THE GLOBAL STRATEGY FOR PLANT CONSERVATION 2020

Tuesday, 16 April 2013

International legislation pre-1992:

World Heritage Convention

Convention on International Trade in Endangered Species of Fauna and Flora (CITES)

Convention on Wetlands (Ramsar)

International legislation pre-1992:

World Heritage Convention

Convention on International Trade in Endangered Species of Fauna and Flora (CITES)

Convention on Wetlands (Ramsar)

International legislation post-1992:

Convention on Biological Diversity

UN Convention to Combat Desertification

UN Framework Convention on Climate Change

Agenda 21: Programme of Action for Sustainable Development

Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture

FAO International Treaty on Plant Genetic Resources for Food and Agriculture

World Summit on Sustainable Development – Plan of Implementation

Regional instruments and strategies, e.g. EU Habitats Directive and the European Commission's European Biodiversity Strategy

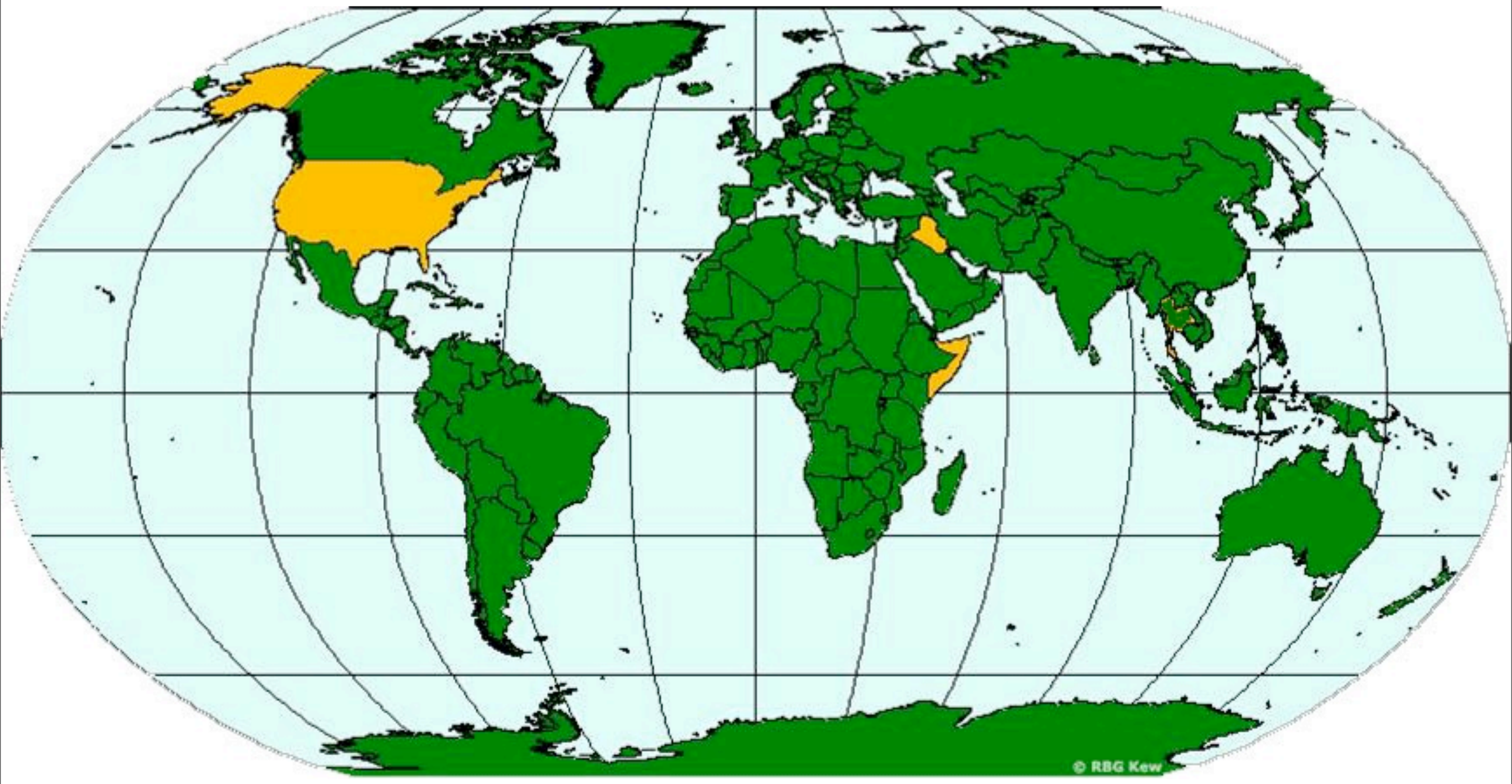
National Biodiversity Strategies and Action Plans

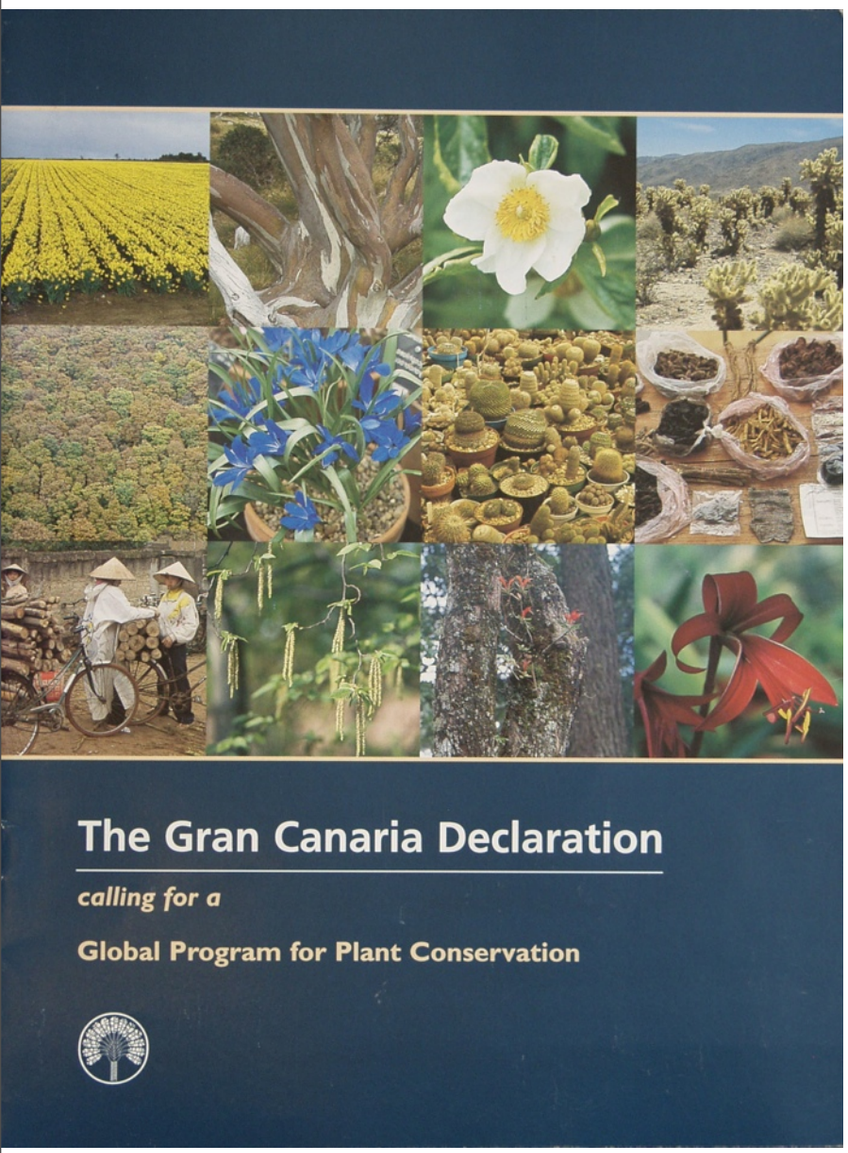
The objectives of the CBD

1. The **conservation** of biological diversity
2. The **sustainable use** of its components
3. The **fair & equitable sharing** of the benefits arising out of the utilization of genetic resources

Parties to the CBD

Non-party – The Holy See, Iraq, Somalia, United States of America



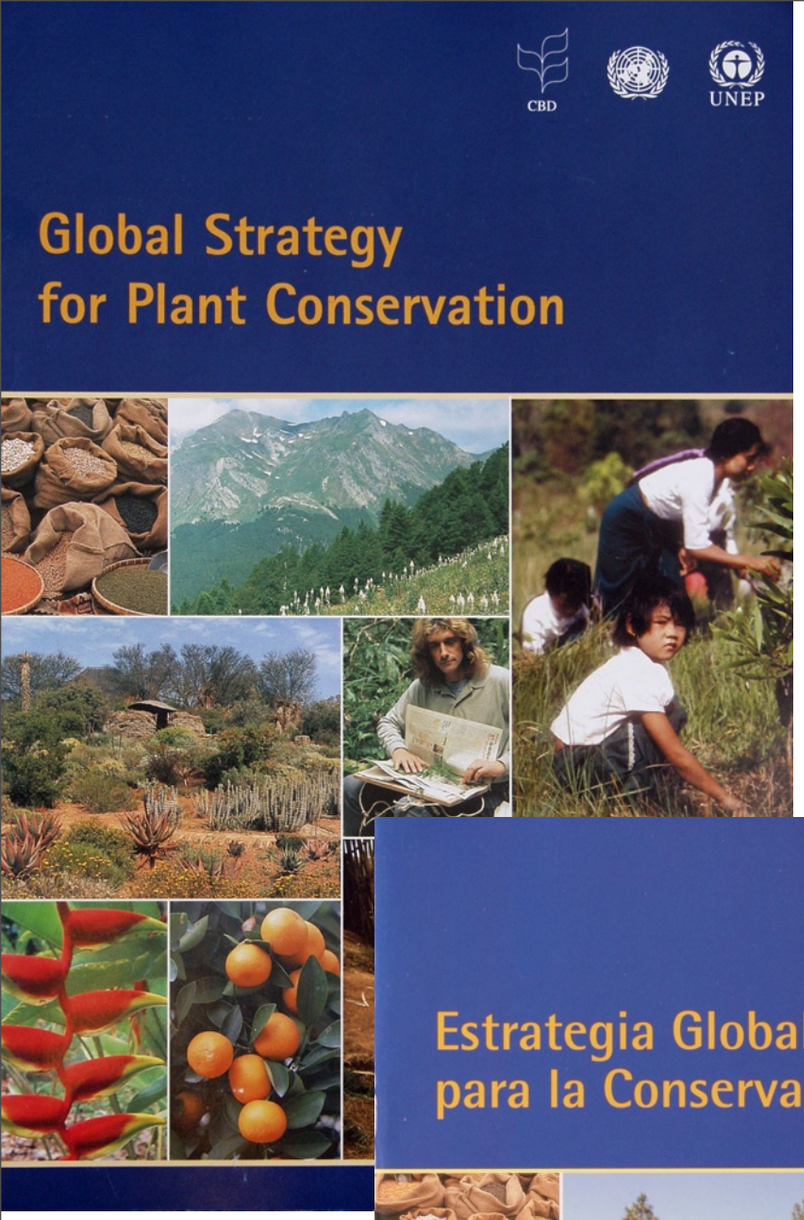


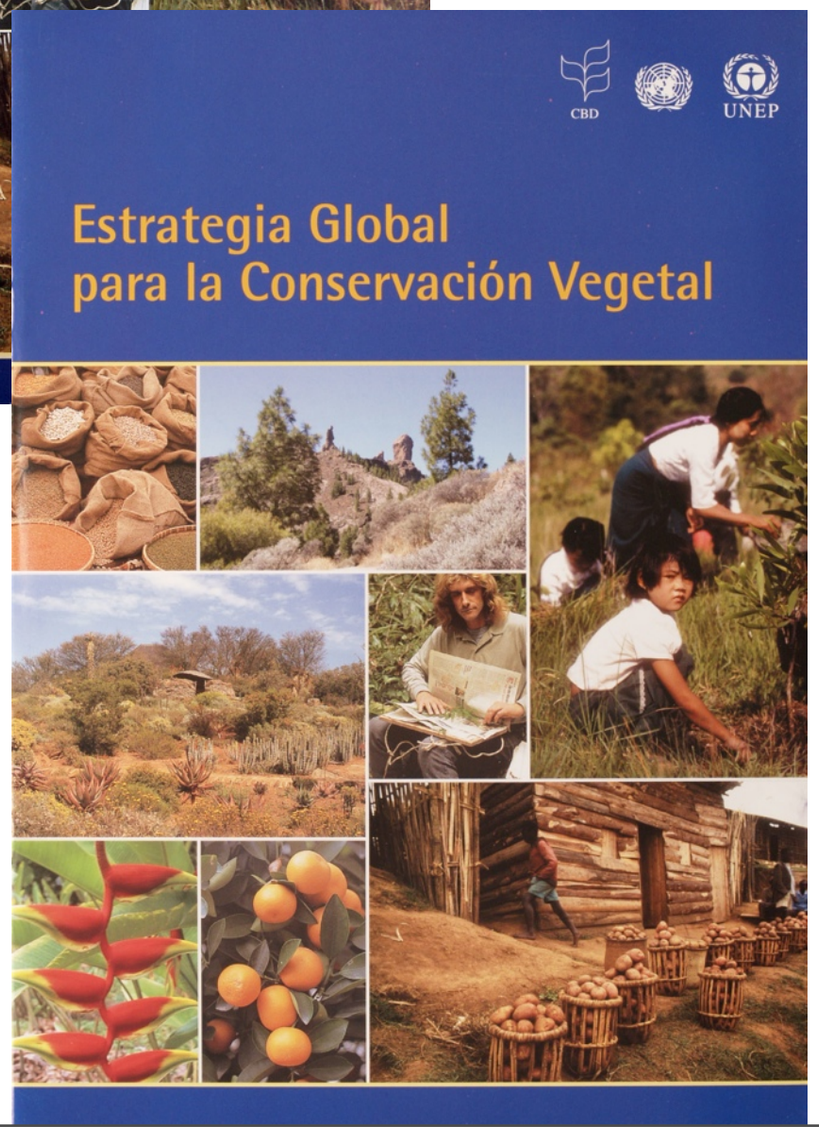
Royal Botanic Garden, **Edinburgh** (Stephen Blackmore)
Jardin Botanico Canario Viera y Clavijo, Las Palmas de **Gran Canaria**, Spain (David Bramwell)
Royal Botanic Gardens, **Kew** (Peter Crane)
National Programme for Biodiversity Conservation and Genetic Resources, **Brazil** (Braulio Dias)
Plants Committee, IUCN Species Survival Commision and International Centre for Nature Conservation, **New Zealand** (David Given)
Genetic Resources Science and Technology Group, International Plant Genetic Resources Institute, **Italy** (Toby Hodgkin)
Jardin Botanico Nacional de Cuba, **Cuba** (Angela Leiva)
American Association of Botanical Gardens and Arboreta and Flagstaff Arboretum, **Arizona** (Nancy R. Morin)
National Botanical Research Institute, Lucknow, **India** (P. Pushpangadan)
Missouri Botanical Garden, **USA** (Peter H. Raven)
Insituto Alexander von Humboldt, Bogota **Colombia** (Cristian Samper)
DIVERSITAS and Institute of Ecolgy, National University of Mexico, UNAM, **Mexico** (Jose Sarukhan)
National Botanic Gardens and National Herbarium, **Malawi** and Commonwealth Science Council, UK (Jameson Seyani)
East African Plants Specialist Group, IUCN Species Survival Commission and National Museums of Kenya, **Kenya** (Stella Simiyu)
Moscow Division of Botanic Gardens Conservation International and Moscow main Botanical Garden, Russian Academy of Sciences, **Russia** (Igor A. Smirnov)
Botanic Gardens Conservation International (Peter Wyse Jackson)

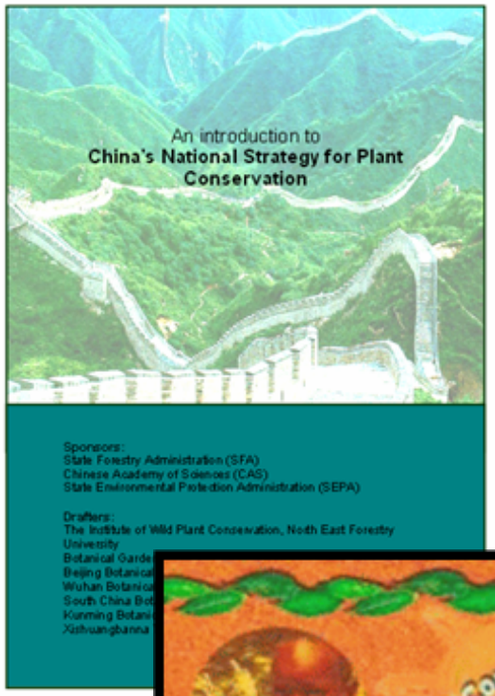
Global Strategy for Plant Conservation

Adopted unanimously by the 187 governments
at the 6th Conference of the Parties to the Convention on
Biological Diversity (COP) –
The Hague, Netherlands, 19th April, 2002

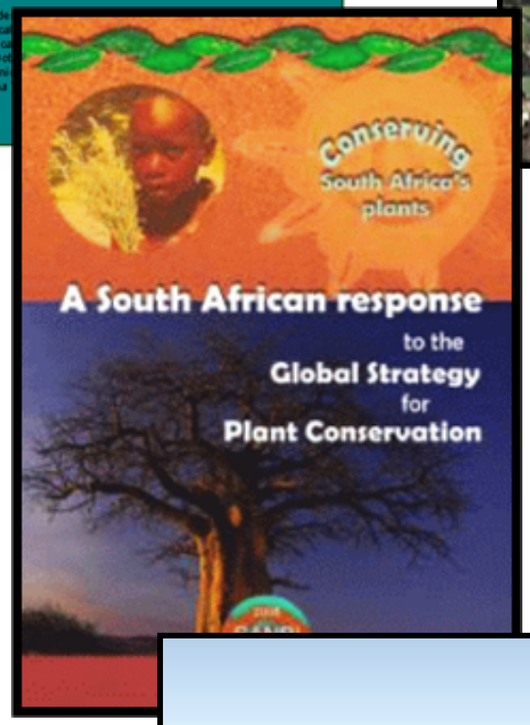
GSPC Objective: to halt the current and continuing loss of plant diversity

