#### Implementing the Global Strategy for Plant Conservation: the particular challenges for botanic gardens in education, awareness-building and plant conservation action.

Peter Wyse Jackson, Missouri Botanical Garden, St Louis, U.S.A.





# Summary

- Background to the GSPC
- Progress, operations and major achievements



- The context of the GSPC post-2010
- Some key priorities, opportunities, tasks and challenges for botanic gardens in relation to the GSPC









Adopted by the 187 governments at the 6<sup>th</sup> Conference of the Parties to the Convention on Biological Diversity (COP) - The Hague, Netherlands, 19<sup>th</sup> April, 2002

Objective: to halt the current and continuing loss of plant diversity

Key role played by botanic gardens in the development of the GSPC



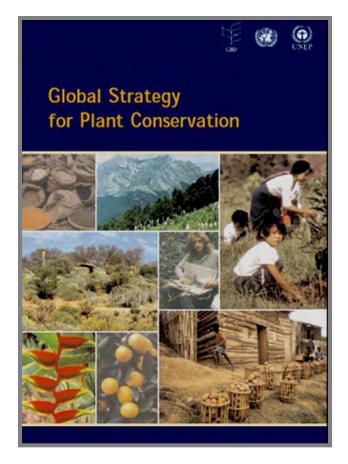
# Convention on Biological Diversity

## Global Strategy for Plant Conservation (GSPC)

•Updated for 2011–2020:

(29 October 2010, Nagoya, Japan)

To halt the loss of plant diversity worldwide by 2020

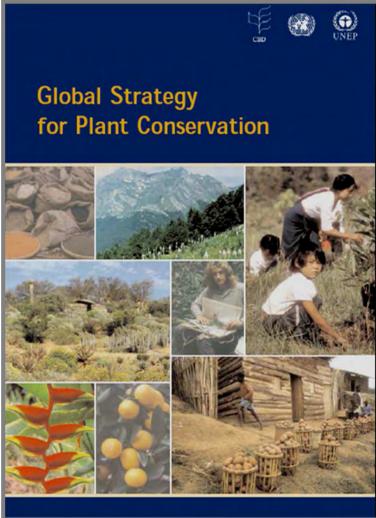




- Implementation of the GSPC is therefore a national requirement for countries that are parties to the Convention on Biological Diversity (CBD)
- The majority of countries are implementing GSPC as part of their National Biodiversity Strategies and Action Plans (NBSAPs)

## Objectives of the Global Strategy for Plant Conservation (2011-2020)

- 1. Plant diversity is well understood, documented and recognized;
- 2. Plant diversity is urgently and effectively conserved;
- 3. Plant diversity is used in a sustainable and equitable manner;
- Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on Earth is promoted;
- 5. The capacities and public engagement necessary to implement the Strategy have been developed.



### 16 Targets for 2020.

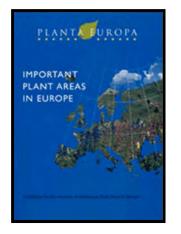
### TARGET 14 & ITS TECHNICAL RATIONALE OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION 2011-2020

• Objective 4: Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on Earth is promoted

## • Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.

- **Technical rationale**: Broad-based understanding of the role of plants in our daily lives will greatly facilitate appropriate conservation behaviour. Communication, education and awareness about the importance of plant diversity and its sustainable use are critical for the achievement of all the targets of the Strategy. Key concepts to communicate include:
- Plants are essential to all life on Earth;
- Plants are central to ecosystem products and services;
- Plants play an important role in the mitigation of climate change;
- Plants are critical to the functioning of and well-being for our everyday lives and livelihoods;
- As responsible stewards of the environment, we need to take action to conserve and sustainably use plants both wild and cultivated.
- These concepts need to be widely understood by all sectors of society, including indigenous and local communities, the business sector, media and policy-makers as well as those in all levels of formal and informal education. Consideration should be given to developing specific indicators to monitor progress towards achievement of the overall target. For example, given the strategic importance of education about plant conservation, this issue should be included not only in environmental and scientific curricula, but should also be included in broader areas of mainstream education policy such as history, politics and economics. Issues to be addressed include:
  - the over-emphasis on animals and neglect of plants in environmental education programmes
  - a need for increased teacher-training relative to plant diversity
  - a lack of opportunity to experience nature first-hand and
  - messages being lost under an overwhelming level of advertising in all media.





**Areas** 



**South Africa** 



Colombia





**New Zealand** 

**Mexico** 

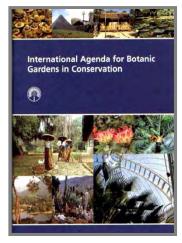
U.K.

