been conducting endangered plant dissemination activities to promote the role of botanical gardens, conserve endangered plants, and educate people for understanding the importance of conserving them. Since 2016, an educational program has been conducted in collaboration with Taepyeong Middle School and Pungsaeng High School in Seongnam-si, Gyeonggi-do Province, where alternative habitats were created and managed within the schools. The program involved school staff members and students, with activities such as supplementing the planting of endangered plant species in the alternative habitats and conducting research projects on the growth of these plants by students. The created habitats are also used in the schools' science classes. Additionally, from 2021, Shingu Botanic Garden has been running a gardening therapy program for elderly individuals experiencing depression over a three-year period. This program was developed in collaboration with local social welfare institutions, such as the Seongnam Senior Support Center and Senior Welfare Centers, ensuring a balanced combination of physical, mental, and social activities. Participants in the program showed positive effects, including reduced depression and anxiety, and increased vitality. Moreover, the program helped participants develop a sense of belonging as members of the local community, fostering social networks and improving satisfaction with interpersonal relationships. Through ongoing educational programs with the local community, Shingu Botanic Garden is committed to fostering a virtuous cycle of environmental awareness and promoting a sustainable plant conservation culture.

POSTER ABSTRACT

NB_P_27

Education for Tackling the Illegal Plant Trade

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Keywords: Traditional Ecological Knowledge (TEK), Intergenerational Transmission
Ecological Literacy, Ethnobotanical Plants, Ecological Education

Plants play a crucial role in nutrient cycling within ecosystems and are one of the most accessible parts of nature. Direct experiences and knowledge about plants are closely linked to ecological sensitivity and literacy. Traditional ecological knowledge (TEK) on plants extends beyond identifying plant species or understanding botanical characteristics; it also encompasses the accumulated wisdom of how humans and plants have interacted over generations. However, with rapid urbanization and industrialization, traditional knowledge about plants—rooted in human history—is quickly disappearing. In agrarian societies, parents were responsible for passing down TEK about plants to their children. However, as society has industrialized and urbanized, the necessity of intergenerational TEK education within families has significantly declined.

Amid growing ecological crises and the increasing call for an ecological civilization, TEK is gaining renewed attention. It provides fundamental insights into local ecosystems and serves as a foundation for ecological transition education. Therefore, understanding the current state of intergenerational TEK education within families and exploring its integration into school curricula is essential. This study investigates the TEK, experiences, and attitudes of students, parents, and teachers.

A survey was conducted among 252 students, 122 parents, and 131 teachers from elementary schools in Seoul and Gyeonggi Province. Correlation and multiple regression analyses were performed for student-parent pairs. The findings revealed no significant correlation between students' and parents' TEK, suggesting weak intergenerational transmission. Parents had relatively rich TEK, whereas students had limited knowledge and experience. Teachers recognized the importance of TEK but cited a lack of resources and concrete teaching methods as major barriers to implementation. These findings highlight the need for structured TEK education in both family and school settings.

POSTER ABSTRACT

NB_P_30

POSTER ABSTRACT

Development of an Arboretum and Botanical Garden Gardening Education Program for Youth: A Case Study of Chollipo Arboretum

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Keywords: Youth gardening education, Youth environmental education

The youth gardener education program at Chollipo Arboretum combines theoretical learning with hands-on experience, utilizing its extensive plant collection of 16,859 species and diverse facilities, including the Miller Garden, greenhouses, and archives. This program provides students from agricultural and forestry-specialized high schools with opportunities to understand the importance of arboretums and gardening while exploring various career paths. Participants gain practical experience in arboretum establishment and management, endangered plant conservation, landscape design, and plant morphology observation.

Between 2019 and 2024, Chollipo Arboretum provided education to 269 students, offering insights into careers in agriculture, landscaping, forestry, and environmental fields. Through this program, students learn about the practical aspects of managing arboretums and botanical gardens, fostering their professional interests.

A key feature of the program is mentorship from current arboretum employees who graduated from forestry-specialized high schools, sharing their experiences in choosing their majors and pursuing careers in arboretums. Post-program satisfaction surveys indicated that over 90% of participants found the program highly beneficial, with many highlighting that hands-on field training deepened their understanding of theoretical concepts. Additionally, students appreciated the engaging and well-structured curriculum tailored to their learning levels, as well as the supportive educational environment.

Recognized for its excellence, this program received the Grand Prize at the 2023 Arboretum and Botanical Garden Best Education Program Competition. Chollipo Arboretum remains committed to expanding and enhancing this program, providing more opportunities for youth to explore careers in arboretums and botanical gardens while fostering a deeper appreciation for plant conservation and landscape management.