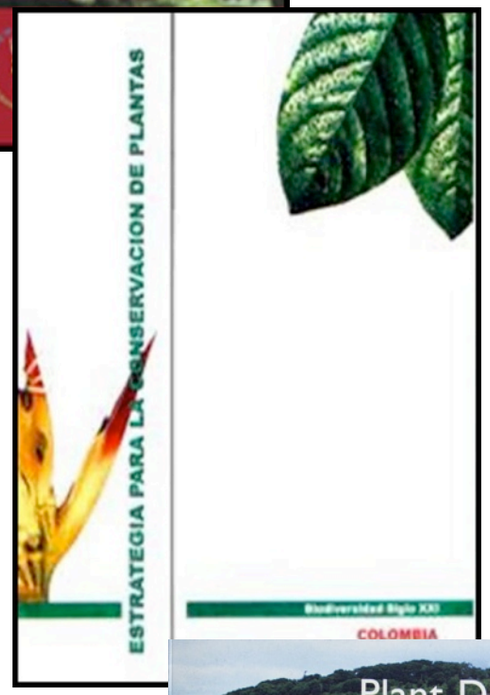

CBD
UNEP
Global Strategy
for Plant Conservation

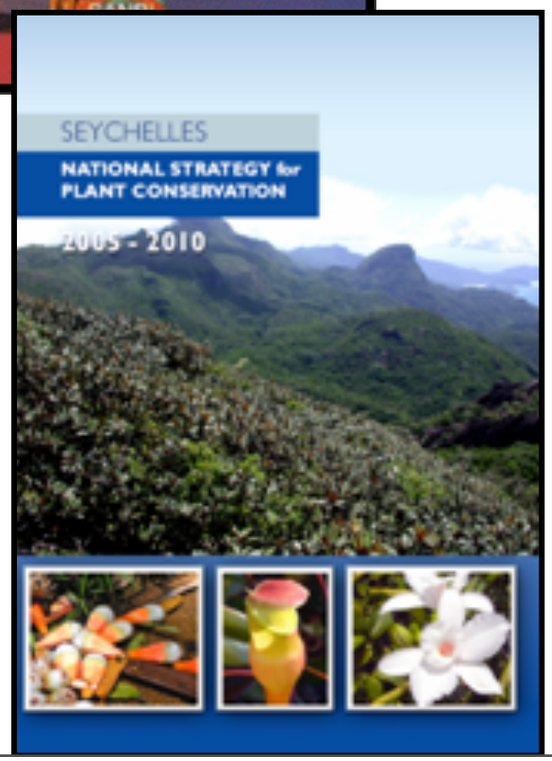

CBD
UNEP
Estrategia Global
para la Conservación Vegetal

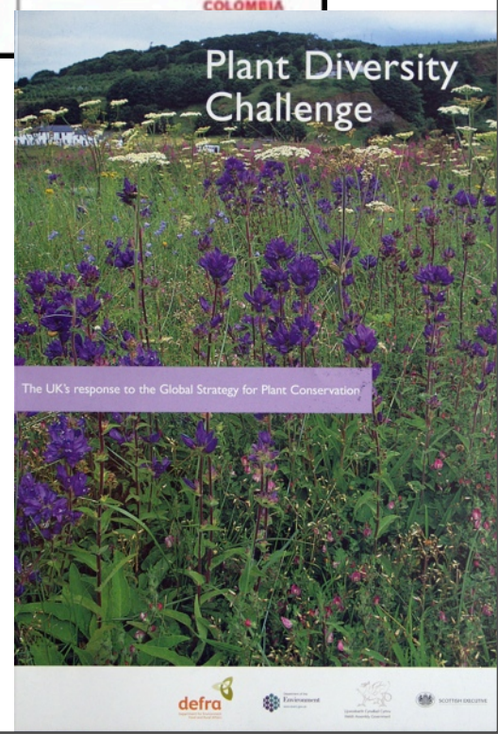

An introduction to
China's National Strategy for Plant Conservation
Sponsors:
State Forestry Administration (SFA)
Chinese Academy of Sciences (CAS)
State Environmental Protection Administration (SEPA)
Drafters:
The Institute of Wild Plant Conservation, North East Forestry University


GLOBAL STRATEGY FOR
PLANT CONSERVATION WORKSHOPS:
SUMMARY REPORT


Conserving
South Africa's
plants
A South African response
to the
Global Strategy
for
Plant Conservation


ESTRATEGIA PARA LA CONSERVACION DE PLANTAS
COLOMBIA


SEYCHELLES
NATIONAL STRATEGY for
PLANT CONSERVATION
2005 - 2010


Plant Diversity
Challenge
The UK's response to the Global Strategy for Plant Conservation
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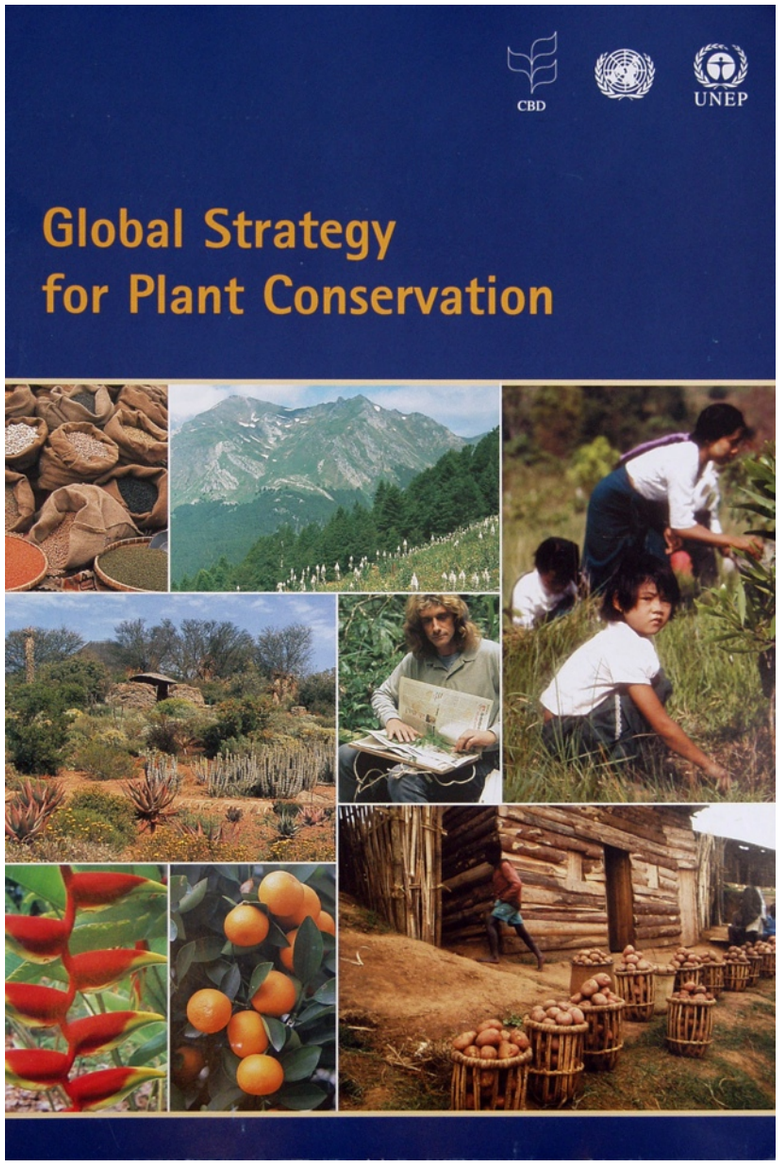
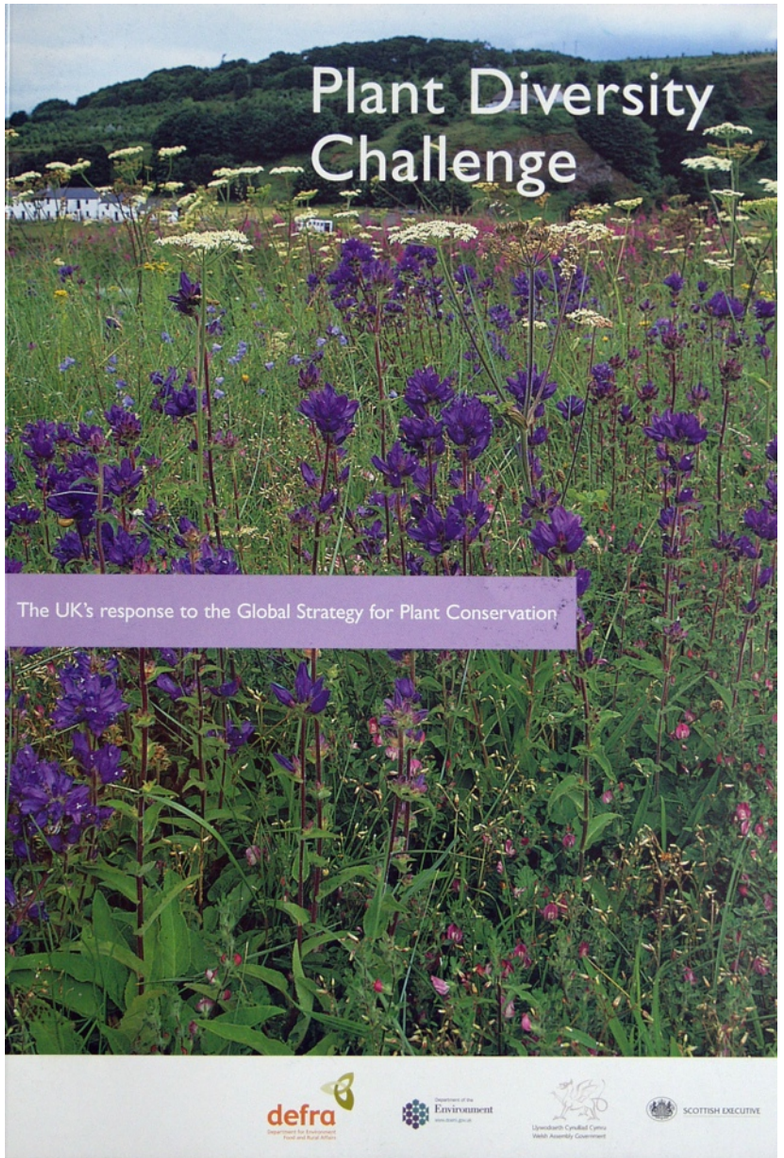
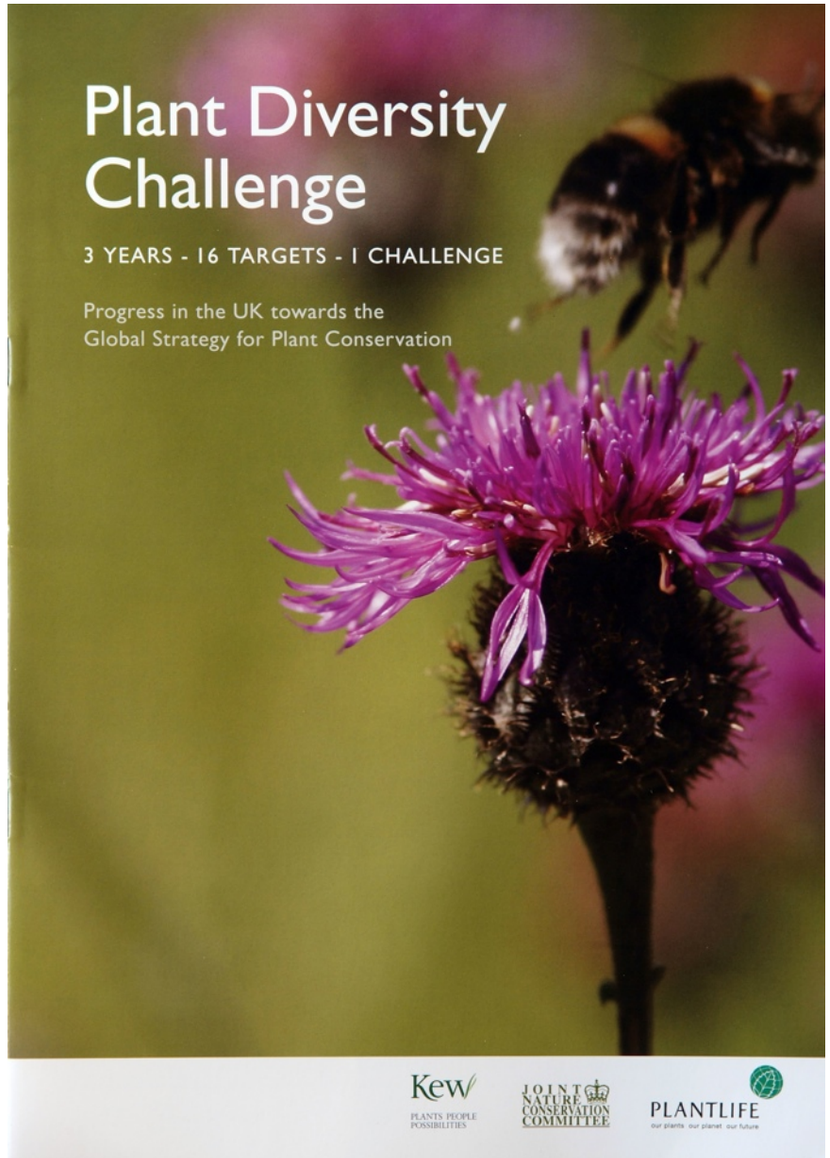
Progress in the UK







What was new about the GSPC?

- 16 outcome-orientated targets to be achieved by a set date

- First ever internationally agreed targets in biodiversity conservation

- Recognised as an innovative model approach to target setting for the CBD

- Unique integration of national and international initiatives in plant conservation

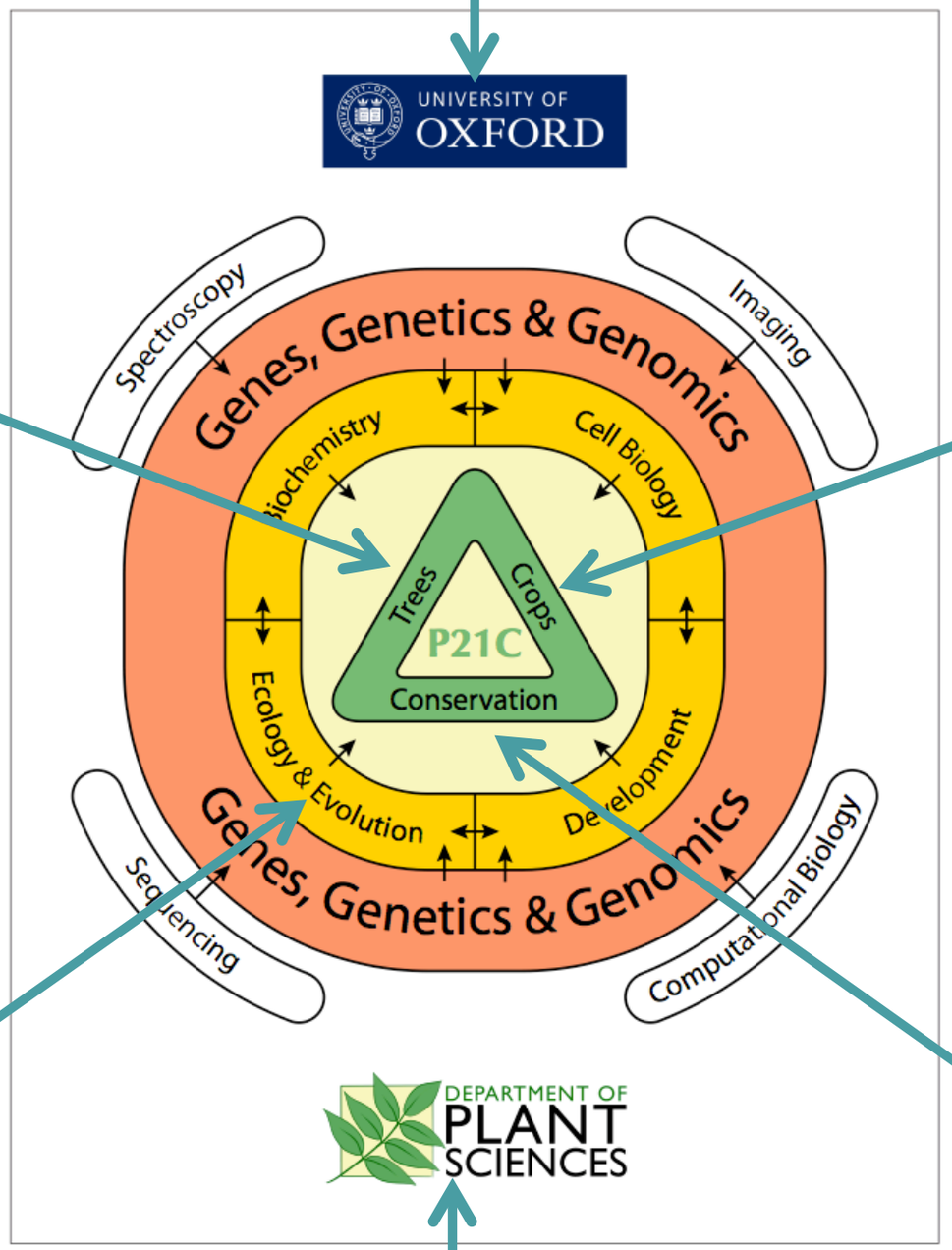
The GSPC provides a framework of action at global, regional, national & local levels to *inter alia*

- ▲ facilitate development of global consensus of key objectives
- ▲ focus research on key generic issues
- ▲ set standards for plant conservation
- ▲ mobilise support
- ▲ facilitate collaboration

Target 14

Targets 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, & 13

Targets 6, 9, 11, 12, & 13



Targets 1, 2, 3, 4, 5 ,7, & 10,

Targets 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, & 15

Targets 1, 14, & 15

The GSPC believes in *inter alia*

- the ecosystem approach as adopted by the CBD
- the principle of access & benefit-sharing as provided by the CBD
- local knowledge and expertise
- the linkage between *in situ* and *ex situ* conservation
- linking science to social and economic issues
- improving communication

GSPC 1 – five objectives with 16 targets to be hit by 2010

1. Understanding & Documenting plant diversity

2. Conserving Plant Diversity

3. Using plant diversity sustainably

4. Promoting education & awareness about plant diversity

5. Training & building capacity for plant conservation

www.plants2020.org/

TARGET	WORLD	UK
1 – Global checklist		
2 – Preliminary assessment of conservation status		
3 – Scientifically tested conservation protocols		
4 – 10% of land protected		
5 – 50% of important plant areas protected		
6 – 30% of production areas managed for conservation		
7 – 60% threatened species conserved in situ		
8 - 60% threatened species conserved ex situ		
9 – 70% genetic diversity of crops conserved		
10 – Control strategies in place for 100 worst weeds		
11 – No species endangered by trade		
12 – 30% plant derived products from sustainable supplies		
13 – Halting the loss of local knowledge		
14 – GSPC included in formal education		
15 – next generation of specialists trained		
16 – Networks established		

The 10th Conference of the Parties to the Convention on Biological Diversity (COP) - decision X/17 Nagoya, Japan, 18th October, 2010
http://www.cbd.int/decision/cop/?id=12283

GSPC 2 – 5 objectives with **16 new targets** to be hit by **2020**

1. Plant diversity is sufficiently **understood** & documented to enable a sustainable future

2. Plant diversity is urgently and effectively **conserved**

3. Plant diversity is used in a **sustainable** and equitable manner

4. **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 are developed

Objective 1

Plant diversity is sufficiently **understood** and documented to enable a sustainable future

Targets 1-3

Original Target 1 – A widely accessible working list of known plant species, as a step towards a complete World flora

The original target was 85% complete by 2010 and the remaining 15% was part-complete. More taxonomists are required and the Global Taxonomic Initiative is critically important

TARGET 1

An on-line flora of known plant species

Progress to May 2008

Table 1. Progress towards Target 1 of the GSPC.