Ireland

Some national, regional and sectoral responses to the GSPC

#### **Botanic Gardens**

**Important Plant** 



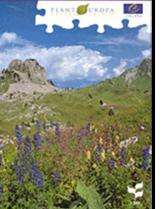


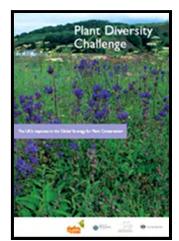
CHINA'S STRATEGY

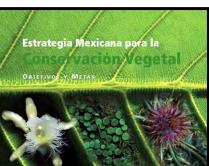
**ANT CONSERVATION** 



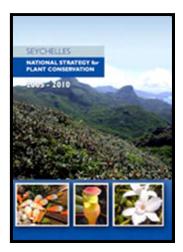








Seychelles





# Likely GSPC Stakeholders (by target)

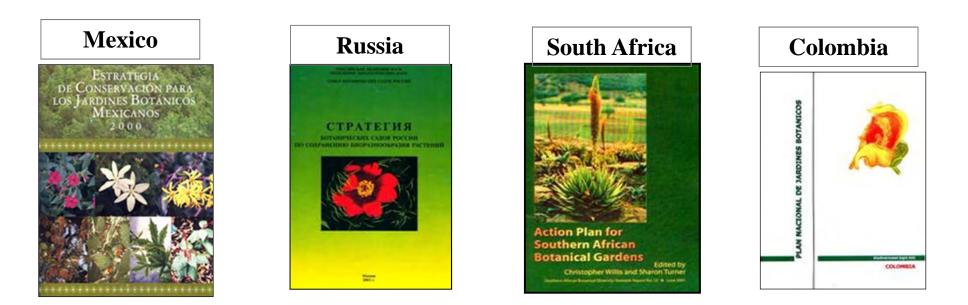
#### Botanic gardens identified as primary stakeholders in 50% of targets

#### Target

- 1 Herbaria, Botanic gardens, Bioinfomatics specialists, GBIF Focal Point, Universities with taxonomy departments, National Flora Societies
- 2 Herbaria, **Botanic gardens**, Conservation specialists, Universities, Research Institutes, National Red List Authority, IUCN Specialist Groups
- 3 Universities, Research institutes, Botanic gardens, Indigenous and local communities
- 4 Protected area managers, Ecologists, Community Based Organizations(CBOs)
- 5 Protected area managers, Universities, Research Institutes, **Botanic gardens**, Indigenous and local communities, Environmental NGOs, CBOs
- 6 Farmers and land owners, Agri-business sector, Forest managers, Logging companies, CBOs, Women's associations
- 7 Protected area managers, Botanic gardens, National flora societies, Universities
- 8 Botanic gardens, Seed banks, Universities, Research institutes, CBOs
- 9 Plant genetic resource institutes, Seed banks, Agricultural research institutes, Plant breeders, Universities, indigenous and local communities, Women's Associations, Traditional healers, Farmers' associations
- 10 Protected area managers, Quarantine agencies, Horticultural trade, Research institutes, Universities
- 11 National CITES authority, Customs officials, medicinal plant traders, plant product (timber etc.) importers/exporters, horticultural trade.
- 12 Local and indigenous communities, plant product importers /exporters, medicinal plant and horticultural trade, Women's associations, Traditional healers
- 13 Local and indigenous communities, Universities, Women's associations
- 14 Botanic gardens, Teachers, Environmental NGOs, Communication specialists, Universities, Media groups, CBOs
- 15 Universities, Schools, Research Institutes
- 16 All stakeholders



Some regional and national botanic garden strategies and action plans, linking to the GSPC





- A significant success of the GSPC has been its adoption by individual institutions and organisations
- The next slide illustrates, for example, some of the activities of the Missouri Botanical Garden in support of particular GSPC targets.



#### **GSPC** at the Missouri Botanical Garden – some examples

- Target 1: World Flora On-line project
- Target 2: Red List assessments worldwide
- Target 3: Propagation protocols for threatened plants; Methodologies to understand plant richness
- Target 4: 150,000 acres protected in 11 sites in Madagascar
- Target 5: Important sites for plant diversity identified in Madagascar; Management plans for 3 parks (5 million acres) in Peru, Ecuador and Bolivia
- Target 6: Sacred Seeds Program
- Target 7: Inventories of protected areas in Bolivia, Madagascar, Peru
- Target 8: Native plant Garden with 700 spp. New seedbank. Threatened plant gardens developed in Nicaragua and Vietnam
- Target 9: Research on sustainable use of medicinal plants in Latin America and Vietnam
- Target 10: Research on control of invasive plants in U.S. midwest
- Target 11: Highlighting illegal trade in ebony in Madagascar
- Target 12: Community based conservation in Vietnam, Bolivia, Peru and Madagascar
- Target 13: Repatriation of local and indigenous knowledge in Peru
- Target 14: 95,000 children participate in Garden's annual education programs in the US and abroad
- Target 15: International Professional Development Fellowships; Training courses in conservation & sustainable development
- Target 16: Garden hosts conference for the Global Partnership for Plant Conservation





# Key Achievements of the GSPC to date

- Raised profile and priority for plant conservation
- Greater recognition of the vital roles of botanic gardens (and of BGCI)
- Coherent set of common goals and targets
- Strengthened linkages between national and international initiatives in plant conservation
- Key initiatives undertaken
- The following slides illustrate some initiatives that are currently underway to achieve particular GSPC Targets.