POSTER ABSTRACT

NB_P_33

POSTER ABSTRACT

Development and Utilization of a Healing Camp Program for Youth and Marginalized Groups Based on Arboretum Activities: A Case Study of Chollipo Arboretum

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Keywords: disabled person, Forest Experience Education, healing

Chollipo Arboretum, Taean, Chungcheongnam-do, Republic of Korea
Established in 1970 as Korea's first private arboretum, Chollipo Arboretum has been fostering harmony between nature and people for 55 years. To enhance accessibility, the arboretum developed a wooden deck trail, enabling individuals with limited mobility to experience nature comfortably and safely. These facilities support physical well-being while promoting mental relaxation.
Between 2013 and 2024, Chollipo Arboretum provided forest experience programs to 29,632 youths and marginalized groups. Over 90% of participants reported reduced stress, emotional stability, and overall energy restoration following program participation. For youth, the programs offer career exploration opportunities through forest-related activities while also supporting psychological well-being and immune system enhancement for those experiencing stress and conflict. The program for individuals with disabilities operates as a two-day immersive experience, integrating both forest and coastal environments. Activities are customized based on disability types, including tactile plant experiences for the visually impaired and sensory engagement with scents, ocean sounds, and textures.
This program received the Encouragement Award at the 2024 Arboretum and Botanical Garden Best Program Competition, recognizing its excellence. Through collaborations with various institutions, Chollipo Arboretum continues to expand the reach and impact of forest experience education. Building on these achievements, the arboretum aims to establish a long-term educational vision that integrates its unique natural setting, combining forests and the sea. Future plans include strengthening partnerships with public institutions, identifying new beneficiary groups, and expanding programs to further promote the value of nature.

POSTER ABSTRACT

NB_P_38

The Education Programs of Daegu Arboretum, Korea

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Keywords: Forest interpretation, Education, Arboretum, Hands-on activity

Established in May 2002, Daegu Arboretum is South Korea's first urban arboretum, dedicated to enhancing quality of life by conserving native plant diversity and promoting environmental education. It provides recreational and educational activities for the community.

In 2024, its forest education programs included interpretive and special programs. Interpretive programs featured forest interpretation sessions for all ages (5,010 participants), offering guided educational sessions and forest play from March to November. Weekend family forest outings, targeted at families with young children, attracted 878 participants with weekend forest-based activities.

Special programs included a healing program and non-face-to-face forest experiences. The healing program, held Tuesdays and Thursdays from September to November for 156 participants, featured immersive plant observation and aromatic tea experiences. The non-face-to-face forest experience, accessible daily from April to November without prior registration, engaged 2,177 participants in hands-on nature-based activities such as crafts, drawing, and pinecone games.

POSTER ABSTRACT

NB_P_40

POSTER ABSTRACT

Development of Activity Education Programs for Young Children's Awareness of Environmental Issues and Understanding of Ecosystem Cycles: Soil Is a Dung Cook

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Keywords: Climate crisis , Carbon-Natural Society, Children, Recycle, Ecosystem

The world is striving to nurture citizens who are aware of and competent in addressing environmental issues, in order to overcome the climate crisis and transition toward a sustainable, carbon-neutral society. Hwanghaksan Arboretum has developed and operates a special program called "Poo to Bloom: Nature's Recycling" for the purpose of providing high-quality environmental education and services to future generations. The goal of this program is to encourage creative thinking through scientific inquiry, helping children who may lack ecosystem awareness to understand how soil and dung cycle within nature. It also emphasizes the importance of environmental protection by demonstrating how decomposing dung returns nutrients to the soil, thereby supporting plant growth. The program's introduction is designed to stimulate children's imaginations by using illustrations of various animals to explain the shapes, characteristics, colors, uses, and natural cycles of animal droppings. In the next step, groups construct animal toilets using natural materials such as tree branches and bamboo, and then decorate animal droppings using acorns. Additionally, the program includes hands-on activities where participants construct sinks using natural materials and design unique toilets featuring animal characters. The program aims to inspire children's creativity and imagination by encouraging them to visualize animals visiting the unique, beautifully decorated toilets they've created and using them naturally. Although the curriculum is a simple hands-on activity, it provides an important opportunity for children who lack prior knowledge of ecosystems to become familiar with nature. Through this experiential learning process, children can understand the fundamental principle that, unlike human-generated waste, natural waste is recycled within the ecosystem and contributes positively to the environment. In the future, the arboretum plans to develop a variety of horticultural therapy programs utilizing its diverse plant collections, aiming to support the holistic development of young children and deepen their understanding of ecosystems.