Group	URL	Accepted species listed
Bryophytes	http://mobot.mobot.org/W3T/Search/most.html	13,370
Ferns and fern allies	http://homepages.caverock.net.nz/~bj/fern/	12,838
Cycads	http://plantnet.rbgsyd.nsw.gov.au/PlantNet/cycad/wlist.html	279
Conifers	2007 annual checklist www.catalogueoflife.org	1,016
Ephedra	www.kew.org/wcsp/	65
Gnetum	www.kew.org/wcsp/	29
Welwitschia	www.kew.org/wcsp/	1
Ginkgo	www.kew.org/wcsp/	1
Total non-flowering plants		**27,599**
Flowering plants	Currently available—see Appendix in Taxon online issue	140,341
Flowering Plants	Being compiled, on course for completion by end 2007 (Asteraceae by 2010, see text)	34,156
Total flowering plants	(estimated working list available by end of 2007, see text)	174,497
Total		**202,096**

Gaps in the working list

- 177,785 species are yet to be integrated into the working list of which 133,000 (70% of the gap) are in just 33 families (see first half of this lecture for the list)
- Most of the families (and the vast majority of the species) yet to be listed are widespread cosmopolitan or pan-tropical groups

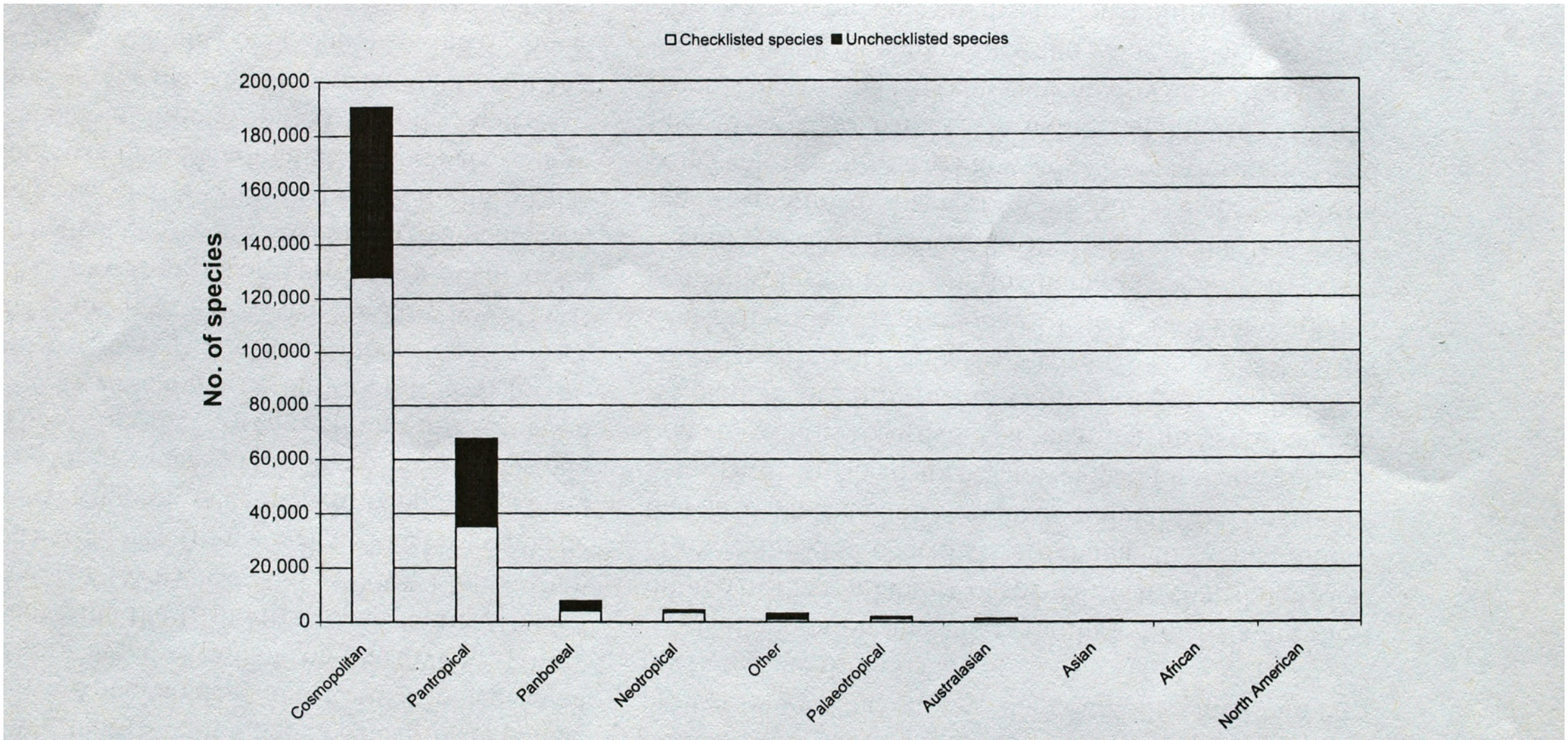


Fig. 3. Proportions of listed and unlisted species in the different distribution patterns. Numbers of listed species derived from online working lists; estimates of species numbers in families without working lists estimated from Stevens (2006).

Possible reasons why some families have not yet been worked on and thus lists not completed and vice versa

Since 9 of the 10 largest families have been completed size is not a problem (and the 10th family, the Asteraceae, is being completed at present)

Although most of the groups yet to be listed are pan-tropical or cosmopolitan, most of the pan-tropical or cosmopolitan groups have already been completed

Among the unlisted groups are some ancient groups (Apiaceae), ethno-botanicaly important (Apocynaceae, Brassicaceae & Solanaceae), widely cultivated ornamentals (Ericaceae, Boraginanceae, Ranunculaceae etc) scientifically important (Proteaceae) dominated by one large genus (Solanaceae, Moraceae, Ericaceae)

Actual reasons why some families have not yet been worked on and thus lists not completed

Lack of taxonomic expertise (just 120 people from 20 countries have worked on the list to date)

Existing expertise being employed elsewhere such as flora writing

The tyranny of the RAE and high-impact journals

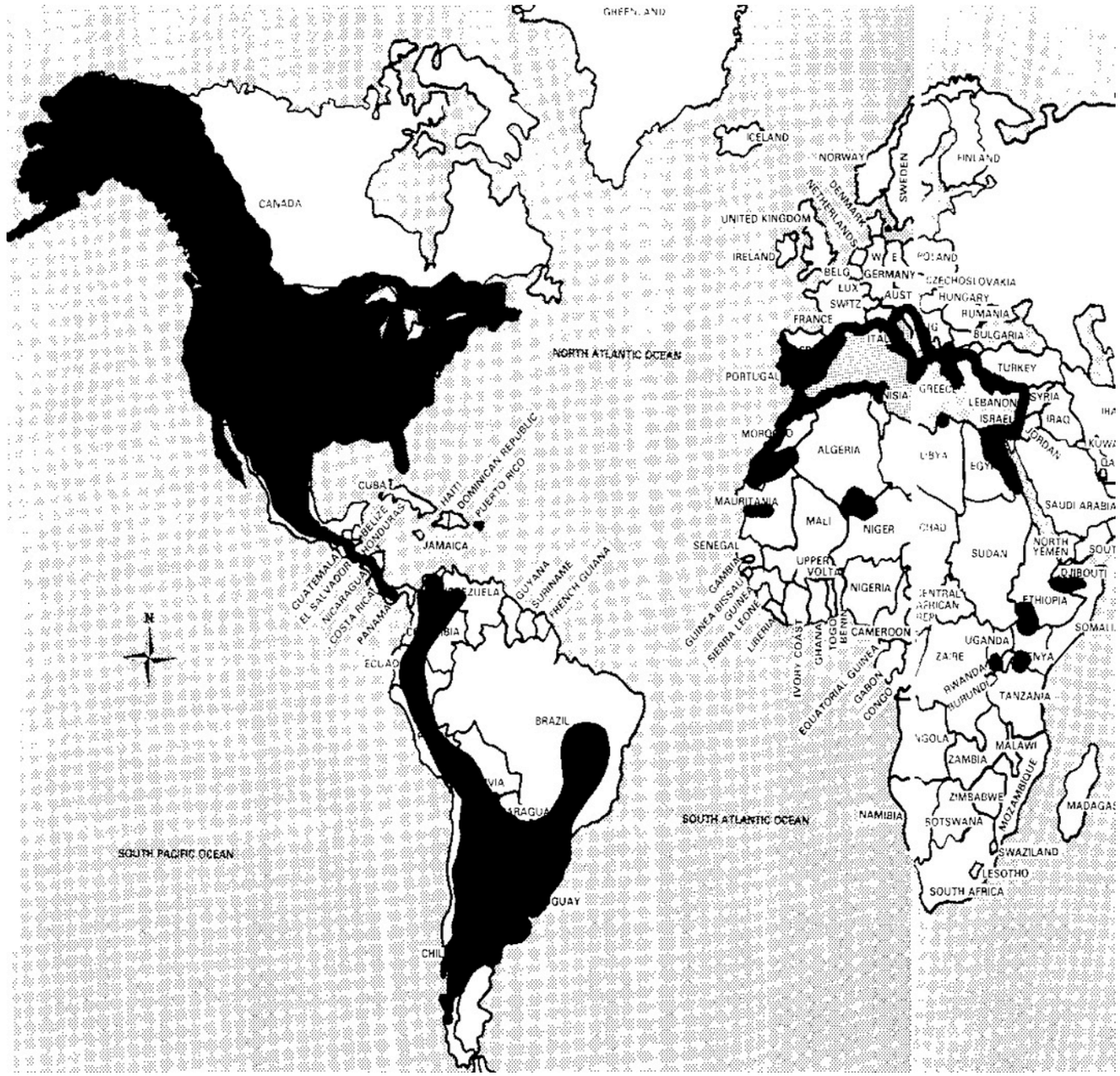
Perfectionist taxonomists **"A *man would do nothing if he waited until he could do it so well that no one would find fault with what he has done."*** Cardinal Newman

A monograph of Lupins, Colin Hughes

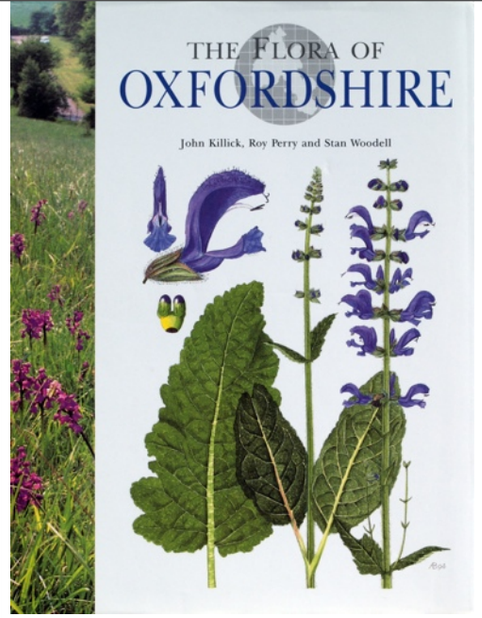
A monograph describes all the species in a genus

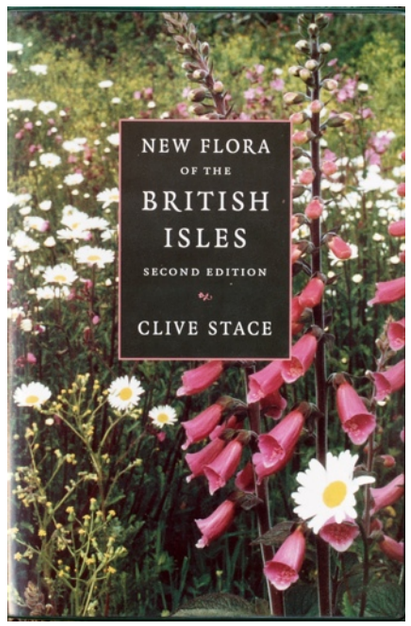
Lupinus
Fabaceae

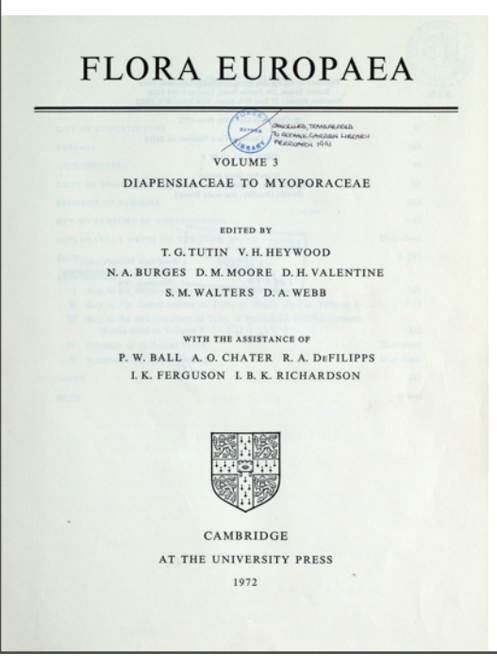
- **Amphiatlantic distribution**
- **35 countries**
- **Monograph- Agardh (1875)**
- **1800 species names for c.250 species**
- **Flora treatments e.g. California, Intermountain Basin, Paraguay**

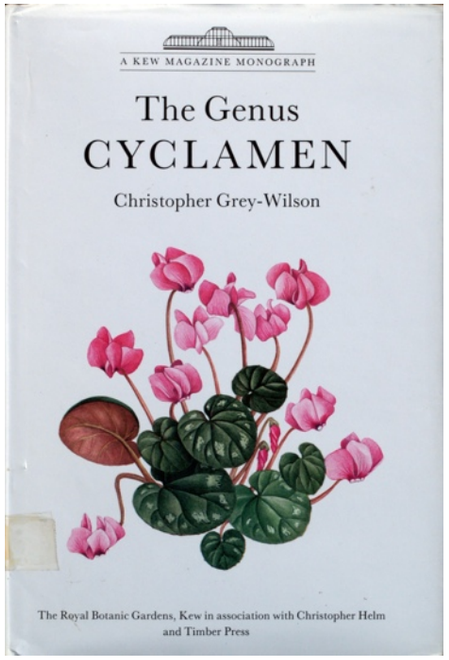


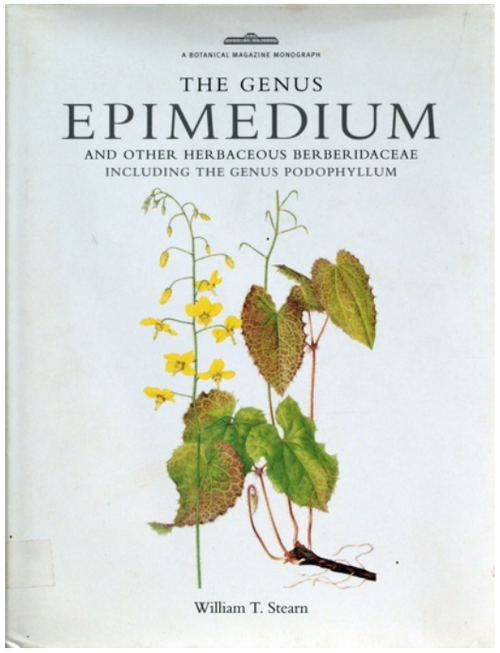
Regional Floras, Generic monographs & World checklists