- Target 1 for 2020 calls for the development of An online flora of all known plants
- This will be achieved in part through the compilation of existing Floras and monographs but will also require new plant systematic research to identify and fill gaps where current knowledge is lacking.





#### World Flora On-line – Project launch



## World Flora Online -An International Consortium





International World Flora Online planning meeting - July 2012, St Louis, Missouri



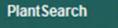
**Target 2:** An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action



BGCI > Plant search

Plant search

**BGCI's** online database 'PlantSearch' provides a means to monitor the achievement of Target 8 by botanic gardens by recording what rare or endangered plant species are included in ex situ collections worldwide.



This database is compiled from lists of living collections submitted to BGCI by the world's botanic gardens. The database presently includes over 575,000 records.         Information on threat status of each tax is provided by a direct link to IUCN's 1997 and 2006 Red Lists. Further nomenciatural and bibliographic information is provided through the link to the TROPICOS database maintained by the Missouri Botanic Garden. Additional references are available in the Listing of Plants of the World section provided by our link to the Australian New Crops website.         The database is also linked to lists of medicinal plants, crop wild relatives and CITES listed plants.         Enter terms in as many - or as few - fields as you like.         Search for plants:       Search by conservation status:         Genus:       Ceratozamia         UCN Red       IUCN Red         List 2006:       - Please select - •         Please select - •       •         Which IUCN list should I choose?       •         Crop Wild Relative:       • Please select - •         Medicinal plants       •         New Zealand threatened plants       •         Induct more       •         Medicanal plants       •         Induct more       •         Medicinal plants       •         New Zealand threatened plants       •         Induct more       •         Medicinal plants       •	Locate rare and threatened plant species in cult	tivation around the world us	sing our unique PlantSearch database.	
nomenclatural and bibliographic information is provided through the link to the TROPICOS database maintained by the         Missouri Botanic Garden. Additional references are available in the Listing of Plants of the World section provided by our link to the Australian New Crops website.         The database is also linked to lists of medicinal plants, crop wild relatives and CITES listed plants.         Enter terms in as many - or as few - fields as you like.         Search for plants:       Search by conservation status:         Genus:       Ceratozamia         IUCN Red       - Please select          List 2006:       - Please select          Species:       IUCN Red         List 1997:       - Please select          Crop Wild Relative:       - Please select          Medicinal plants       PLEASE NOTE: To protect rare and valuable plants, the garden locations of plant species cannot be revealed. You can contact gardens via BGCI using the 'Request More Info' link in the the results.         Mexican threatened plants       Find outmore         Mexican threatened plants       Find outmore         GTTES list       Target 8 monitoring for botanic gardens         GTTES list       Target 8 monitoring for botanic gardens		llections submitted to BGC	I by the world's botanic gardens. The data	base
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Using plant search | Mapping applet Add Your Plants

Target 8: At least 75 per cent of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes







+10% of world's flora already included in RBG Kew - Millennium Seed Bank Partnership

## **GSPC** and **Climate** Change

GSPC targets becomes even more challenging due to climate change

Likely impacts of climate change on species?

 Increased risk of extinction among 20-30% of plant and animal species is likely if the global temperature increase exceeds 1.5 – 2.5°C

– UNFCCC (2008)

#### **Organizational structures and GSPC Coordination:**

## CBD's 1<sup>st</sup> International Liaison Group meeting on the GSPC met 5-7<sup>th</sup> October, 2003, Co. Kerry, Ireland

**Recommendations included:** 

- i) the establishment of a flexible coordination mechanism for the GSPC and
- ii) create a global partnership for plant conservation.