POSTER ABSTRACT

NB_P_60

Plants and People: A Portable Exhibition for Families

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Keywords: Ethnobotany, education, cultural heritage, interactive (portable) workshop

We are developing an interactive workshop about ethnobotany, the relationship between people and plants. We want to create an portable exhibition for schools and nature/science markets.

We want to show our visitors the diverse ways of the use of plants in daily life and in different cultures. With beautiful artifacts we want to display how plants have shaped human culture. The field spans cultural, domestic, religious and medical aspects and much more. We show all kinds of cultures and parts of history, but also the futuristic elements. We want to enlighten themes like: construction, paint, beauty, food, rituals, music, tools, clothing, medicine and transport.

To create a free learning space, visitors of the exhibition can choose between different games and displays, for example:
- Paint with vegetables and fruits on rice- and papyrus paper
- Smell different kind of herbs and tree's for ceremonial uses like Paulo Santo and sage
- Listen or make music made from instruments like flutes and digeridoo's
- Feel de diverse textures of clothing from cacti leather, cotton and nettle
- Create your own construction from bamboo and rubber
- Learn about natural remedies from flowers and herbs
- Drink and taste different parts of plants like tea, coconut and aloe vera
- See how seeds and plants are used as jewelry

We hope to collect memories and craftsmanship from all different parts and cultures around the globe. Together we will build a beautiful collection of ways people entangle plants in their lives.

POSTER ABSTRACT

NB_P_73

Experiential Education for Conservation of Endangered Plants: Interactive Programs at Key-Chungsan Botanic Garden

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Keywords: biodiversity conservation, botanical education, endangered plants, environmental education, experiential learning, plant conservation

Key-Chungsan Botanical Garden offers hands-on ecological education programs to raise awareness about biodiversity conservation and the protection of endangered plants. These programs aim to promote sustainable ecological education and explore how environmental education can contribute to the conservation of rare and endemic plants.

The garden operates four key programs: Endangered Species Exploration, Making Endangered Species Nameplates, Making Plant Specimens, and Making Seed Dumplings. In Endangered Species Exploration, participants join guided tours to observe endangered species and learn conservation strategies through activity sheets. Making Endangered Species Nameplates helps participants build a personal connection with plants by creating nameplates with conservation messages. Making Plant Specimens allows participants to collect, dry, and label plants, deepening their understanding of plant ecology. Making Seed Dumplings introduces the concept of seed dispersal and ecological restoration, enabling participants to create and scatter seed balls in nature.

These programs incorporate hands-on activities to support ex-situ conservation efforts and help participants understand the importance of environmental protection. This study suggests that experiential ecological education can enhance public awareness of endangered species and the need for biodiversity conservation.

POSTER ABSTRACT

NB_P_74

Developing an Indoor Arboretum Educational Program Lower Elementary Students

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Keywords: Arboretum Education, Classroom learning, Indoor forest education, Lower elementary students, Nature-based learning

The Korea National Arboretum has developed an indoor Arboretum Educational Program for lower elementary school students to cultivate a nature-friendly attitude and enhance ecological conservation awareness. This program is designed for classroom implementation and consists of seven instructional sessions. A total of 36 schools in the Gyeonggi region participated, with 2,710 students engaging in the lessons. The program was structured in alignment with the 2022 revised national curriculum in Korea. The educational content covers key ecological concepts, including the diversity of fruits and their reproductive strategies, the structural characteristics of flowers, avian identification based on distinguishing features, observing tree annual rings and drawing rings corresponding to their own age, tree and leaf puzzle-solving activities, interpretation of animal footprints to understand ecological traits, and creative forest expression through free-form artistic activities. To support effective instruction, supplementary materials—including age-appropriate photographs, YouTube video links, activity sheets, stickers, and teaching aids—were distributed to educators. A total of 54 teachers participated in a satisfaction survey consisting of 10 items measured on a five-point Likert scale. The survey assessed the appropriateness of educational themes and content, the structure of the instructional guide, the suitability of activity sheets, and student engagement. The program received a high average satisfaction score of 4.7. Teachers provided positive feedback, stating that “students enjoyed the materials,” “the content was well-suited for lower elementary students,” and “the program should continue.” Additionally, suggestions for improvement included requests for “a greater variety of photographic materials” and “online instruction by arboretum specialists.” Based on the survey results, the Korea National Arboretum plans to revise and enhance the program to further improve the quality of indoor arboretum education. Furthermore, to expand accessibility, the program will be disseminated to elementary schools nationwide beyond the Gyeonggi region.