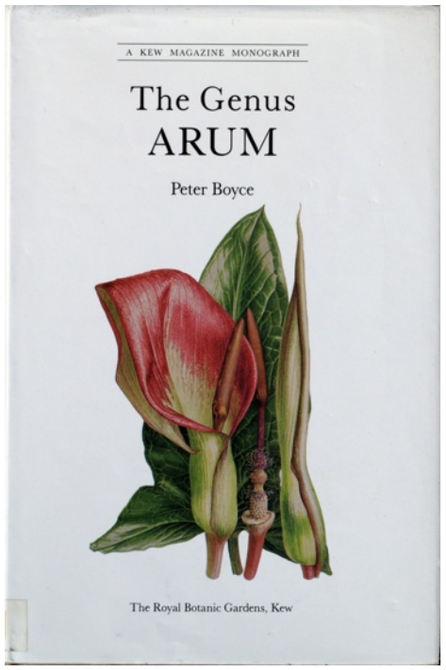


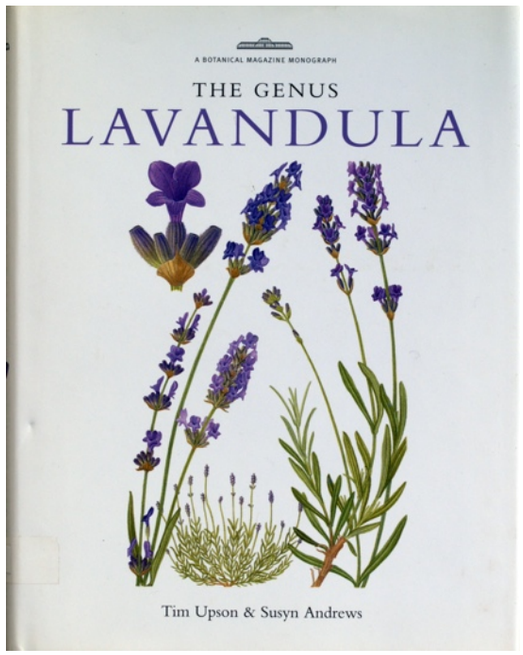


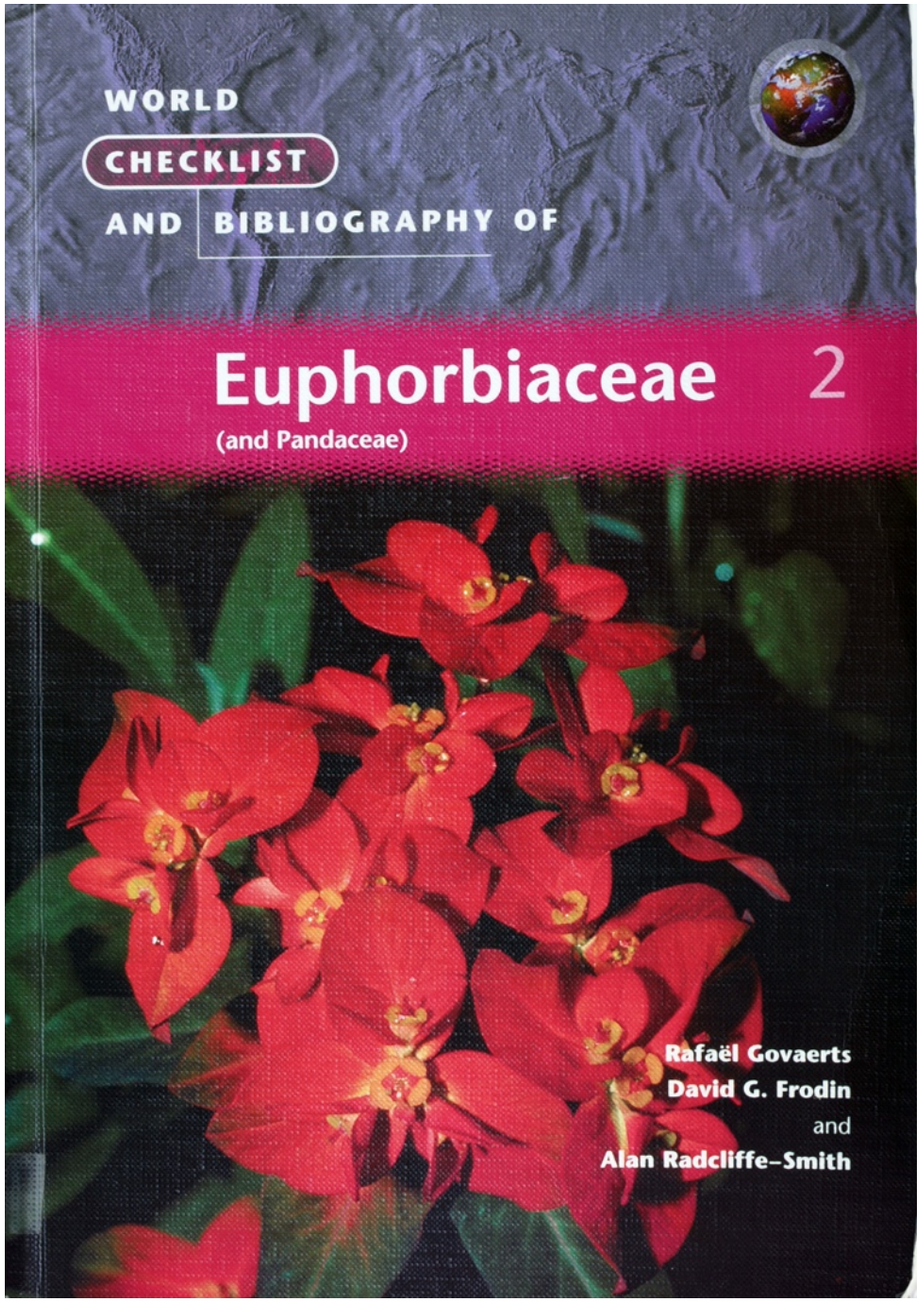












The International Plant Names Index

Search Plant Names | Search Authors | Search Publications

IPNI Overview
- About the Index
- Understanding the data
- FAQs
- Statistics
- Mission Statement

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About IPNI

The International Plant Names Index (IPNI) is a database of the names and associated basic bibliographical details of all seed plants, ferns and fern allies. Its goal is to eliminate the need for repeated reference to primary sources for basic bibliographic information about plant names. The data are freely available and are gradually being standardized and checked. IPNI will be a dynamic resource, depending on direct contributions by all members of the botanical community.

IPNI is the product of a collaboration between The Royal Botanic Gardens, Kew, The Harvard University Herbaria, and the Australian National Herbarium

NEWS

December 2006

- New output and download formats available.
- LSID (Life Science Identifiers) resolution
- Get the IPNI browser buttons
- Data improvement underway. Find out about what is going on.
- Scanning and typographical errors found and corrected during the standardisation process are listed.

February 2006. Redesigned site goes live

New features:

- Improved appearance of all search and results pages
- You can now edit your search to refine your results - click on 'edit search' in any results page to go back to your search and make changes

UK Checklists 2006

		2002	2004	2006
FUNGI	Basidiomycotes	**No**	**No**	**Yes** - 2005
	Ascomycetes and other families	**No**	**No**	**No**
LICHENS		**Yes**	**Yes** – revised 2002/03	**Yes**
PROTISTS	Myxomycotes	**Yes**	**Yes**	**Yes**
ALGAE	Charophytes (stoneworts)	**Yes**	**Yes**	**Yes** - updated annually
	Freshwater and terrestrial algae	**Yes**	**Yes** - 2nd edition 2003	**Yes**
	Marine algae	**No**	**Yes** - 2003	**Yes** – 2nd edition 2006
PLANTS	Vascular plants (seed plants & ferns)	**Yes**	**Yes**	**Yes** - updated annually
	Bryophytes (mosses & liverworts)	**Yes**	**Yes**	**Yes** – updated 2005

At Kew a project has begun to “bar-code” all species to aid with identification

NBG Wales has completed bar coding the flora of Wales & it is over 90% accurate

Original Target 2 – A preliminary assessment of the conservation status of all known species at national, regional & international levels

REVISED TARGET 2

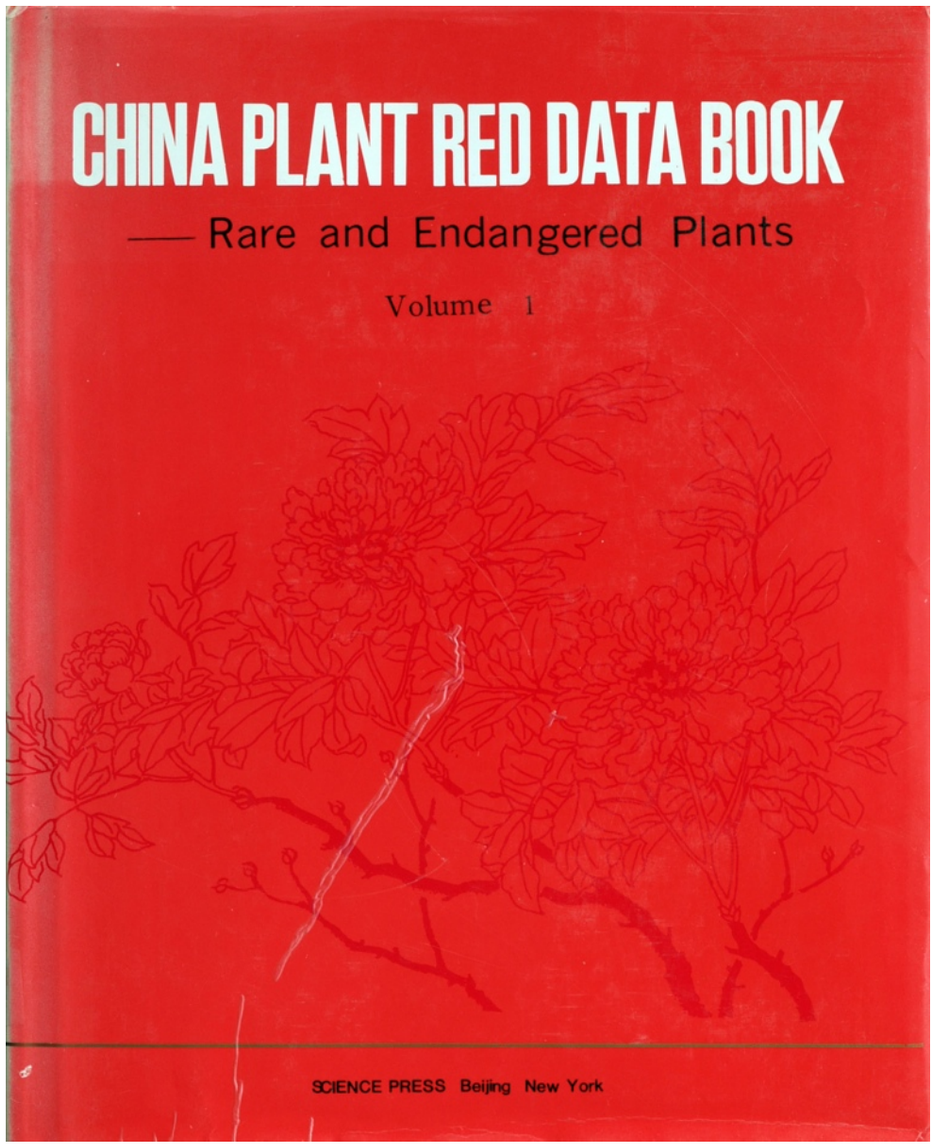
An assessment of the conservation status of all known plant species to guide conservation action at national, regional and international levels

Proposed Milestones

- 2012 – working list of all evidence-based species conservation assessments
- 2015 – published list of known threatened species
- 2020 – all pant species assessed with evidence
- full set of national/regional Red Lists

IUCN Species Survival Commission

- 100 Specialist Groups – 30 for plants
- 7000 volunteers – 3000 botanists
- The world's best professionals working on a voluntary basis
- Providing data and information to develop conservation tools
- IUCN Red Lists of Threatened Species



Euphorbia medicaginea – red-listed for Sardinia but very common in the Algarve.

Compiling preliminary assessments

- **The present IUCN system is too fussy**
- It is proposed that as a first step plant species to be placed into one of four categories: Extinct (includes EX and EW); Threatened (includes CR, EN and VU); Not Threatened (includes NT and LC); and Data Deficient (DD).

Taxonomic authorities can provide a lot of data for target 2

Magnolia ovoidea (Hung T. Chang and B.L. Chen) V.S. Kumar

CR D
China (Yunnan)
Also known as ***Manglietia ovoidea*** Hung T.Chang and B.L.Chen, this species is distributed in evergreen broad-leaved forests at altitudes of 1700-2000 m in south-east Yunnan. The potential forest distribution is 148,264 km² but it is thought that there are less than 50 individuals in four subpopulations.
Assessor: China Expert Workshop
Refs: 1,2,3,4,22

Magnolia coriacea Zhang Yu

Magnolia pacifica Vázquez subsp. ***pugana*** H.H. Iltis and Vázquez
CR B1ab(i,iii)
Mexico
The potential forest distribution for this taxon is 114 km².
Assessor: Global Tree Specialist Group
Refs: 2,3

Magnolia pacifica Vázquez subsp. ***tarahumara*** Vázquez
VU B1ab(i,ii)
Mexico
Only found in the Sonora islands of Mexico, where it is known from few localities. Potential forest distribution for the taxon is 8168 km².
Assessor: Global Tree Specialist Group
Refs: 2,3

Magnolia pacifica Vázquez subsp. ***pacifica***

EN B1ab(i,iii)
Mexico, (Jalisco, Nayarit)
A variety which appears to be known only from a few localities in ravines and gorges from Zapopan and San Cristóbal at elevations of 800-1400 m. The potential forest distribution for the taxon is 4127 km².
Assessor: Global Tree Specialist Group
Refs: 1,2,3

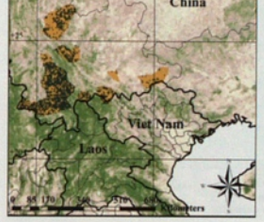
Magnolia pallescens Urb. and Ekman

EN B1ab(i,iii)
Dominican Republic
A medium-sized tree native to forests at about 1560-2070 m in western Dominican Republic. The potential forest distribution for this species is 2703 km². Between 1960 and 1980 populations diminished rapidly in some areas as a result of indiscriminate felling for cabinet work. The Ebano Verde Scientific Reserve, with an area of 23 km², was created in 1989 to protect this species.
Assessor: Global Tree Specialist Group
Refs: 2,3,18,38

Magnolia panamensis H.H. Iltis and Vázquez
NT
Panama
Described only recently, the species is currently known from forest at elevations of between 2000 m and 2600 m on the Cordillera Central in Bocas del Toro and Chiriquí Provinces, right up to the border with Costa Rica. There is almost no doubt that the species continues into Costa Rica on the Cordillera de Talamanca, although it has yet to be collected there. The potential forest distribution for the species is 2107 km², but there is a protected population in La Amistad National Park. The species was previously listed as Endangered based on its limited distribution, but there is no evidence available on decline or fragmentation and much of the area where it occurs is protected.
Assessor: Global Tree Specialist Group
Refs: 1,2,3

Magnolia pealiana King.
EN B1ab(i,iii)
India (Assam)
This species is restricted to Assam with a potential forest distribution of 1765 km².
Assessor: Global Tree Specialist Group
Refs: 2,3,32

Magnolia phanerophlebia B.L. Chen



CR B2ab(i,ii,iii,v)+C2a(ii)
China (S.E. Yunnan)
The species is only known from Maguan in the south-east of Yunnan province. It was seen at two sites during Global Trees Campaign field surveys in December 2005 and it is estimated that the total wild population is less than 200 individuals. The biggest threat to the species is a decrease in habitat, with many suitable areas now replaced by banana plantation. Local awareness-raising is vital for this species, as well as research into nursery techniques for its cultivation. Some consider it to be a synonym of ***Magnolia talaumoides***.
Assessor: Global Tree Specialist Group
Refs: 1,2,4,19,31

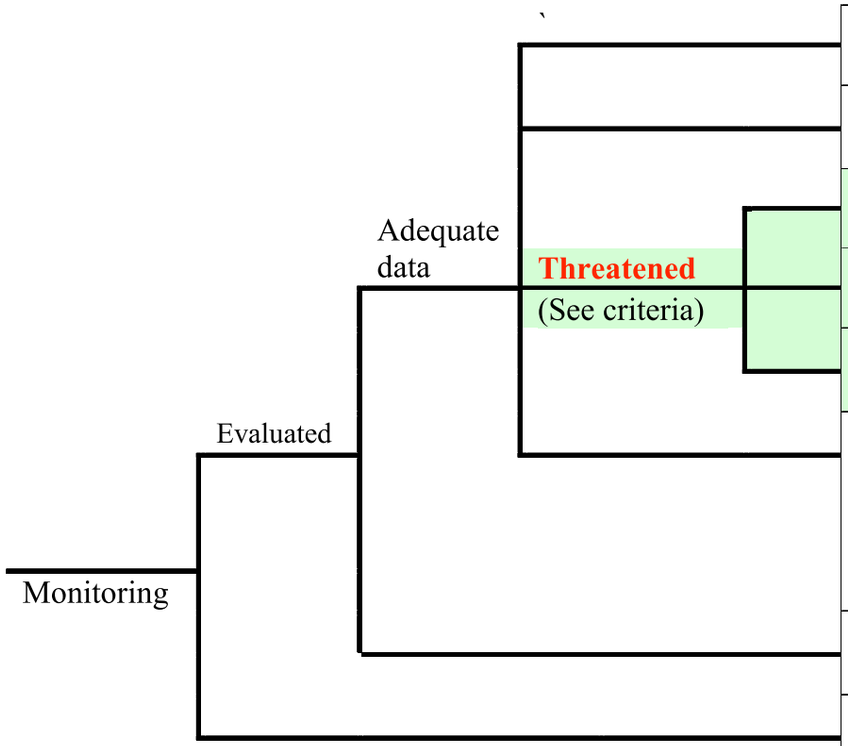
Magnolia phuthoensis (Dandy ex Gagnep.) V.S. Kumar
EN B1ab(i,iii)
Viet Nam
The potential forest distribution for this species is 738 km². This, together with an assumption of forest decline and fragmentation, has led to application of the Endangered category. Further information on the situation in the wild is urgently required.
Assessor: Global Tree Specialist Group
Refs: 3,22

IUCN Red List Categories

IUCN RED LIST CATEGORIES post 1994

adapted from Walter & Gillett (1998) & PLANT TALK 26 p34 (Oct 2001)

03/01/2006 12:04



Extinct (EX) – applied where there is no reasonable doubt that the last individual has died. The time required since the last sighting is proportional to the life cycle of the species.	
Extinct in the Wild (EW) – applied when the species is only known to be present in cultivation or as a naturalised population well outside its past range.	
Critically Endangered (CR) – applied when a species is facing an extremely high risk of extinction in the wild in the immediate future.	
Endangered (EN) – applied to a species that is facing a very high risk of extinction in the wild in the near future as defined by the criteria	
Vulnerable (VU) – this is applied to a species if there is a high risk of extinction in the wild in the medium term future	
Lower Risk (LR)- this is applied when the species does not qualify in any of the levels of threatened	Near threatened (NT) – applied to species close to vulnerable
	Conservation dependent (CD) – applied to a species that is currently the subject of a SRP and if that SRP stopped the species would qualify for a threatened category within 5 years
	Least concern (LC) – applied if none of the above is appropriate
Data deficient (DD) – applied to a well studied species where there is insufficient data to make an assessment or where many years have passed since data was collected	
Not evaluated (NE) – this is applied when no attempt has been made to assess the species. This is where you would put a species that is so common that monitoring is a very low priority	

The criteria: In order to place a species in one of the 3 threatened categories the conservation worker evaluates that species against these categories all of which have quantitative values for each level of threatened-ness.
Only one criterion has to be met for a species to be classified as threatened.