- In 2004 CBD established
- a coordination mechanism, comprising
  - International Liaison Group meetings
  - National focal points
  - Global Partnership for Plant Conservation
  - The CBD Secretariat



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- a coordination mechanism, comprising

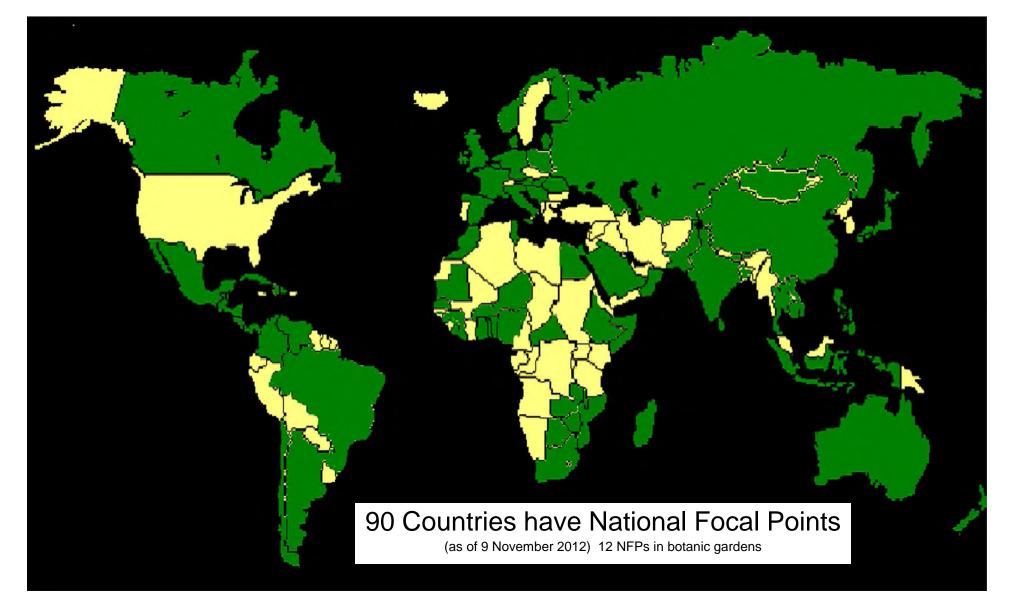
International Liaison Group meetings

- National focal points
- Global Partnership for Plant Conservation
- ◆The CBD Secretariat

Very significant, as it allowed, for the first time, botanic gardens and nongovernmental organisations direct inputs and influence on CBD / GSPC priorities and implementation.



## Countries with GSPC National Focal Points

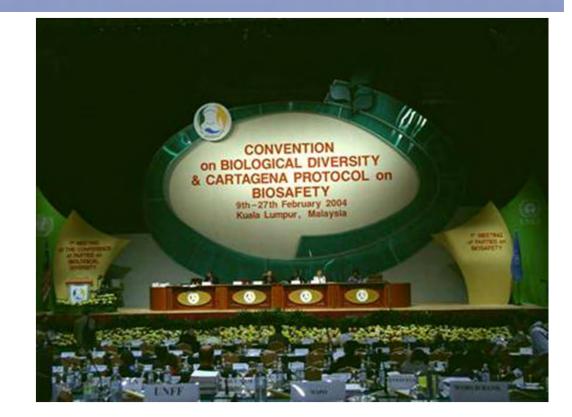


# The Global Partnership for Plant Conservation

A statement of the stat

- Launched at COP7,
- February, 2004
- Kuala Lumpur, Malaysia

Aim is to provide support for the worldwide implementation of the Global Strategy for Plant Conservation



# **The Global Partnership for Plant Conservation**

#### • 47 MEMBER ORGANISATIONS TO DATE

- Asociación Latinoamericana y del Caribe de Jardines Botánicos
   (ALCJB)
- BioNET International
- Bioversity International
- Botanic Garden and Botanical Museum Berlin-Dahlem, Germany
- Botanic Gardens Conservation International (BGCI)
- Canadian Botanical Conservation Network (CBCN)
- Center for Plant Conservation, U.S.A.
- Chinese Academy of Sciences Botanic Garden Network
- Conservatoire et Jardin botaniques de la Ville de Genève, Switzerland
- Earthwatch
   Earthwatch
- European Botanic Gardens Consortium
- Fauna and Flora International (FFI)
- Food and Agriculture Organization of the United Nations (FAO)
- Global Diversity Foundation (GDF)
- Global Biodiversity Information Facility (GBIF)
- Global Invasive Species Programme (GISP)
- IUCN The World Conservation Union Species Survival Commission
- Ø Jardí Botànic de la Universitat de València, Spain
- Jardín Botánico Viera y Clavijo, UNESCO Chair in Biodiversity, Las Palmas de Gran Canaria, Spain
- Joint Nature Conservation Committee, U.K. (JNCC)
- Ming's Park and Botanic Gardens, Australia
- Missouri Botanical Garden, St Louis, U.S.A.