POSTER ABSTRACT

NB_P_81

Kaunas 2022: the Role of VMU Botanical Garden in Shaping the City's Cultural Landscape

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Keywords: European Capital of Culture, botanical garden, local community, cultural events, sociocultural activities

The European Capital of Culture (ECC) 2022 title, held by Lithuania's Kaunas, gave a significant boost to the city's cultural life. During Kaunas's tenure as ECC, the VMU Botanical Garden (VMU BG) played a significant role in the city's cultural landscape. Throughout 2022, the VMU BG hosted a variety of events, including exhibitions, concerts, poetry readings, workshops, and the botanical festival "Night of Scents." These activities not only showcased the garden's rich botanical collections but also integrated cultural experiences, enhancing the BG's reputation as a vibrant cultural hub for people of all ages and social groups.

The garden's involvement in the Landscape Festival Magenta highlighted its commitment to landscape design and environmental art, strengthening the role of plants in shaping our urban environment, and promoting interdisciplinary art in public spaces.

Additionally, during the Aleksotas local community festival "A Flight in the Era of Time," an emotional map based on the experiences of people living near the VMU BG was created by the artist collective "Effetto Larsen." This artistic format connected people through stories and emotions that define the places important to them.

Through these collaborations, the VMU BG significantly strengthened its connection with the local community and encouraged the discovery of the botanical garden as a place for a wide range of sociocultural activities.

POSTER ABSTRACT

NB_P_84

POSTER ABSTRACT

Title: The Teplice Botanical Garden as a Model of Educational Transformation in Czech Botanical Gardens

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Keywords: Central Europe, Czech Botanical Gardens, Educational Programs, School Partnership

The Teplice Botanical Garden, located in the northwestern part of the Czech Republic, serves as an example of the dynamic evolution of educational activities in botanical gardens across Central Europe. Since 2019, under the leadership of a new director, the garden has undergone a significant transformation of its educational programs, shifting from traditional guided tours to innovative, experiential learning. Our goal has been to create programs and educational opportunities tailored to a wide spectrum of visitors, ranging from preschool children to senior citizens. This presentation summarizes our five years of efforts, highlighting selected programs, their benefits and drawbacks, experiences in their implementation, and feedback from participating visitors. Through the lens of our botanical garden, this case study illustrates advancements in engaging school-aged visitors, strategies for involving larger entities in program funding, and effective methods for educating school groups in the Central European region.

POSTER ABSTRACT

NB_P_96

Citizen Science-Based Study of Pollinating Insects in Gwangneung Forest

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Keywords: Pollination, Hymenoptera, Citizen Science, Bee Watchers, Gwangneung Forest

The role of insects in ecosystems is diverse, and among these roles, pollination is crucial for securing food resources for humanity. In particular, Hymenoptera insects, including bees, play an essential role as pollinators. However, recent reports indicate a decline in bee populations due to climate change. In response, the Division of Forest Biodiversity at the Korea National Arboretum has been conducting research on the characteristics of pollinating insects to support forest ecosystem conservation. To enhance pollinator conservation research, we have promoted citizen science-based monitoring. In May 2023, the research team collaborated with a citizen and expert group interested in Hymenoptera insects, forming a partnership called "Bee Watchers" with the group "Beolbolil-itneun-saramdeul." Since then, research on pollinating insects in Gwangneung Forest has been ongoing. Within the arboretum's exhibition garden, pollination activities of insects have been observed directly, documented, and photographed. Over the past two years, 22 monitoring sessions have been conducted, resulting in the collection of approximately 1,800 image data records. Moving forward, we aim to expand collaboration with citizen scientists to gather extensive data and utilize it for studying changes in pollinating insect activity.

POSTER ABSTRACT

NB_P_110

Gaining Plant Knowledge in the China National Botanical Garden (Beijing)

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Keywords: China National Botanical Garden, science popularization

The China National Botanical Garden is at the foot of Beijing's Western Hills, consisting of the South Garden (Institute of Botany, Chinese Academy of Sciences) and the North Garden (Beijing Botanical Garden), covering about 300 hectares and is open to the public, collecting and protecting more than 17,000 species of plants. As a dissemination center for China's ecological civilization and plant culture, its core missions of science popularization and education are "telling the stories of Chinese plants well" and "promoting ecological civilization".

The Garden holds various exhibitions annually, including permanent and temporary ones. The permanent exhibition in the Education Center, focusing on six sections, shows over 500 exhibits, demonstrating plants' wide application in human life. The Botanical Art Gallery collects and exhibits high - quality botanical art, shortening the distance between humans and plants both aesthetically and scientifically.

The Garden fully exerts its functions, adhering to the integrated display of plant knowledge and garden culture, improving the science popularization work mechanism, and conducting extensive activities. By integrating contents, it sets up science popularization courses with plants as the core and biodiversity conservation as the focus. It strengthens science popularization, establishes the TEP activity model, and carries out activities for different groups. It has created a comprehensive science popularization and education system in the botanic garden.