A	Declining population
B	Small distribution plus decline or fluctuation
C	Small population plus decline
D	Very small or restricted population
E	Quantitative analysis (QA)

Criteria for endangered & vulnerable species

THE CRITERIA FOR CRITICALLY ENDANGERED, ENDANGERED & VULNERABLE SPECIES

summarised from Walter & Gillett (1998) – see the original for more detail

CATEGORY	CRITERIA				
	A	B	C	D	E
CRITICALLY ENDANGERED	An observed reduction of >80% in the past 10 years or 3 generations* **or** a predicted reduction of the same size in the next ten years or 3 generations*	Extent of occurrence <100km^2 or area of occupancy <10km^2 plus one-site only or fragmentation, decline & fluctuations	Population fewer than 250 mature individuals & decline of >25% (in 3 years or one generation*) or very fragmented distribution or all in one place	Population fewer than 50 mature individuals	QA showing that the probability of extinction is >50% in 10 years or 3 generations*
ENDANGERED	An observed reduction of >50% in the past 10 years or 3 generations* **or** a predicted reduction of the same size in the next ten years or 3 generations*	Extent of occurrence <5000km^2 or area of occupancy <500km^2 plus one-site only or fragmentation, decline & fluctuations	Population fewer than 2,500 mature individuals & decline of >20% (in 3 years or one generation*) or very fragmented distribution or all in one place	Population fewer than 250 mature individuals	QA showing that the probability of extinction is >10% in 100 years
VULNERABLE	An observed reduction of >20% in the past 10 years or 3 generations* **or** a predicted reduction of the same size in the next ten years or 3 generations*	Extent of occurrence <20,000km^2 or area of occupancy <2,000km^2 plus one-site only or fragmentation, decline & fluctuations	Population fewer than 10,000 mature individuals & decline of >10% (in 3 years or one generation*) or very fragmented distribution or all in one place	Population fewer than 1,000 mature individuals	QA showing that the probability of extinction is >10% in 100 years

* Whichever is the longer

UK Red lists 2006

		2002	2004	2006
FUNGI	Basidiomycotes	In prep.	In prep.	In prep.
	Ascomycetes and other families	In prep.	In prep.	In prep.
LICHENS		Yes	Yes - revised 2003	Yes
PROTISTS	Myxomycotes	No	No	No
ALGAE	Charophytes (stoneworts)	Yes	Yes	Yes - revised 2004
	Freshwater and terrestrial algae	No	No	No
	Marine algae	No	No	Preliminary assessment
PLANTS	Vascular plants (seed plants & ferns)	Yes	Yes	Yes - complete revision 2005
	Bryophytes (mosses & liverworts)	Yes	Yes	Yes - partial revision 2005

Original Target 3 – Development of models with protocols for plant conservation & sustainable use, based on research & practical experience

REVISED TARGET 3

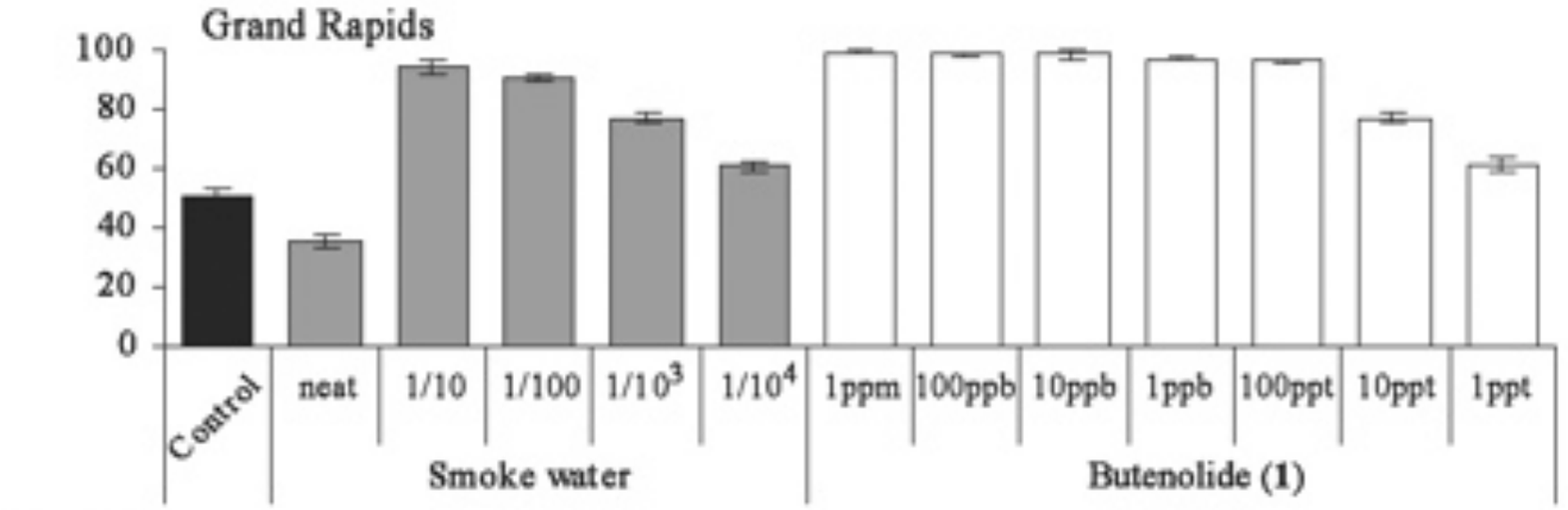
Develop & share information, research & associated outputs, and methods necessary to implement the strategy.

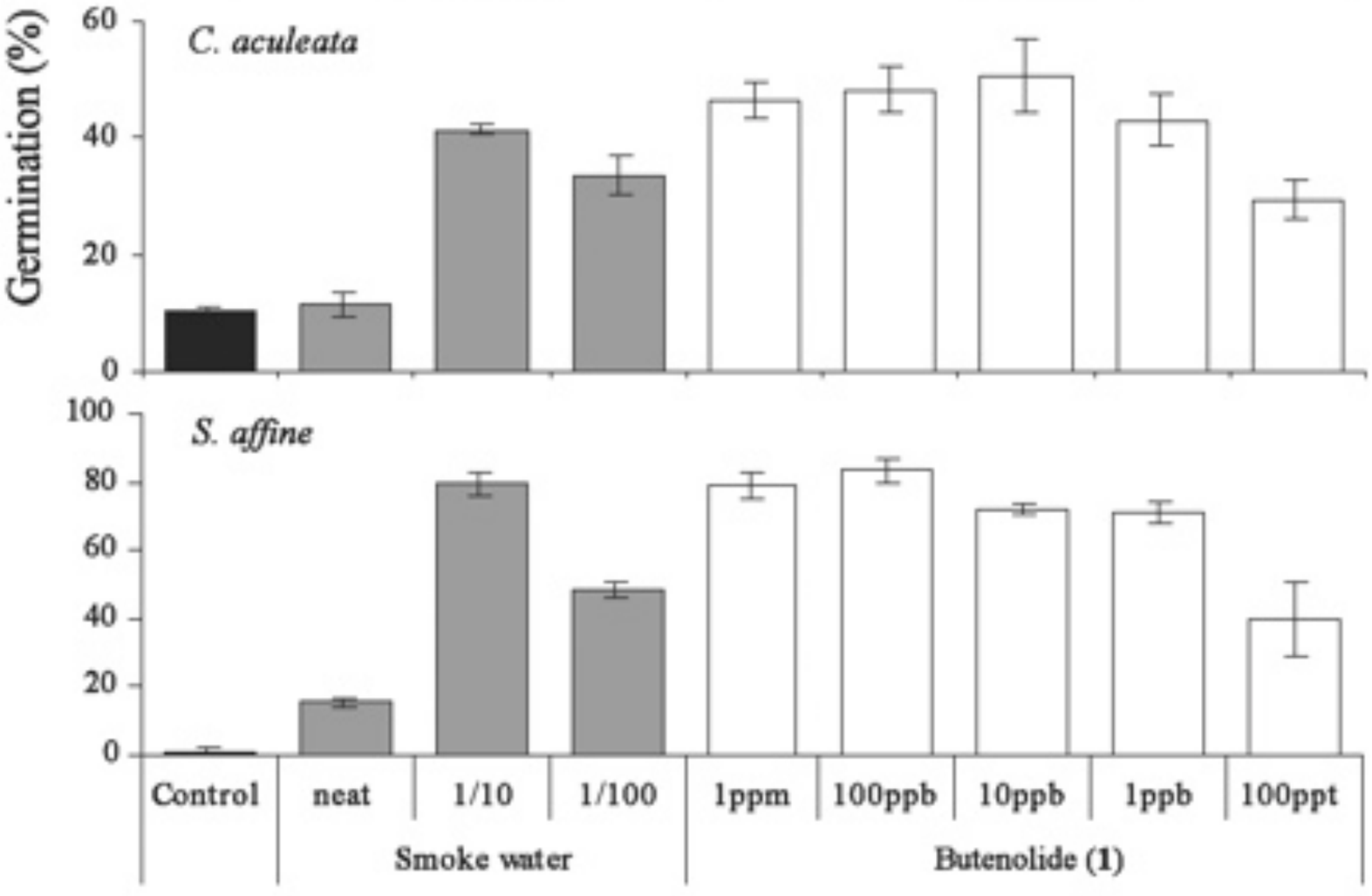
Proposed Milestones

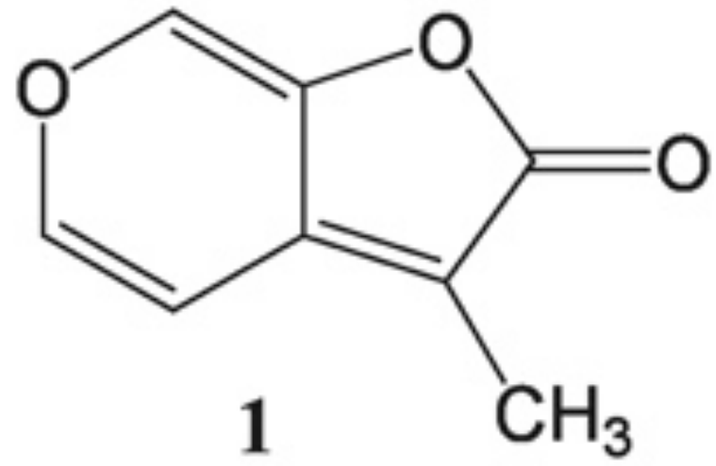
- 2012 – Toolkit to support implementation of the GPSC
- 2015 – web-based compilation of resources

Tuesday, 16 April 2013

BUTENOLIDE: 3-methyl-2H-furo[2,3-c]pyran-2-one







Flematti *et al.* 2004 *Science* **305** p977

Threatened Species Databases

British Bryological Society

HOME | About the BBS | Activities | UK Bryodiversity | Learning More | Resources | Bryology Portal

BBS > Bryodiversity > Threatened Bryophyte Database Project

Threatened Bryophyte Database (TBDB)

Acaulon triquetrum

Background

Following the appearance of the *Bryophyte Red Data Book* in 2001 (Church *et al.*, 2001), it became clear that conservation of threatened bryophytes would best be served by a more active system than could be achieved by a one-off book publication. This has been attempted for vascular plants through the Threatened Plant Database Project, a co-operative venture between the statutory nature conservation agencies, Plantlife and the Botanical Society of the British Isles. The idea was to create a 'live' database of records of threatened plants that could be kept up-to-date, that would contain information on the state of populations of threatened species, and that would service their conservation by informing initiatives such as the UK Biodiversity Action Plan (BAP). Much good work was done during the course of this project, and also many valuable lessons learned. It was considered that it was time to do something similar for bryophytes, and consequently a three-year contract has been set up with English Nature, Scottish Natural Heritage, the Countryside Council for Wales, the Joint Nature Conservation Committee, the Biological Records Centre (BRC) and Plantlife to work with the BBS to run a Threatened Bryophyte Database (TBDB).

Aims

It is intended to keep up-to-date, detailed records of target species, in order to track the condition of their populations, and so inform conservation action. The aims of the project are:

- to collate detailed records of target species (including population information) on a database;
- to incorporate records from recent and ongoing survey work (e.g. arable bryophytes project, Plantlife conservation and survey programmes);
- to feed information to UK BAP lead partners and conservation agencies;

UNIVERSITY OF BIRMINGHAM

CEBC

Centre for Evidence-Based Conservation

HOMEPAGE

ABOUT CEBC

- BACKGROUND TO CEBC
- INTRODUCTION TO SYSTEMATIC REVIEW
- GETTING INVOLVED IN EVIDENCE-BASED CONSERVATION
- CEBC NEWS AND EVENTS
- CEBC JOB OPPORTUNITIES

CEBC LIBRARY

- PROTOCOLS
- SYSTEMATIC REVIEWS
- EXTERNAL PUBLICATIONS
- PRESENTATIONS

The Centre for Evidence-Based Conservation was established in 2003 with the goal of supporting decision making in conservation and environmental management through the production and dissemination of systematic reviews on the effectiveness of management and policy interventions. With support from a wide range of organisations in the environmental and academic sectors the CEBC now acts as both a source of evidence and co-ordinator of a fast-growing collaborative network undertaking systematic reviews. This website acts as the primary gateway to reliable information on effectiveness based on the best available scientific evidence.

LATEST NEWS

Go to our Completed Systematic Reviews page to see recent additions to the CEBC library.

NATURAL ENGLAND

NATURAL ENVIRONMENT RESEARCH COUNCIL

RSPB for birds for people for ever

THE NATIONAL

Objective 2

Plant diversity is urgently and effectively **conserved**

Targets 4-10

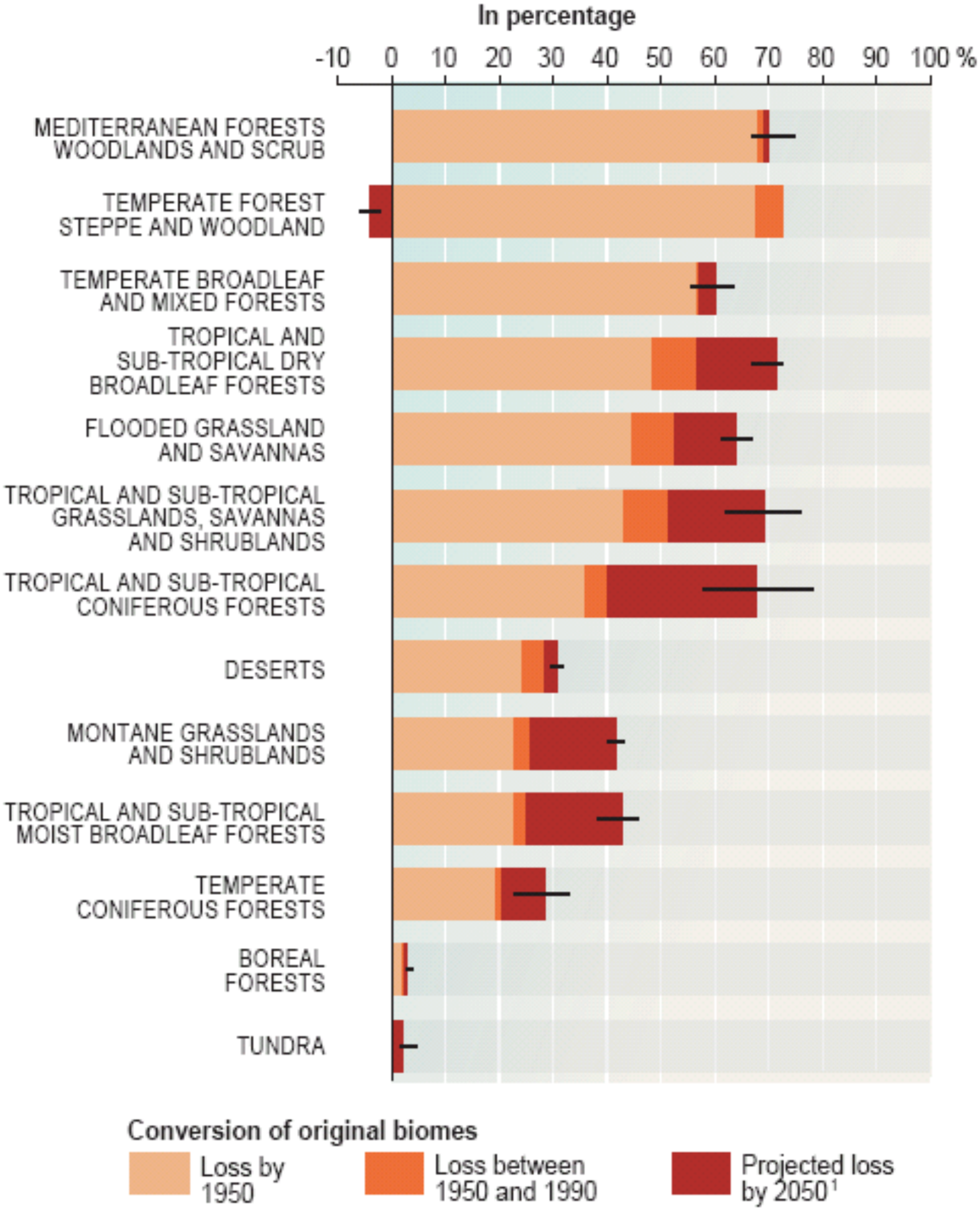
Original Target 4 – At least 10% of the World's ecological regions effectively conserved – reached already

REVISED TARGET 4

At least 15% of each ecological region or vegetation-type secured through effective management &/or restoration

Proposed Milestones

- Establish which of the existing global or regional ecological region classifications are suitable for use
- Identify the co-incidence of protected areas and these ecological regions
- develop guidance on the management of critical vegetation types
- trial the implementation of management guidance through the ecosystem approach
- The conservation of ecosystems whether they are diverse or not