0	Muséum National d'Histoire Naturelle, Paris, France
0	National Botanic Gardens of Ireland
0	National Museum of Natural History - Smithsonian Institution, Washington D.C., U.S.A. (NMNH-SI)
0	New York Botanical Garden, New York, U.S.A.
0	New Zealand Plant Conservation Network
0	People and Plants International (PPI)
0	Planta Europa
0	Plantlife International
0	PRONAPLAMED project, University of Costa Rica
0	Rede Brasileira de Jardins Botânicos (RBJB)
0	Red Latinoamericana de Botánica
0	Red Nacional de Jardines Botánicos de Colombia (RNJB)
0	Royal Botanical Gardens, Hamilton, Ontario, Canada
0	Royal Botanic Gardens Kew, U.K.
0	Royal Botanic Garden, Edinburgh, U.K.
0	Society for Ecological Restoration
0	Society for Economic Botany
0	South African National Biodiversity Institute (SANBI)
0	Species 2000
0	Traffic
0	UNEP World Conservation Monitoring Centre
0	University of Oxford Botanic Garden & Harcourt Arboretum
0	World Agroforestry Centre, ICRAF
0	WWF International (WWF)
0	Wuhan Botanic Garden, China

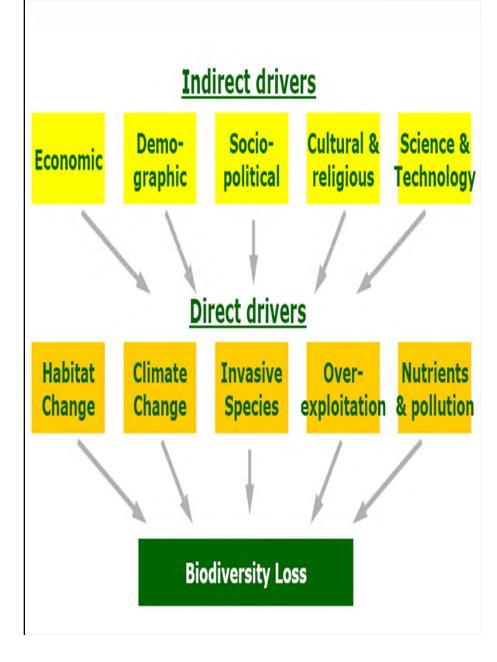
# CBD's 2010 target

- Reduce the rate of loss of biodiversity by 2010
- Despite the commitment to this target by the world's governments, we failed to achieve it
- Why?

## Making CBD relevant to a broader community

- What is the problem?
  - The CBD is compartmentalized, squeezed into the boundaries of its mandate, with little influence beyond those limits.
- Yet the causes of biodiversity loss are clearly beyond the mandate of the CBD.
  - The causes of biodiversity loss are within the productive sectors, tied to our consumption patterns and energy use,
  - They are driven by poverty and trade and a failure to internalize the costs of environmental degradation

## **Drivers of Biodiversity Loss**



# Making biodiversity conservation relevant to a broader community

- If we are to achieve our targets for biodiversity conservation there will be a greater need to integrate biodiversity considerations into
  - economic thinking
  - planning processes
  - the climate change strategies and
  - actions on equality and livelihoods



# Outcomes:

- Adoption of
  - new Strategic Plan for Biodiversity (20 targets for 2020)
  - updated Global Strategy for Plant Conservation
  - Protocol on Access and Benefit Sharing (Nagoya Protocol)

### Strategic Plan for Biodiversity 2011-2020, and Aichi Biodiversity Targets







- COP 10 Decision X/2 on a revised and updated Strategic Plan
- Strategic Plan adopted at the 10<sup>th</sup> Conference of the Parties of the Convention on Biological Diversity in Nagoya, Aichi, Japan in October, 2010.
- It provides the overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system.
- The Strategic Plan is due to be incorporated into National Biodiversity Strategies and Action Plans within two years.





# 2020 Biodiversity Target

- Take effective and urgent action to halt the loss of biodiversity by 2020
- in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services,
- thereby securing the planet's <u>variety of life</u>, and contributing to <u>human well-being</u>, and <u>poverty eradication</u>

## Aichi Biodiversity Targets





- 20 headline international targets to be achieved by 2020 (or 2015).
- Strategic goals
- A. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- B. Reduce the direct pressures on biodiversity and promote sustainable use
- C. Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- D: Enhance the benefits to all from biodiversity and ecosystem services
- E. Enhance implementation through participatory planning, knowledge management and capacity-building

## HIGHLIGHT TARGETS OF THE CBD STRATEGIC PLAN TO ACHIEVE BY 2020:

Eliminate subsidies harmful to biodiversity.

Halve, or bring close to zero, the rate of loss of all natural habitats.

Sustainably manage and harvest all fish and invertebrate stocks and aquatic plants.

Reduce pollution to levels that are not detrimental to ecosystems and biodiversity.

Control or eradicate prioritized invasive alien species.

Minimize anthropogenic pressures on coral reefs.

Conserve at least 17% of terrestrial and 10% of coastal and marine areas in protected zones.

Prevent the extinction of known threatened species.

Restore at least 15% of degraded ecosystems.



## The Global Strategy for Plant Conservation

Without plants there is no life.