POSTER ABSTRACT

NB_P_113

Practical Use and Achievement of Promoting University Museum through Loan Boxes of NTU Herbarium

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Key words: museum, loan box, education, plant

The National Taiwan University (NTU) Herbarium, established in 1929, has played a vital role in plant collection and research for botanists from the Japanese colonial period to the present day. However, few people are aware of the true function and the purpose of this herbarium, especially for those non-specialists. In recent years, the global trend of the 'University Museum' concept has gained momentum. To align this trend and promote broader public education, we have reorganized the interior design of the NTU Herbarium. This includes the creation of exhibition rooms focused on understanding the fundamental structure of plants, exploring ethnobotanical knowledge related to daily life, and maintaining outdoor living collections featuring species from across Taiwan. Our herbarium has also developed several educational activities for various age groups. One notable initiative is the Museum Loan Box project, launched in collaborations with the NTU Herbarium and the NTU Museum of Zoology in 2013. For the plant component, fifteen themed teaching sets have been designed using museum collections, complete with lesson plans. These resources are primarily targeted at students in grades 5 to 7, with adaptable content for grades 10 to 12. To expand access to museum resources, we have conducted workshops on the us of the Museum Loan Box in remote areas with limited museum exposure, such as Lanyu and Kinmen, two offshore islands of Taiwan. Over the past eight years, the program has reached approximately 410 schools, benefiting more than 20,000 students across 20 of Taiwan's 22 counties and cities. The reuse rate of these teaching boxes has reached 98%, demonstrating both the sustainability and effectiveness of these teaching materials. Looking ahead, this program will continue to develop new teaching plans and integrate citizen science platforms, such as iNaturalist, to further extend University Museum resources to rural areas throughout Taiwan.

POSTER ABSTRACT

NB_P_121

Nature Experience Activities for the Blind in Nanjing Botanical Garden Mem. Sun Yat-Sen

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Keywords: nature experience, blind person, botanical garden

Nanjing Botanical Garden Mem. Sun Yat-Sen(NBG), the oldest botanical garden of China, has always focused on creating opportunities for more people to enter our botanical garden and experience nature. NBG has the country's first Blind Garden, and also carries out nature experience activities for the blind.

On the afternoon of November 15, 2024, a well-designed activity for blind children was underway: the teacher first led the children to observe the wintersweet, camphor, metasequoia, ginkgo by touching and smelling them, then felt the unique touch and smell of their stems, leaves and fruits. In the "find friends" game, students randomly choose a plant treasure (fruit or leaf), touch its texture, size, smell, and then describe it in words, the children quickly find the "good friend" who had the same fruit or leaf in hand by this way. In the "hearing" section, the children listened to the sounds of nature that belong only to the botanical garden. The final "taste" section ended successfully in the laughter of tasting choerospondias axillaris.

After the activity, the blind children said that through this activity, they had a new understanding of the plants they often contact in life, and they would like come to NBG again in the future.

POSTER ABSTRACT

NB_P_128

Botanical Garden as a Meeting Point for Different Communities with Nature

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Keywords: science, education, art, sports, botanical garden

There is growing societal awareness of the importance of getting people outside to connect with nature with both body and mind (Ives et al, 2018), and botanical gardens provide such opportunity. Botanical Garden of Vilnius University (VU BG) counts solid age of 244 years, has outstanding experience in interchange of science, culture and sports, and education. Thousands of visitors visit VU BG to discover over 40 educational, thematic, biodiversity, scientific, selective and other plant collections, as well natural flora of Lithuania. Events for visitors are looked at as other possibility to create conditions for different communities to meet with nature. Scientists and students, teachers and pupils, educators and botanists, artists and creators, sportsman and healthy lifestyle promoters meet here to create new relationships with the living elements of BG. Over 200 events took place indoors and outdoors here in 2024: 1) 123 educational events; 2) 50 events promoting culture, sports and healthy lifestyle; 3) 7 commercial events (concerts); 4) 15 art and natural objects exhibitions. Events are organized during all seasons of the year, aim to engage different target groups and are linked to natural science. Even Lights and Instalations Park theme during winter season is linked to nature. There were 124,3 thousand visitors in VU BG in 2024, different communities got involved here to teach and learn, to create and participate in active events, and take part in different quality of leisure. It is result of active VU BG promotion and communication with public, Vilnius Municipality and Lithuanian Centre for Non-Formal Education of Students, schools and non-profit organizations, artists unions and sports associations.