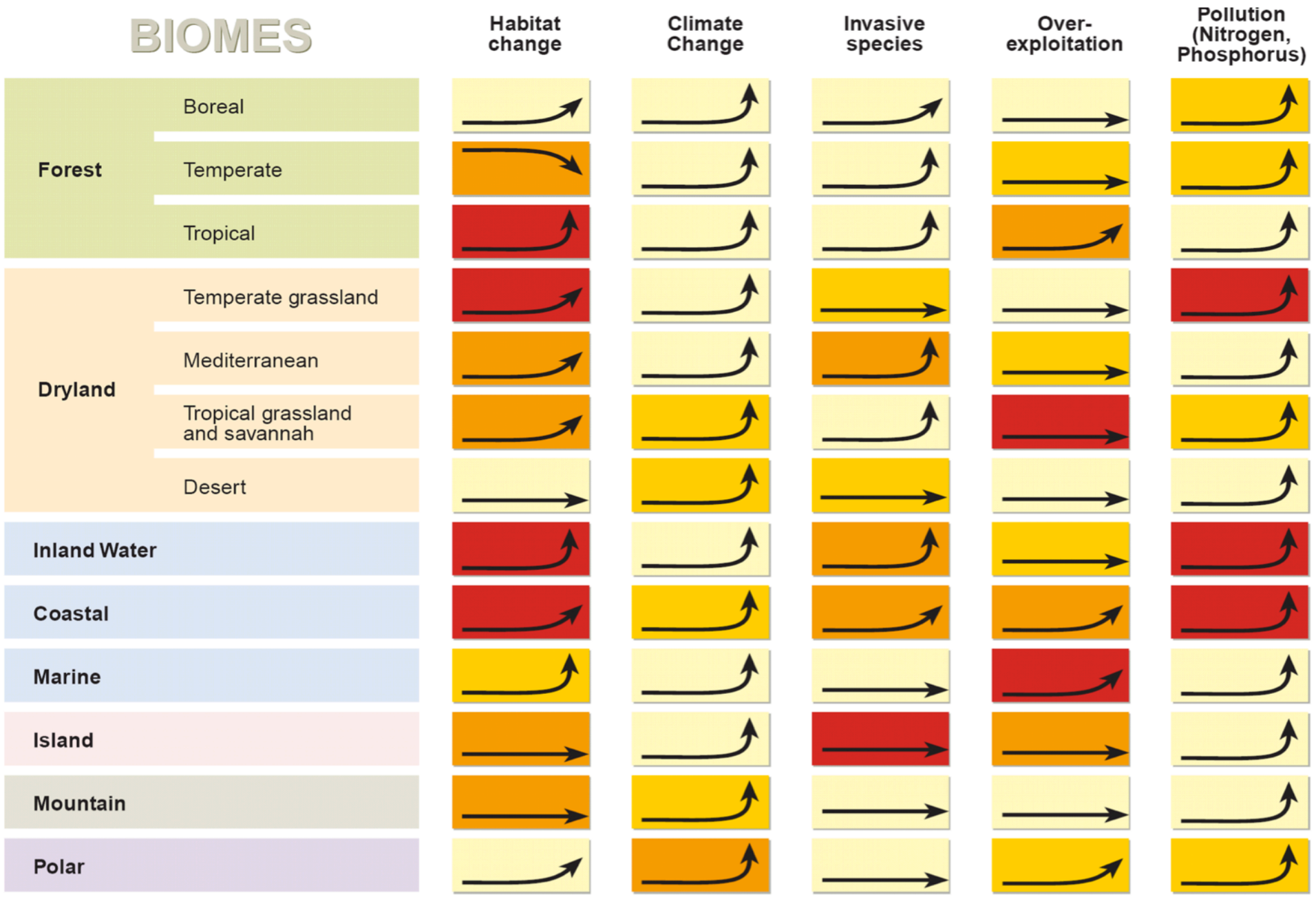
% loss of ecosystems

before 1950,

between 1950 & 1990 &

projected loss by 2050

Different biomes have suffer differently from the different threats



Tuesday, 16 April 2013

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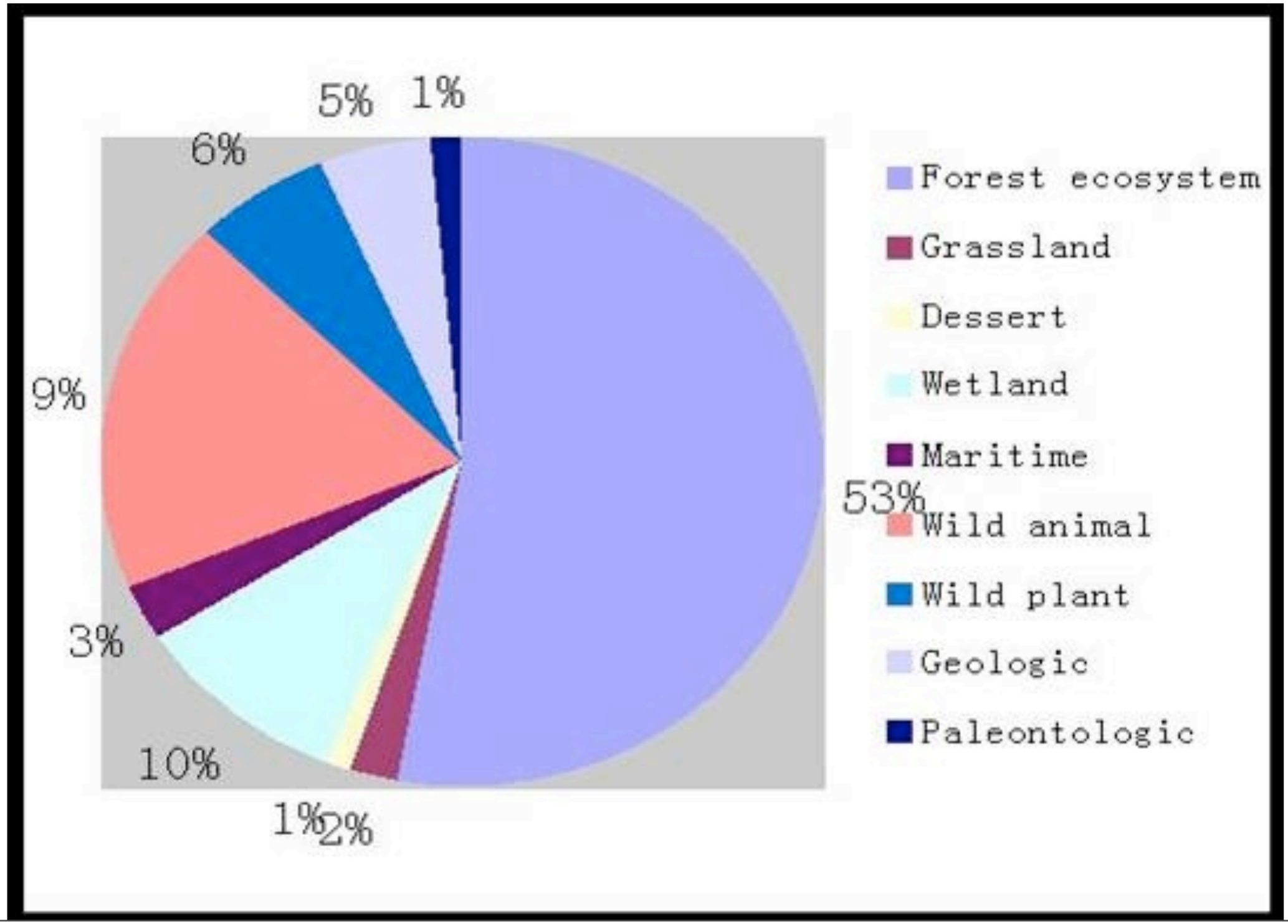
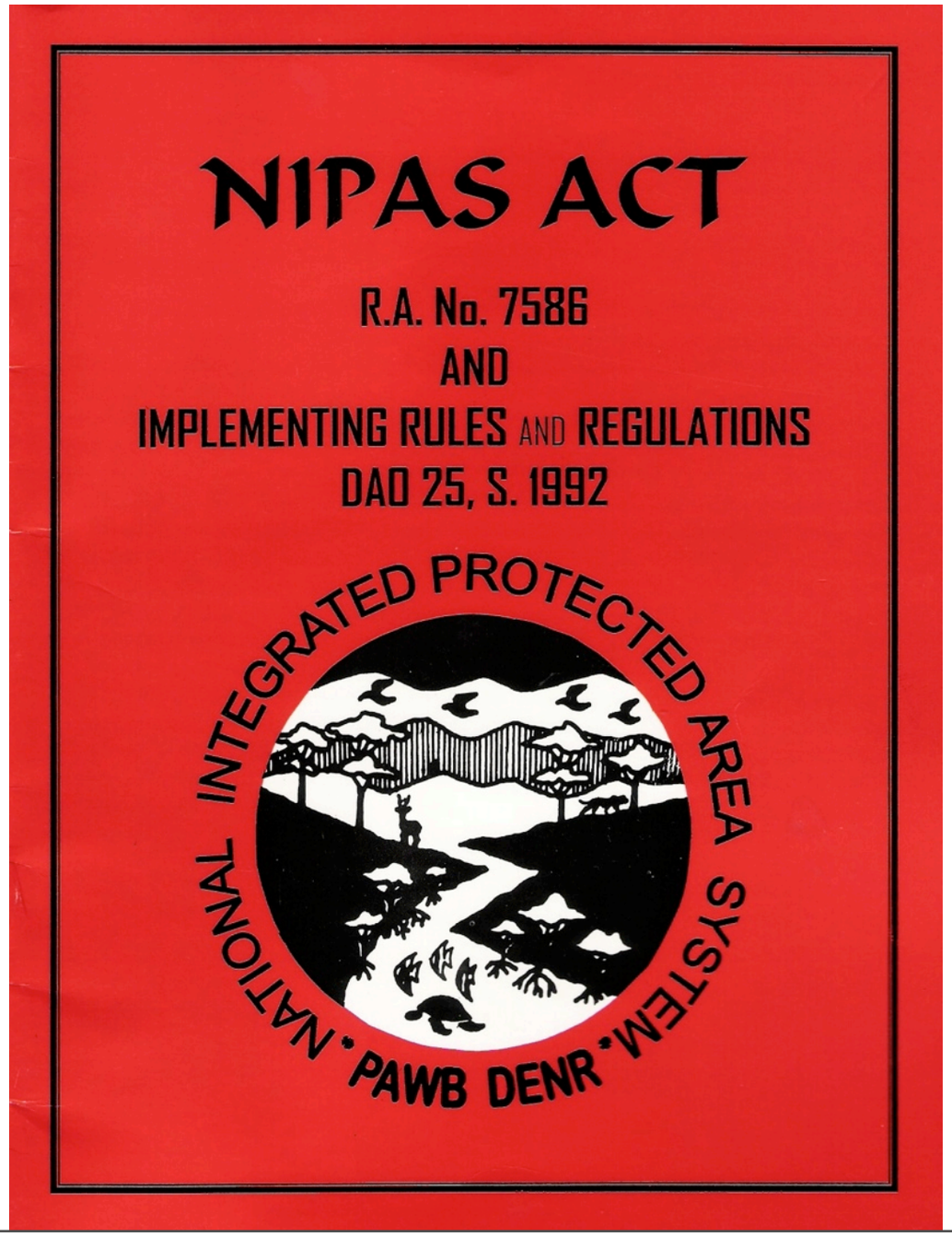
Tuesday, 16 April 2013

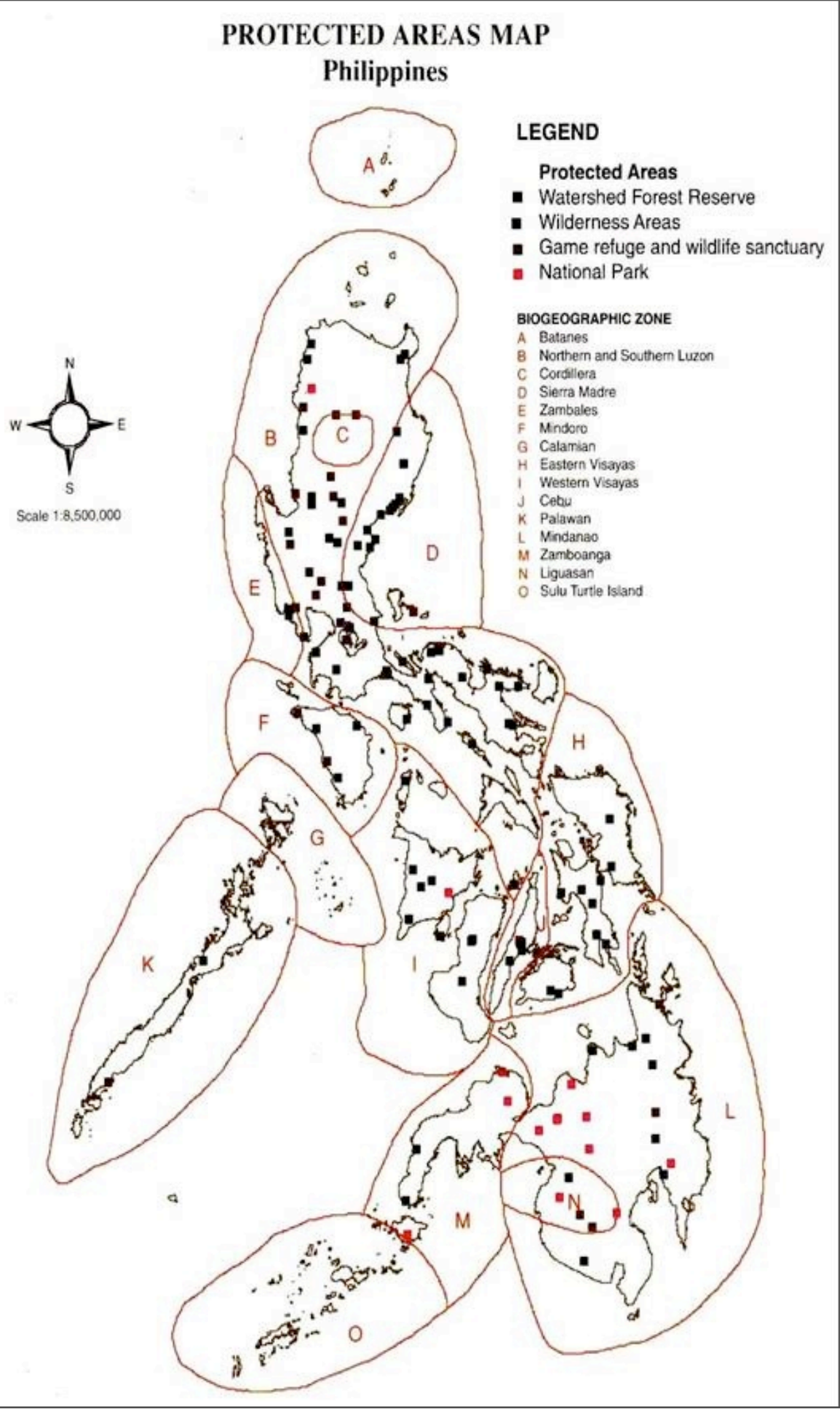
Protected areas in China

By 2003 there were more than 2,000 nature reserves in China. These covered more than 13,000,000 hectares (130,000 sq km) or 14.4% of the country (= 50% of UK area).



Philippines National Integrated Protected Areas Scheme 1992.
89 protected areas totalling 2,950,000 hectares or 8.7% of the total land area





Original Target 5 – Protection of 50% of the most important areas for plant diversity

REVISED TARGET 5

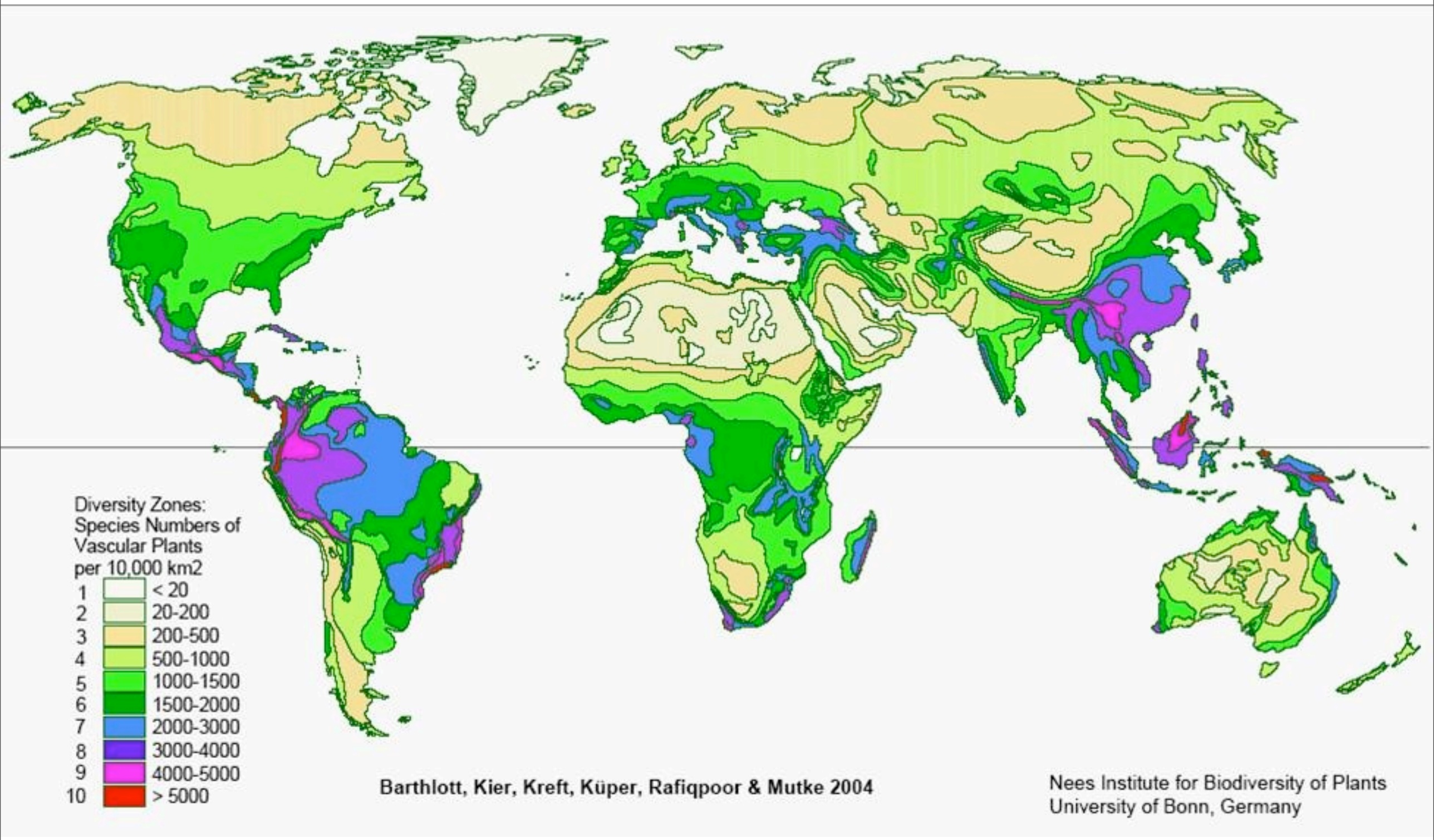
Protection of at least 75% of the most important areas for plant diversity assured with effective management for conserving plant diversity