The functioning of the planet, and our survival, depends on plants. The GSPC seeks to halt the continuing loss of plant diversity.



#### The GSPC objectives and targets

Objective I: Plant diversity is well understood, documented and recognized

Target 1: An online Flora of all known plants.

Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action.

Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy developed and shared.

Objective II: Plant diversity is urgently and effectively conserved

Target 4: At least 15 per cent of each ecological region or vegetation type secured through effective management and/or restoration.

Target 5: At least 75 per cent of the most important areas for plant diversity of each ecological region protected, with effective management in place for conserving plants and their genetic diversity.

Target 6: At least 75 per cent of production lands in each sector managed sustainably, consistent with the conservation of plant diversity.

Target 7: At least 75 per cent of known threatened plant species conserved in situ.

Target 8: At least 75 per cent of threatened plant species in *ex situ* collections, preferably in the country of origin, and at least 20 per cent available for recovery and restoration programmes.

Target 9: 70 per cent of the genetic diversity of crops including their wild relatives and other socio-economically valuable plant species conserved, while respecting, preserving and maintaining associated indigenous and local knowledge.

Target so: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded. Objective III: Plant diversity is used in a sustainable and equitable manner

Target 11: No species of wild flora endangered by international trade.

Target 12: All wild-harvested plant-based products sourced sustainably.

Target 13: Indigenous and local knowledge, innovations and practices associated with plant resources, maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care.

Objective IV: Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on earth is promoted

Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.

Objective V: The capacities and public engagement necessary to implement the Strategy have been developed

Target as: The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy.

Target a6: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy.

## **Brochure on the updated GSPC** published by BGCI in 2012.

It includes links to the Biodiversity Strategy and Aichi targets



### There is a desperate need for Education to address Threats to Plant Diversity

The following are the main causes identified of the loss of plant diversity. Addressing the loss of plant diversity caused by these factors will require effective education, public awareness and communication strategies to be implemented.

- **Unsustainable Agriculture** agricultural development, cash-crops, plantations, cattle ranching, over-grazing, slash & burn and shifting cultivation
- Climate change
- **Over-collecting** of medicinals, ornamentals, non-timber forest products, fuelwood, charcoal production, resin tapping
- **Tourism** including resort and skiing developments and leisure activities
- **Natural disasters** volcanic eruptions, typhoons and hurricanes
- Fire
- **Deforestation** including logging and plantation forestry
- **Mining** mining, mining exploration, oil pipelines, quarrying

- **Population growth** population pressure & migrations, urbanisation, residential developments, roads, golf courses, off-road vehicles, changes in land tenure
- Industrial developments including waste disposal and pollution
- **Invasives** plants, animals, pathogens (eg. *Phytophthora*)
- Dams/ hydroelectric developments - including irrigation
- **Political conflicts** including military operations
- Ecological/biological threats ecological isolation and small plant population inviability
- Salinization & desertification incl. soil erosion
- Hunting

Botanic gardens - centres for education and public awareness of plant conservation and the need for environmental protection and sustainability.



Botanic gardens worldwide receive +250 million visitors each year

Image: © Bian Tan/BGCI

## **Botanic gardens – a worldwide network**



Worldwide distribution of botanic gardens (2008) 2574 gardens included

# Remarkable growth in education role of botanic gardens, and education in botanic gardens

- 1970s and 1980s
- Labels on (some) plants
- Student classes for university teaching
- A very occasional education staff member (often part-time on temporary funding)

#### • THEMES

• Education about plants



- TODAY
- Most significant botanic gardens worldwide have education staff and many have special Education Departments or Divisions
- THEMES
- Children's Education
- Adult education
- Education for sustainability
- Biodiversity education
- Informal education
- Public environmental awareness
- Advocacy on environmental issues
- Teacher training
- Home gardening support
- Education about plants
- Science education
- Primary, secondary, tertiary & post-graduate education & training
- Education for sustainable development
- Environmental literacy
- Outdoor education
- Education and the social role of botanic gardens
- Capacity building for biodiversity conservation
- Training in taxonomy
- Policy development support
- Lifelong learning
- Inquiry-based science education
- Education for plant conservation
- Interpretation for sustainability
- Environmental education research

Influential role of Botanic Gardens Conservation in helping to grow and shape education in botanic gardens worldwide since its establishment in 1987.

BOTANIC

GARDENS

New look for Boots! The 1st of our special issues Make your own signs See Article 3 Red Thundercloud in Edinburgh See news up date page 16 A game for your garden See Article 7

February 1993 Issue Seven

Education for Conservation



# **Current Trends in Environmental Education**

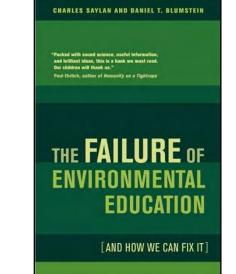
Are education, awareness and communication needs for plant conservation being addressed?