POSTER ABSTRACT

NB_P_142

Education for All: Collaboratively Building an Inclusive Learning Model with Companion Plant Kits

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Keywords: Companion plant kit, Remote learning, Disadvantaged groups, Community partnership, Independent entrepreneurs, Sustainable growth model

The Sejong National Arboretum has established a sustainable educational model, expanding access through remote learning and interactive kits. Partnering with disability-run enterprises it ensures inclusive kit production while creating new vocational opportunities. The Companion Plant Kit Industry Exhibition also supports small businesses in producing companion plant kits, boosting their income. This initiative fosters a circular educational ecosystem, reinvesting arboretum kits into learning programs. The arboretum strengthens long-term community engagement by broadening outreach and promoting equitable education.

POSTER ABSTRACT

NB_P_144

Operation of Public and Private Arboretum Education Networks (Dissemination of Educational Contents and Nationwide Arboretum Stamp Tours)

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Keywords: Arboretum, Education networks, Arboretum education, Stamp tour

Through the public and private arboretum education network, customized educational consulting (diagnosis of the educational environment and customized educational support such as educational space and manpower) and education for arboretum education capacity building for practitioners in the educational field were provided. By spreading and disseminating various educational contents of arboretum, it laid a foundation for the independence of private arboretum's education operation.
In addition, the operation of the Arboretum Integrated Stamp Tour, developed as a joint training program for arboretums nationwide, was led to raise public awareness of arboretums and boost visits.

POSTER ABSTRACT

NB_P_147

The Role and Outcomes of Public Institution and Community Collaboration Models for Education Support, Vulnerable Groups, "Boseokham Project"

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Keywords: Education Contribution, Boseokham Project, Vulnerable Groups, Community Cooperation, Sustainability, Biodiversity

This study analyzes the role and impact of the "Boseokham Project" aimed at supporting education for socially marginalized groups and revitalizing the economy in areas facing demographic extinction. "The Boseokham Project is an educational consortium involving three public institutions with distinct characteristics: Baekdudaegan National Arboretum (forests), National Institute of Ecology (ecology and wetlands), and Honam National Institute of Biological Resources (marine and tidal flats). This project provides non-face-to-face ecological education programs to ensure that all students, regardless of disabilities or economic backgrounds, receive equal education." The project seeks to enhance overall understanding of the environment through comprehensive biodiversity education, covering climate change, forests, trees, oceans, and ecosystems.

The program aims to cultivate ecological literacy and ecological awareness among youth, providing opportunities for them to grow as holistic ecological citizens. Additionally, through the production of teaching materials and technology transfer within the community, the project helps promote the economic independence of people with disabilities, positioning them as important resources for their social integration.

As an educational consortium, the Boseokham Project creates educational synergies through the exchange of human and material resources between institutions, maximizes social value, and presents strategies for sustainable social development. In particular, the project has the potential to create economic value beyond its pure educational function. This collaborative model demonstrates how the interaction between the community and the educational consortium can realize more inclusive education.

POSTER ABSTRACT

This study conducted a satisfaction survey with the participants of the Boseokham Project to examine differences in educational satisfaction and changes in perceptions based on participants' experiences with online education. The survey was conducted with teachers who guide students with disabilities, and it evaluated the impact of the online ecological education program on their educational experiences and social awareness. Through this, the study analyzed the effects of the Boseokham Project and participants' satisfaction, tracking both educational and social changes.

This research seeks to explore a paradigm shift in education for students with disabilities and offers directions for sustainable community development, demonstrating the potential for the advancement of various educational networks. Additionally, the study analyzes the process by which the Boseokham Project serves as a model that provides opportunities for social and economic independence beyond simple educational access for students with disabilities, supporting them in leading more proactive and autonomous lives in both school and the community.

The study focuses on participants of the Boseokham Project, and future research should expand the scope to include more cases to evaluate the program's effectiveness across different regions and demographics. Furthermore, long-term studies tracking the process of social and economic independence for students with disabilities are necessary.

POSTER ABSTRACT

NB_P_163

Survey on the Status of Community -Linked Education

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Keywords: expert, local resident, community-linked education, professional education

Recently, due to the deepening of regional disparities and regional imbalances, and the government is also trying to find various policies to respond to local extinction. The baekdudaegan national arboretum seeks to emphasize the importance of community-linked education as a response to population outflow and local extinction. Therefore, we collected data from related organizations and educational institutions and compared and analyzed the educational targets, contents, and operation methods. The research results confirmed that customized education reflecting regional characteristics and forest/plant resources is increasing and that resident participation programs are being utilized as an effective educational-methods. Additionally, in some organizations, the lack of professional manpower and educational infrastructure was a limitation. This study was conducted to developing professional education program on native plants that contribute to regional development, for local residents, local micro enterprises, and local farms. This study can be used as basic data for exploring future development directions for community-linked education.