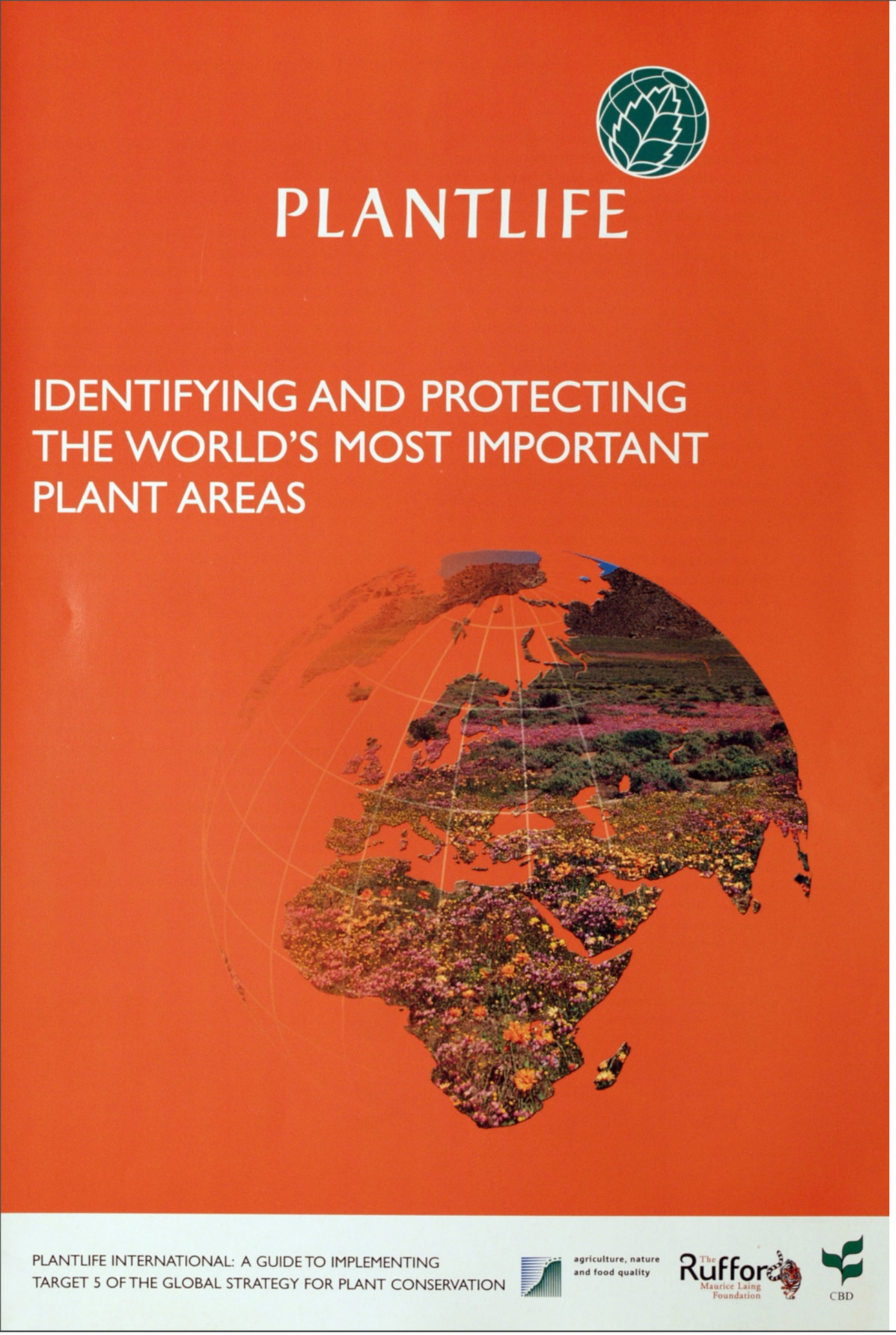
Proposed Milestones

- 2012 - Evaluation of protected areas against important areas for plant diversity
- 2013 – Identify and address threats to plants and plant habitats in IPAs
- 2015 – incorporate plant conservation into management plans
- 2015 – At least 5 actively managed IPAs in every country

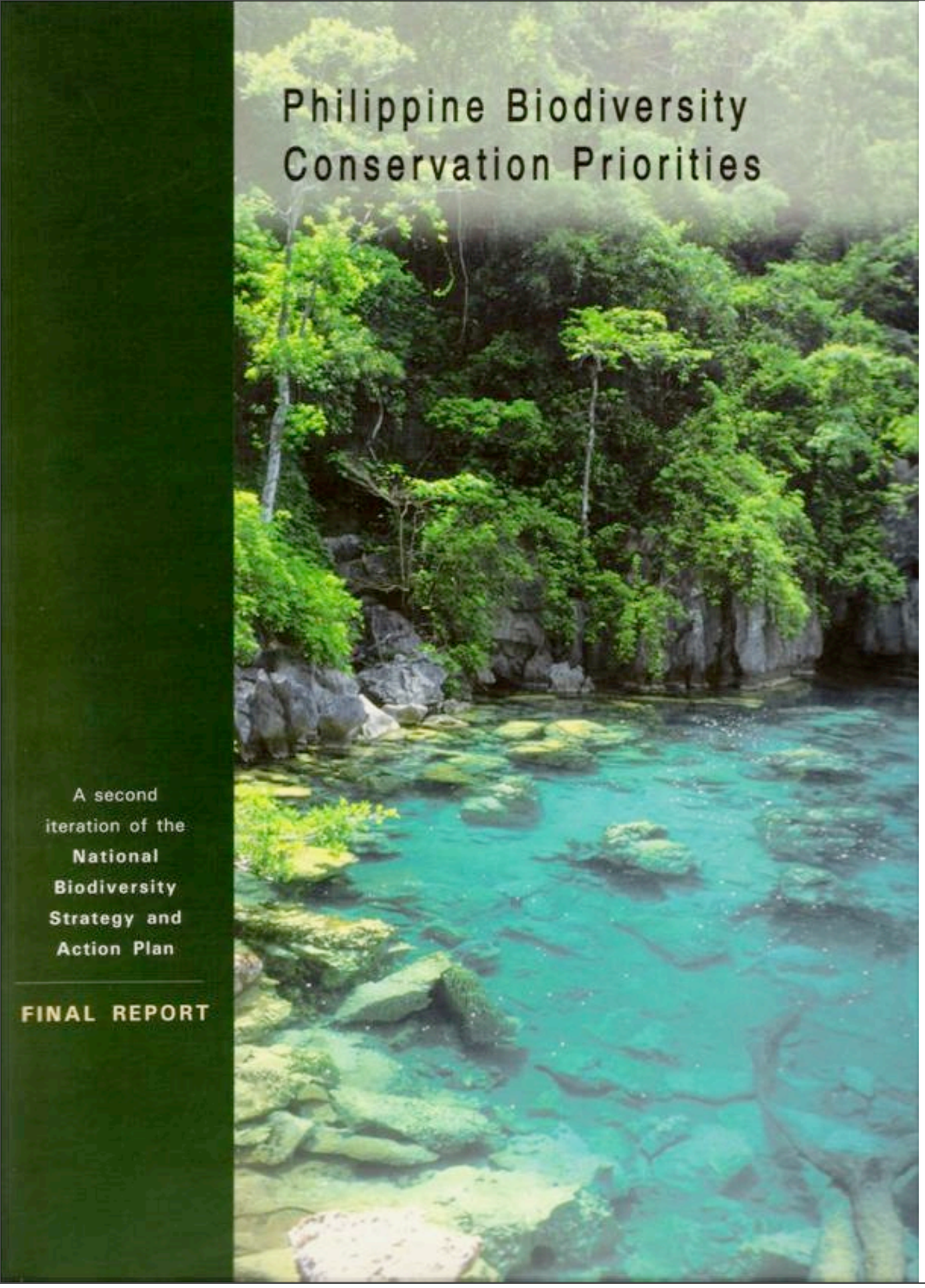
The view that the impact of climate change may make this target (and *in situ* conservation in general) ineffective, is not substantiated

Global distribution of vascular plant species





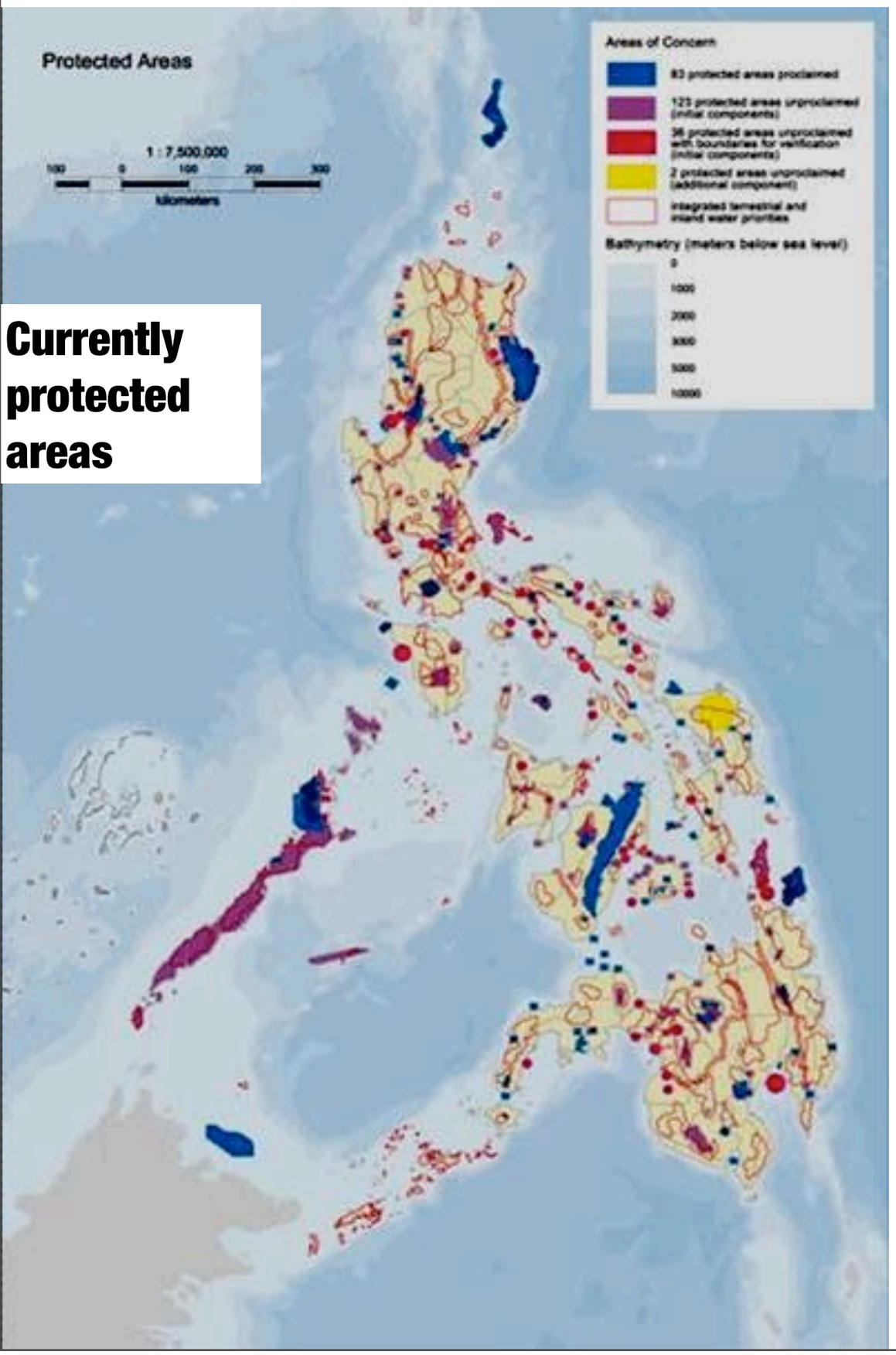
A pilot project is being carried out in Armenia, Bolivia, Madagascar, Sri Lanka, & Uzbekistan funded by the Global Environment Facility (GEF). To date 15.8% of the land in these countries is in protected areas.



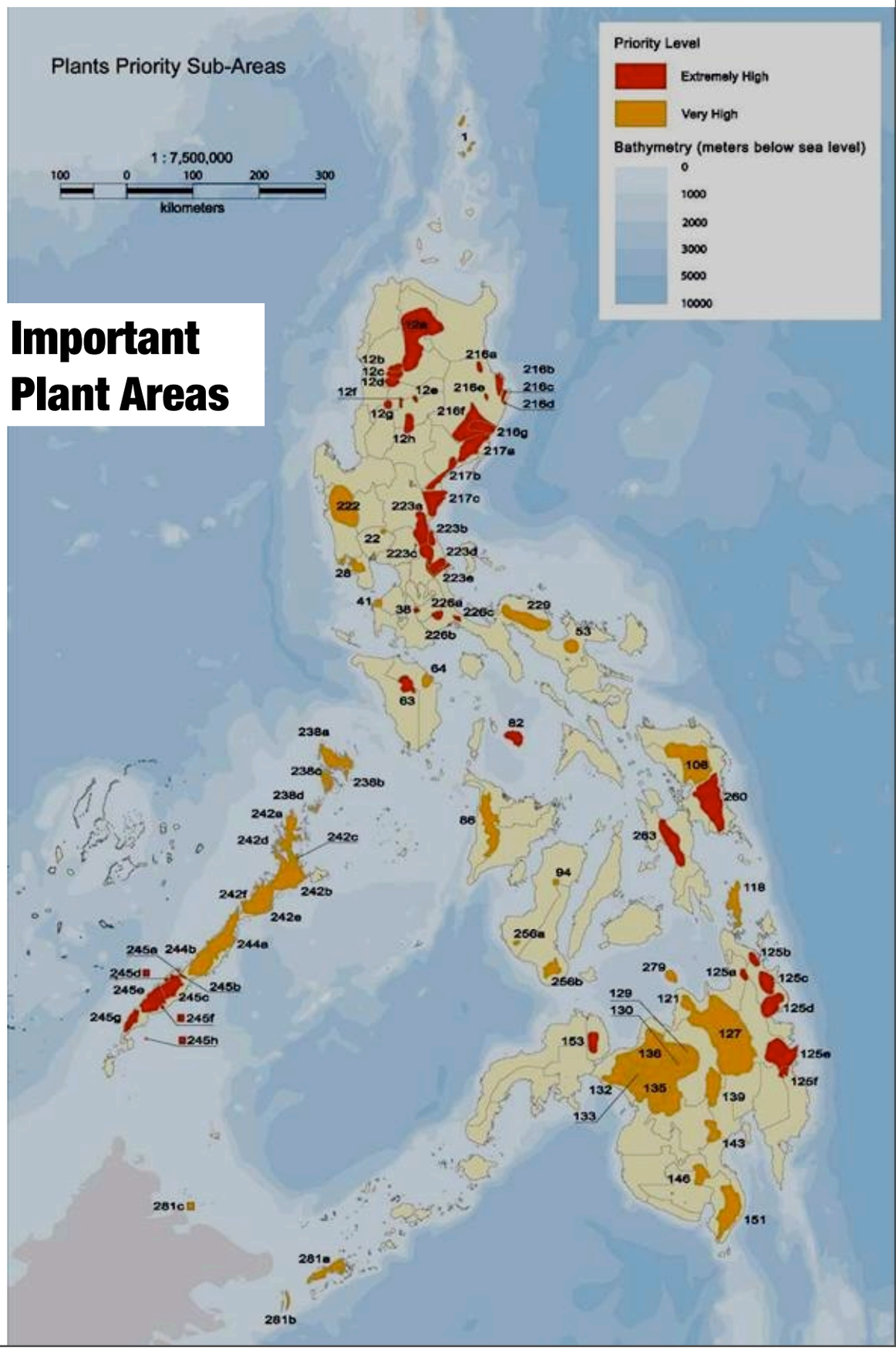
Philippine National Biodiversity Strategy & Action Plan.

1. Mapped the areas of highest biodiversity
2. Mapped distributions of endangered species
3. Compared the above with existing protected areas

Only 39 of the current protected areas overlapped with the 88 newly identified Important Plant Areas



Currently protected areas



Important Plant Areas

Original Target 6 – At least 30% of production lands managed consistent with the conservation of plant diversity

REVISED TARGET 6

At least 75% of production lands in each sector managed sustainably for plants & consistent with the conservation of plant diversity

Proposed Milestones

- establish links between the GSPC & programmes of work on agricultural & forest biodiversity
- develop specific guidance for each sector
- test the guidance in 2 sites in each production region

This target must be linked to the UN Millennium Development Goals

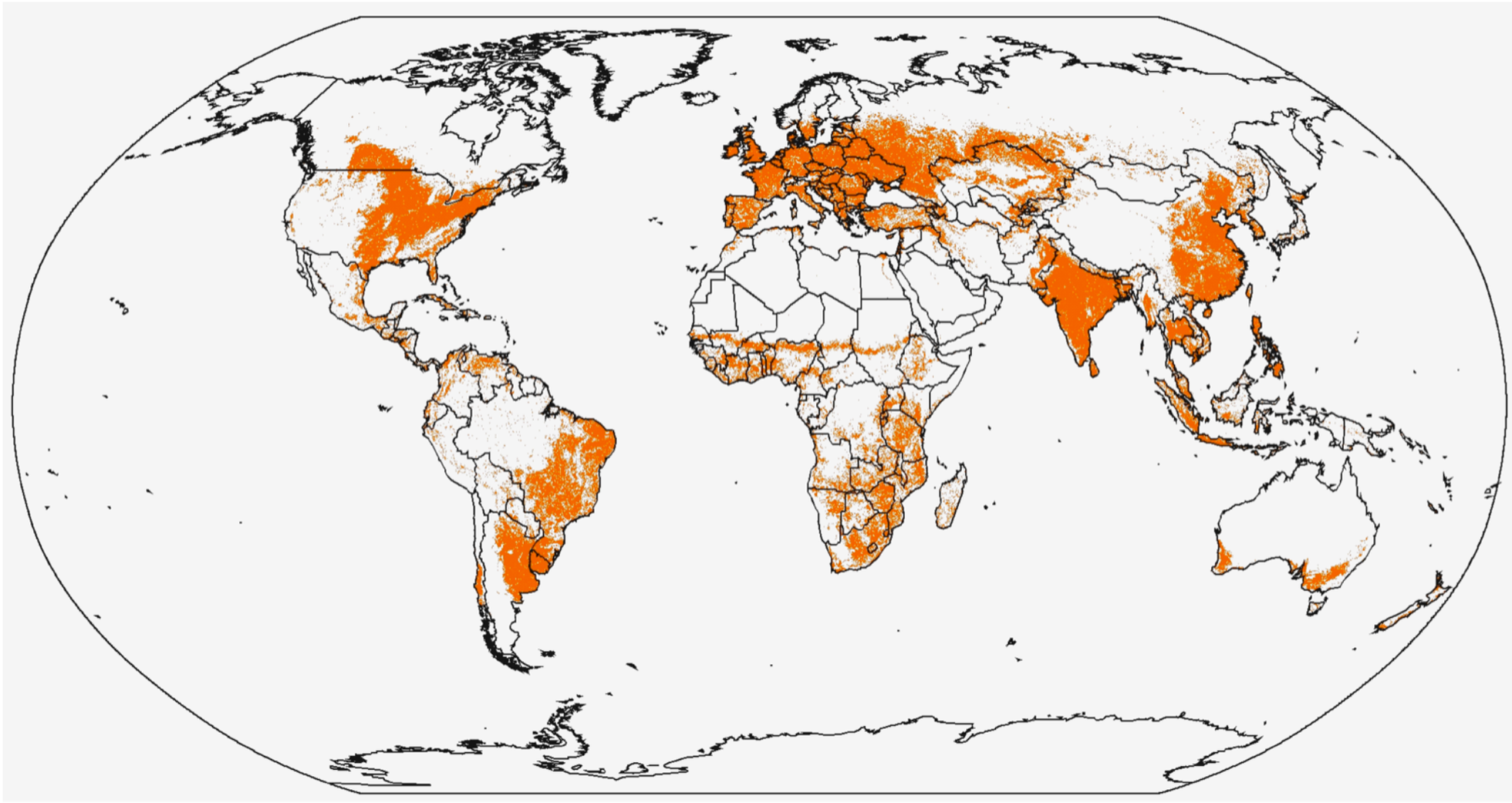
International Progress towards Target 6

11% of total forest area is designated as primarily for the conservation of biodiversity