- One of the current trends within environmental education seeks to move
  - from an approach of ideology and activism
  - to one that allows students to make informed decisions and take action based on experience as well as data.
- Within this process, environmental curricula have progressively been integrated into governmental education standards.
- Some environmental educators find this movement distressing and a move away from the original political and activist approach to environmental education while others find this approach more valid and accessible.



Charles Saylan and Daniel T. Blumstein: *The Failure of Environmental Education (And How We Can Fix It)*, published by the University of California Press, 2011

- "[We] like to think we are doing a great job educating our kids about the environment, but there has been a major disconnect between raising awareness about the environment and taking action to reduce environmental degradation."
- "We believe that students should be taught to preserve the Earth."



- "Environmental education has failed to keep pace with environmental degradation."
- 'Education has to be an important part of the solution to environmental destruction."
- "Neighbourhood recycling programs and plastic bag bans are great but unlikely to save us from serious impacts of global climate change. Actions must be commensurate in magnitude to the problems they are intended to mitigate. Environmental education must nurture the social awareness and engagement necessary to convert words and ideas into measurable action."
- The authors recommend much more integration of environmental education into the overall curriculum in schools, rather than teaching it separately.

### An exploration of future trends in environmental education research

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This article describes future trends in environmental education (EE) research based on a mixed-methods study where data were collected through a content analysis of peer-reviewed articles published in EE journals between 2005 and 2010; interviews with experts engaged in EE research and sustainability-related fields; surveys with current EE researchers; and convenings with EE researchers and practitioners. We discuss four core thematic findings: (1) EE researchers are highlighting the importance of collective and community learning and action; (2) EE researchers are placing increased emphasis on the intersection of learning within the context of social–ecological communities (e.g. links between environmental quality and human well-being); (3) a pressing need exists for research conducted with urban and diverse populations; and (4) research around social media and other information technologies is of great interest, yet currently is sparse.



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### Some possible priority directions for botanic garden (research in) environmental education

- Research on the importance of <u>collective and community</u> <u>learning and action;</u>
- Research on the <u>intersection of learning</u> <u>within the context of social-</u> <u>ecological communities</u> (e.g. links between environmental quality and human wellbeing);
- Need for research conducted with urban and diverse populations;
- Need for research around social media and other information technologies.



# **Capacity Building**

# Building capacity for plant conservation will be crucial for the achievement of the **GSPC** objectives and targets by 2020

The educational approach of botanic gardens includes capacity building

Specific cross-cutting GSPC Objective & Target related to Capacity Building:

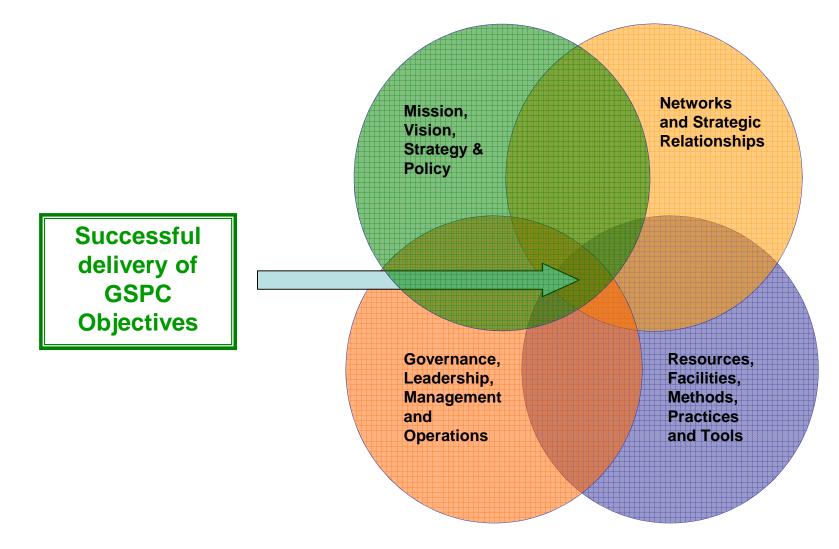


## Objective 5: The capacities and public engagement necessary to implement the Strategy have been developed

Target 15: The number of trained people working with appropriate facilities sufficient according to national needs, to achieve the targets of this Strategy.