POSTER ABSTRACT

NB_P_167

Forest Interpretation Expert Training Program of Gyeongsangnam-do Arboretum, Korea

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Keywords: Forest interpretation, Education, Arboretum, Professional Development

Gyeongsangnam-do Arboretum, the public arboretum representing Gyeongsangnam-do, was established in April 1993 as Banseong Arboretum and officially registered under its current name in September 2002. Home to over 3,400 plant species, the arboretum is dedicated to plant collection, conservation, and exhibition. It also features a wide range of themed facilities and programs, including the Forest Museum, Tropical & Warm-Temperate Greenhouse, Specialty Gardens, Children's Garden, and Wildlife Viewing Areas. The arboretum attracts approximately 400,000 visitors annually, serving as both an educational hub for forest learning and a relaxing recreational space.

In accordance with the Enforcement Decree of the Forest Education Promotion Act, the Gyeongsangnam-do Arboretum offers a certified training program to develop professional forest interpreters in the region. Initiated in 2009 as a basic-level course (Accreditation No. 16), the program advanced to an expert-level certification in 2013 (Accreditation No. Forest Interpretation-2012-08). By 2024, it has successfully trained 620 forest interpreters, providing residents with diverse and enriching opportunities in forest education.

The arboretum offers a tuition-free forest interpreter training program annually. Each year, 30 to 40 residents from the Gyeongsangnam-do region are selected through an entrance examination conducted in March. The comprehensive seven-month course runs from April to October, encompassing 160 hours of both theoretical and practical instruction across 25 specialized subjects. The curriculum covers essential topics such as forest interpretation principles and plant studies, ensuring that participants acquire the necessary expertise to excel as professional forest interpreters. Upon completing the coursework, trainees participate in a 30-hour field practicum, assisting professional interpreters in real-life settings. This hands-on experience equips them with practical skills and strategies for effective forest interpretation.

To successfully complete the program, trainees must pass both written and practical examinations. The written exam comprises 75 multiple-choice and short-answer questions, requiring a minimum score of 70 out of 100 to pass. The practical exam involves a 15-minute live interpretation demonstration, where candidates must also achieve at least 70 out of 100 to succeed.

Successful graduates receive an official Forest Interpreter Certification issued by the Korea Forest Service, enabling them to work as forest interpreters in national and public arboreta, natural recreation forests, and ecological parks.

POSTER ABSTRACT

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Operating Suwon Arboretum in Collaboration with Citizens: Achievements and Future Directions of the Volunteer Program

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Keywords: Citizen Participation, Public Arboretum, Suwon Arboretum, Volunteer Program, Volunteering, Human Resource Development

Suwon Arboretum operates with the vision of "Bringing a More Vibrant Nature into Everyday Life" and has been running a volunteer program since 2021, even before the arboretum's official establishment. Initially launched as the Suwon Arboretum Supporters, the program started with 37 volunteers in its first year. Through continuous expansion, participation has grown to 233 volunteers as of 2024. The early recruitment of volunteers and active citizen engagement reflect the arboretum's commitment to becoming a community-centered space.

In 2023, the program was rebranded as Susurang—a name symbolizing "moving forward together with Suwon Arboretum"—to unify and strengthen the identity of its volunteer organization.

Volunteers contribute across various fields, including plant care, guided tours, promotion, visitor assistance, and event support. Their activities are complemented by hands-on training, expert-led education, and field visits to leading institutions. Between 2021 and 2024, the program successfully expanded citizen participation and demonstrated economic benefits by reducing operational costs. However, challenges remain, such as maintaining engagement during extreme weather conditions and ensuring long-term volunteer retention.

This study underscores the importance of citizen-driven volunteer programs in sustaining arboretum operations, highlighting key achievements and future strategies. Suwon Arboretum aims to train over 400 volunteers in the next five years.

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회년기 수목장림
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화 합 | 신뢰와 배려의 마음으로 다니 결속력은 성장의 밑거름이 되었습니다. 도화의 모든 임직원은 한마음으로 화합하여 최고의 기업을 만들어가고 있습니다.