# Capacity Building needs:





# **Developing a GSPC Toolkit**

CBD COP 7\* requested the development of a GSPC toolkit

 to assist Parties in integrating the targets into their strategies, plans and programmes

\* Decision VII/10

# **GSPC** Toolkit – **Supporting Capacity Building**

#### Plants 2020

#### A GSPC toolkit

- About the GSPC
- Global implementation
- National plant conservation strategies
- Regional plant conservation strategies
- Capacity building
- Implementing the GSPC targets
- Tools and resources
- Acknowledgements
- Contact us

The Global Partnership for Plant Conservation

#### Plants 2020 Convention on **Biological Diversity** Supporting the implementation of the **Global Strategy for Plant Conservation** Search Plents 2020 Choose language A GSPC toolkit About the GSPC English **Global** implementation National plant conservation Updates and new strategies resources Regional plant conservation strategies Four leading Capacity building botanical gardens A toolkit to support national and regional Implementing the GSPC to create first targets implementation of the Global Strategy for Plant Tools and resources online catalogue of Conservation all plants Acknowledgements Contact us This website has been developed on the basis of guidance from the Conference The Royal Botanic of the Parties to the CBD and recommendations from meetings of the GSPC Gardens, Kew (RBG Kew). Add page here Liaison Group the Royal Botanic Garden 🕨 The Global Partnership for Edinburgh (RBGE), The Users are encouraged to submit additional material to make it as comprehensive **Plant Conservation** New York Botanical and useful as possible. Garden (NYBG) and the Add page here Please check back regularly for updates and new information Missouri Botanical Garden (MBG), have announced New: The 'Guide to the GSPC' - a simplified introduction to the plans to develop the World objectives and targets of the GSPC is now available in French FIGER and Spanish, as well as English - download your preferred More news articles > language version here. English French You can also download a fiver on the GSPC here:

Visit our YouTube channel and watch videos related to plant conservation

If you would like to contribute to the toolkit, please contact us.

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#### **GLOBAL STRATEGY FOR PLANT CONSERVATION A GUIDE** TO THE GSPC **ALL THE TARGETS, OBJECTIVES AND FACTS**

**Compiled by Suzanne Sharrock** 

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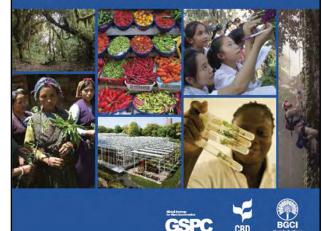
BGCI













SMCP









## Key to success in the achievement of the GSPC:

GSPC is now well established as the accepted international framework to guide policy and practice in plant conservation

**Development of individual botanic garden responses to the GSPC will be crucial** 

Without this engagement we cannot hope to achieve the 2020 targets

# Education at the Missouri Botanical Garden



Education at the Missouri Botanical Garden



Over the last year 95,000 children participated in education programs at the Missouri Botanical Garden







William T. Kemper Center for Home Gardening 1991



Education programs for children, adults, teachers

Doris I. Schnuck Children's Garden "A Missouri Adventure" 2006









# Sustainability



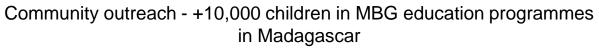
- Sustainability at the Missouri Botanical Garden:
  - Plastic pot recycling
  - Sustainable parking lots
  - Single stream recycling
  - LEED certified buildings
  - Sustainable energy
  - Composting
  - Green Teams
  - Earthways Center promoting sustainability
    - (e.g. Green Business Challenge)
  - Upcoming 'Biodiversity Challenge'



- The Shaw Nature Reserve - 2,400 acres of Ozark Border landscape
  - native plants
  - conservation
  - prairie restoration
  - re-connecting with nature







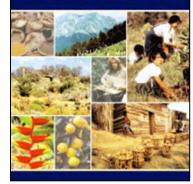






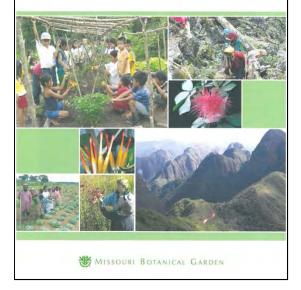
School garden project in a Yanesha community, Peru 📲 🍘 🦉

#### Global Strategy for Plant Conservation



#### The Global Partnership for Plant Conservation

Missouri Botanical Garden Contributions to the Implementation of the Global Strategy for Plant Conservation



## **Capacity Building:** Training components in Ecuador, Peru and Bolivia

	1983-2005	2006-2011
Field-based courses and		
internships	224	780
Undergraduate theses	131	91
Graduate studies	26	22
Research fellowships	111	50
Other specialized training (including park guards)	915	4,749

In Bolivia, Ecuador and Peru (2000-2011), MBG

reached ca. 20,000 children and adults in rural and indigenous communities through environmental education programs and training in sustainable development activities.



#### Fellowships for professional development at Missouri Botanical Garden

**Fellowships granted** 

Elizabeth E. Bascom Fellowships for Latin American Women in Botany Established in 1999	50
Alwyn H. Gentry Fellowships for Latin American Botanists Established in 1999	13
Missouri Botanical Garden Fellowships Established in 2008	10
Shirley A. Graham Fellowships in Systematic Botany	6

and Biogeography Established in 2010