창 의 | 현재에 안주하지 않고 새로운 시각으로 보는 '창의적인 사고'로부터 생명력 있는 기술이 탄생합니다. 진취적인 행동과 창의적인 사고로 미래를 개척하는 초일류 종합엔지니어링 회사로 도약합니다

수목원 · 식물원 · 정원 [Arboretum/ Garden]

식물 유전자원 보존 · 관리 및 교육 등 다양한 기능을 갖는 공공 휴양공간


국립 세종 수목원
[Sejong National Arboretum]

국립 세종 수목원
Sejong National Arboretum

위치
세종특별자치시 세종동 일원

면적
650,000m²

도입시설
사계절 전시온실 / 분재전시관 / 감각정원 / 생활정원 / 어린이정원 / 치유원 / 치산녹화원 / 습지원 / 민속식물원 / 방문자센터 등

자연환경복원 [Environment Restoration]

환경생태복원을 통한 자연자원회복 및 생물다양성 증진


새만금 환경생태단지
[Saemangeum Enviromental Ecological Complex]

새만금 환경생태단지
Semangeum Enviromental Ecological Complex

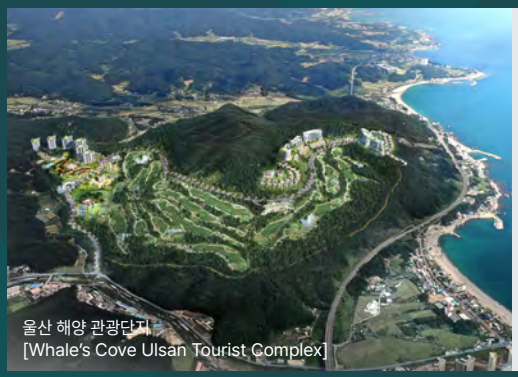
위치
부안군 하서면 장신리 일원

면적
0.78km²(23.8만평)

도입시설
습지 / 야생동물서식지 / 범람지 / 힐링의숲 / 새들의 낙원 / 초화원 / 바람개비언덕 / 전망대 / 억새체험장 생태놀이터 / 방문자센터 등

관광시설 · 관광지 · 관광단지 [Tourist Attraction / Tourism Complex]

관광객의 다양한 니즈를 충족하는 종합개발 관광거점지역


울산 해양 관광단지
[Whale's Cove Ulsan Tourist Complex]

울산 해양 관광단지
Whale's Cove ULSAN

위치
울산광역시 북구 신명동 일원

면적
1,860,000m²

도입시설
호텔 및 콘도
힐링센터
스파
상가시설
미술관
레저센터
허브가든
골프장

테마공원 · 메모리얼파크 [Theme Park / Memorial Park, etc.]

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대구대공원 (동물원)
[Daegu Great Park]

대구대공원 (동물원)
Daegu Great Park

위치
대구광역시 수성구 삼덕동 일원

면적
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(동물원 면적 : 578,582m²)

도입시설
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VR체험 동물원
피크닉가든
수중정원
숲속 치유 · 놀이원
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주최 | 충청남도 태안
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- **학 교** 101개교(초42, 중27, 고25, 대7)
- **도서관** 34개교(시립 1, 구립 8, 작은도서관 25)
- **공 원** 129개교

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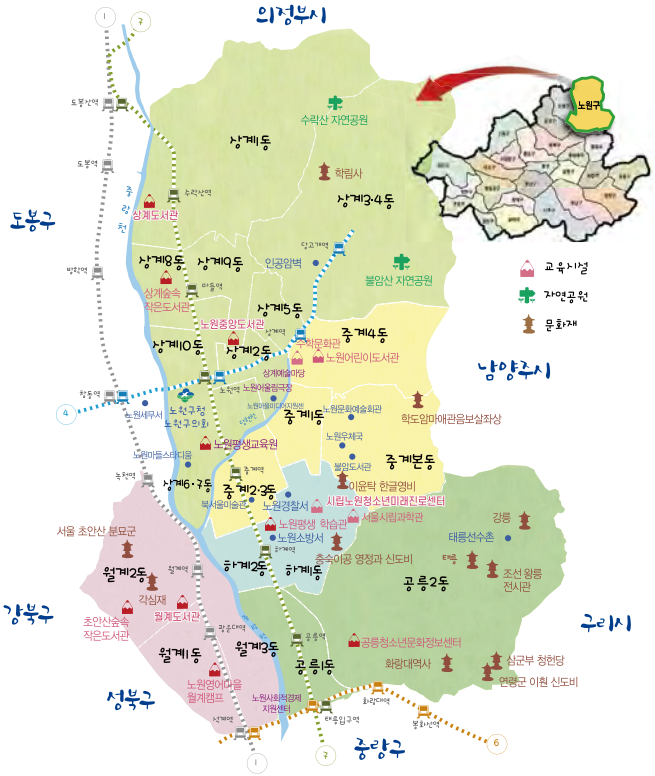
- **출 생** 1일 6.2명
- **사 망** 1일 8.9명
- **생활쓰레기 발생량** 1일 372.3톤
- **급수 사용량** 1인 1일 266리터



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