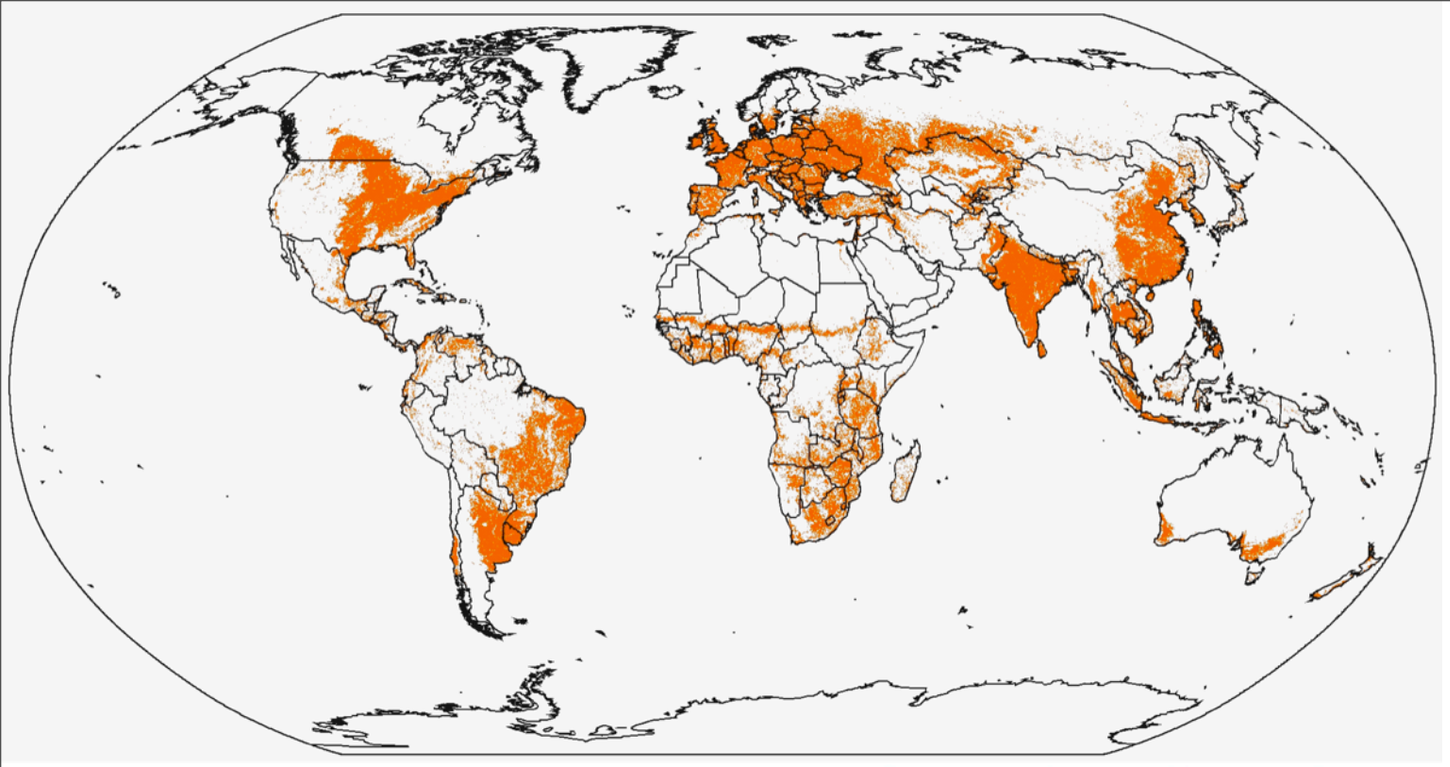
65% of total forest area has conservation of biodiversity as one of its designated functions
(Global Forest Resources Assessment 2005)

However this has been a very difficult target to measure

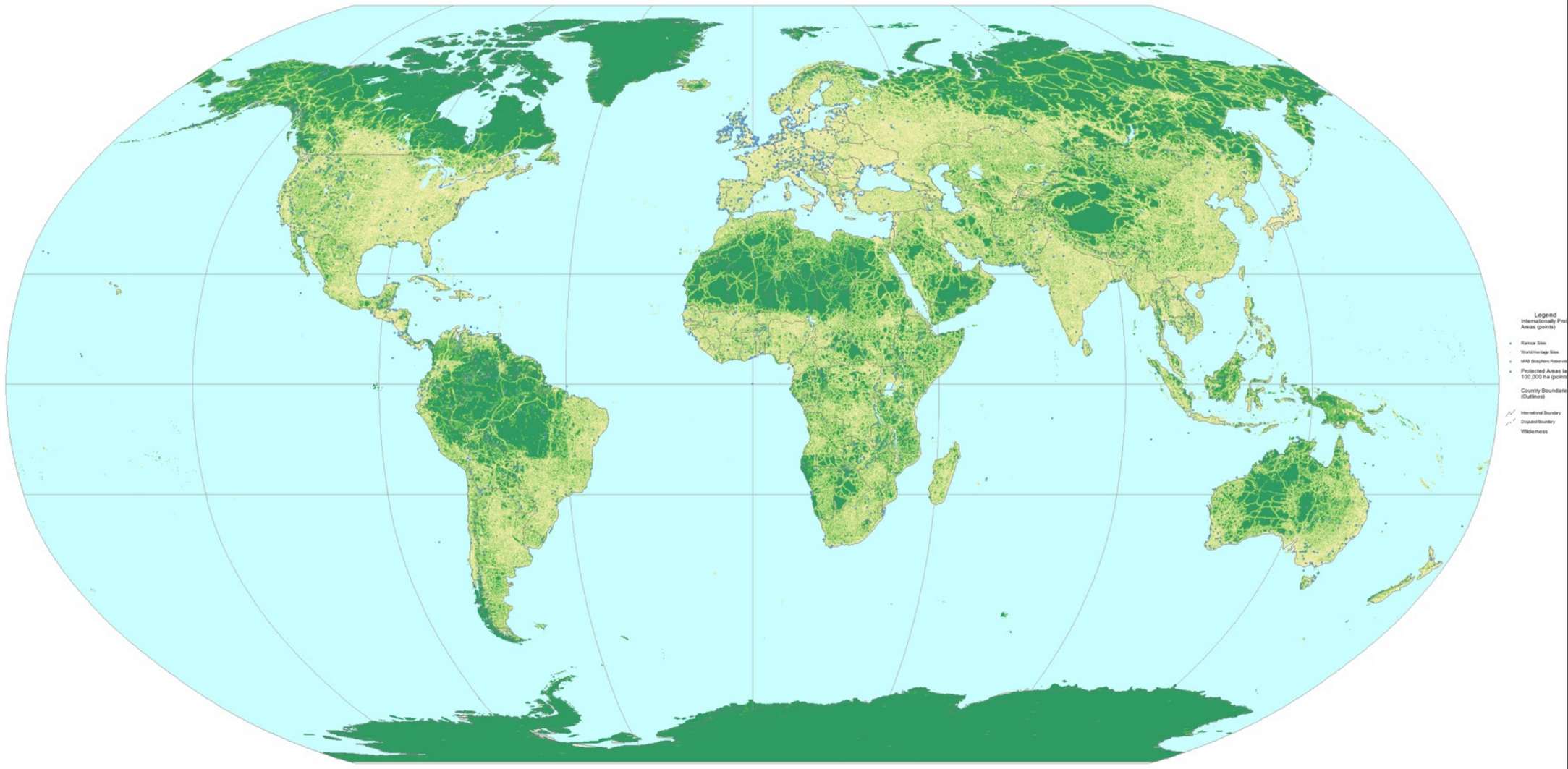
More land was converted to production lands in the second half of the 20th century than in the preceding 250 years. Production lands cover 25% of the land area



Production lands in 2000



Production lands in 2000
Wilderness Areas in 2000



Tuesday, 16 April 2013

Tuesday, 16 April 2013

Irrigation of soya beans in Brazil – sustainable?
The water is diverted from the Amazon

Original Target 7 – 60% of the World's threatened species conserved *in situ*

REVISED TARGET 7

At least 75% of threatened species conserved *in situ*

Proposed Milestones

- develop the means to measure if threatened species *are* conserved in protected area systems that take into consideration climate change (e.g. reserves with multiple habitat types or altitudinal gradients)
- a monitoring system that allows a baseline to be established so that progress can be monitored
- development of management plans for protected areas or specific species
- 100% of single-country endemic species in protected areas or covered by management plans

The *in situ* **paradox**

It is assumed that conserving a threatened species in its habitat is the best strategy because the habitat can provide all the needs of the threatened species

but

the same habitat also includes the threat that has resulted in the decline of the species

The **advantages** of *in situ* conservation of threatened species

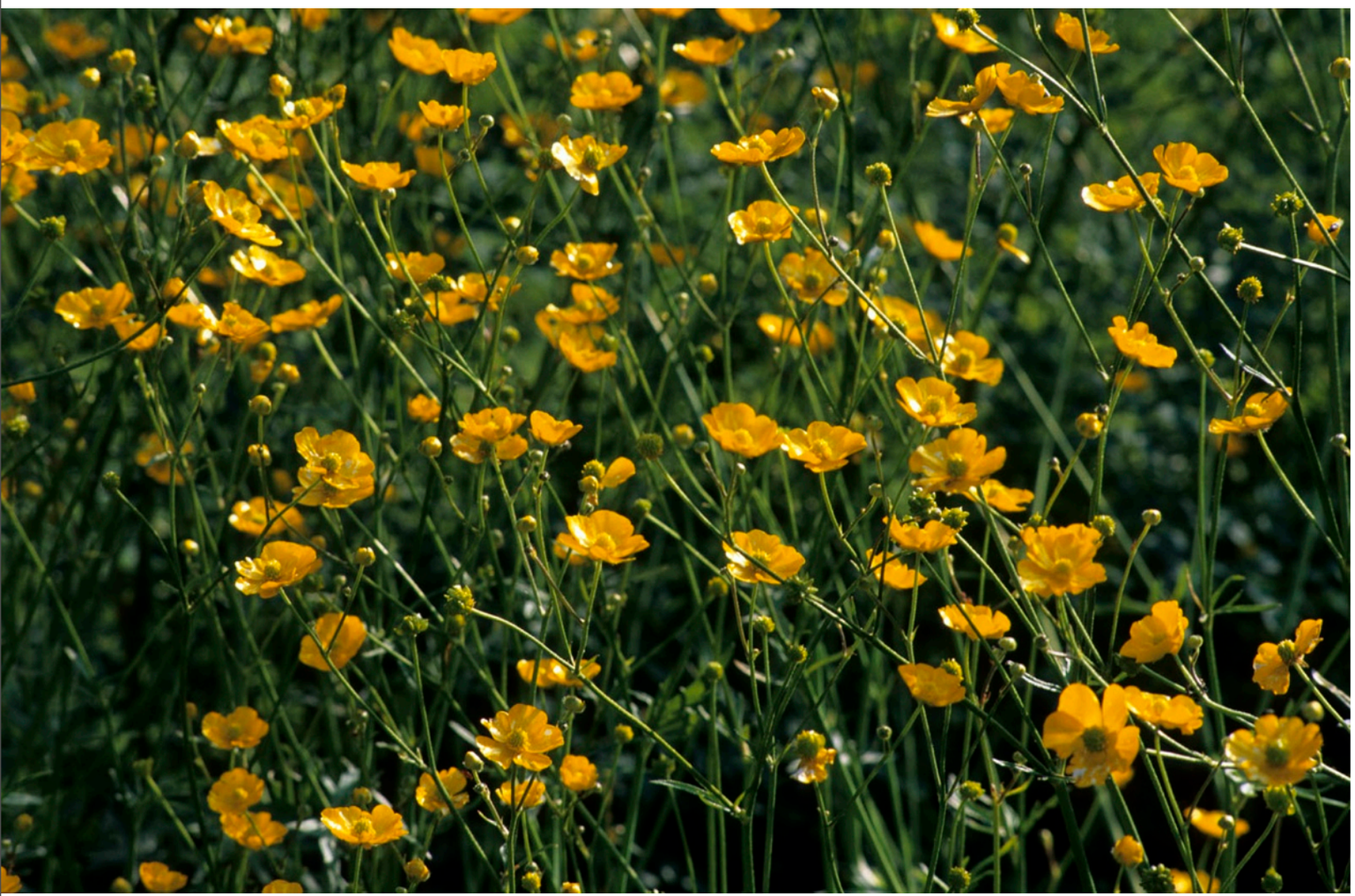
1. Communities are conserved and with them all aspects of the plants biology (e.g. pollinators & mycorrhizal fungi)
2. Wider ecological services are also preserved
3. Genetic diversity is more likely to be conserved due to larger number of individuals being present

The **disadvantages** of *in situ* conservation of threatened species

1. Constant, regular monitoring is expensive
2. Site security is essential
3. The threat has to be removed and this can be difficult & expensive.
4. If the threat is climate change then it may not be removable
5. Some management will be required

CAN NATURE KEEP UP WITH CHANGES IN THE CLIMATE?

http://www.worldwildlife.org/climate/pubs.cfm



▲ *Ranunculus acris* & *Anemone sylvestris* ▶

Both flowered 15 days earlier in 2004 than the historical average

In 2004 snowdrops flowers 21 days earlier than the historical average & *Prunus spinosa* flowered 39 days earlier

Original Target 8 – 60% of threatened species in accessible *ex situ* collections, preferably in the country of origin, & 10% of these included in recovery & restoration programmes

REVISED TARGET 8

At least 75% of threatened species conserved in *ex situ* collections, & at least 20% in recovery & restoration programmes

Proposed Milestones

- *Ex situ* collections of all Critically Endangered species must be genetically representative of the species
- A metadatabase of living collections producing regular progress reports
- establishment of a monitoring system for species included in recovery programmes

International Progress towards Target 8

To date 15,000 threatened species are known to be in living collections. In the absence of targets 1 & 2 being completed it is impossible to know what percentage this represents

The **advantages** of *ex situ* conservation of threatened species

1. Conserving one species at a time is conservation on a human scale
2. Monitoring is easy
3. Plants are protected from stochastic events & climate changes
4. The plants are separated from the threats

The **disadvantages** of *ex situ* conservation of threatened species

1. Other aspects of the plant's biology (i.e. pollinators & mycorrhizal fungi) may not be conserved
2. Genetic diversity can be low due to space restrictions
3. Hybrids may arise when otherwise isolated species are grown together
4. Selection of plants that are better suited to cultivation than to survival in the original habitat and this may hamper future re-establishment programmes

Volume 2 • Number 2 • April 2005

Cuttings

Botanic Gardens Conservation International Quarterly Newsletter

9,000 plants safe from extinction

Botanic gardens provide safe haven for over a quarter of known threatened plants

A recent study by BGCI indicates that approximately 9,000 plants which are threatened in the wild, are in fact in cultivation in botanic gardens around the world. This number makes up about one quarter of the plants presently known to be at risk, but is only a small percentage of the possible total. Although the 1997 IUCN list of endangered plant species listed 34,000 plant species as endangered worldwide, scientists estimate that anything up to 100,000 plants may be under serious threat of extinction due to mass habitat destruction and global climate change. BGCI's survey involved the development of a new tool, the Plant Search Database. It allows botanic gardens to check for the first time what they hold in their collections against an international list of plants, recorded alongside their status in the Red Book of Threatened Species maintained by IUCN-The World Conservation Union.

With over 200 million visitors a year and approximately 6.1 million living plant collections, botanic gardens are uniquely placed to act as sanctuaries for plants, as well as educating people about the devastating impact humankind has on many species. The work of botanic gardens in plant conservation is of vital importance at this time when, for tens of thousands of plants, it is 'one minute to midnight'.

Notes:
BGCI's plant search database is accessible to all through BGCI's website (www.bgci.org). The database includes plant records provided by over 500 botanic gardens worldwide. BGCI is keen to receive further plant records from any garden which has not yet contributed data.

For further information, please contact info@bgci.org.

In this issue: Changing role for Peter Wyse Jackson • Addressing the big issues Studying the canopy • Healthy eating in New Zealand • New projects in Argentina

BGCI
Plants for the Planet

2005 - 9,000 threatened species in botanic gardens
2007 – 12,000 in cultivation
2009 – 15,000 threatened species in living collections

Ex situ conservation in China

1. In 2002, the Chinese Academy of Sciences established a comprehensively planned & geographically structured *ex situ* conservation programme
2. Covered 31,000 species native to China (10% World flora)
3. A 15 year master plan exists to conserve all the 2,000 endangered native species

Ex situ conservation in China

1. By 2005 ½ of the Chinese threatened native species are being conserved in three botanic gardens
2. Xishuangbana BG in SW China, South China BG (Guanzhou) & Wuhan BG each have has 400 spp in cultivation.

Ex situ conservation in China

1. Model programmes have been drawn up for 2,000 species
2. Investigations into genetic integrity of collections, genetic diversity, inbreeding depression, hybridisation & genetic adaptation to cultivation.
3. Done for *Sinojackia*

October 2000 ISSUE 18 ISSN 0967-8018

KEW Scientist

News from The Living Collections, The Herbarium and The Laboratories at Kew & Wakehurst Place

ROYAL BOTANIC GARDENS KEW

SEED BANK FOR THE MILLENNIUM

The Wellcome Trust Millennium Building that will hold seed from 24,000 wild plant species in its vaults.

HOME to the Millennium Seed Bank project and the Seed Conservation Department, the Wellcome Trust Millennium Building at Wakehurst Place opened its doors to the public on Saturday 26 August 2000.

Designed by architects Stanton Williams and built by the construction company Longley, the building occupies a ground area of 5,500 square metres on land owned by Kew adjacent to Wakehurst Place. Being sited in an area of outstanding natural beauty, the Wellcome Trust Millennium Building was designed to harmonise with neighbouring agricultural buildings and the sixteenth century mansion house. The stainless steel barrel-vaulted roofs have already dulled to a colour that matches the lead work on the mansion but without any adverse effects on ground water quality.

The functionality of this prestigious building, however, is more important than its visual character. By the year 2010 the large underground vaults, designed for a 500-year life span, will store seed from about 24,000 wild plant species, mostly from dryland areas. These seed collections will be secured by legally binding agreements between Kew and its international partners.

This global resource will allow staff and research visitors to widen scientific understanding of comparative seed biology. This knowledge, shared with Kew's partner institutions through publications and training, will raise capacity for effective and sustainable conservation, particularly in regions where human livelihoods are most dependent on wild plant species.

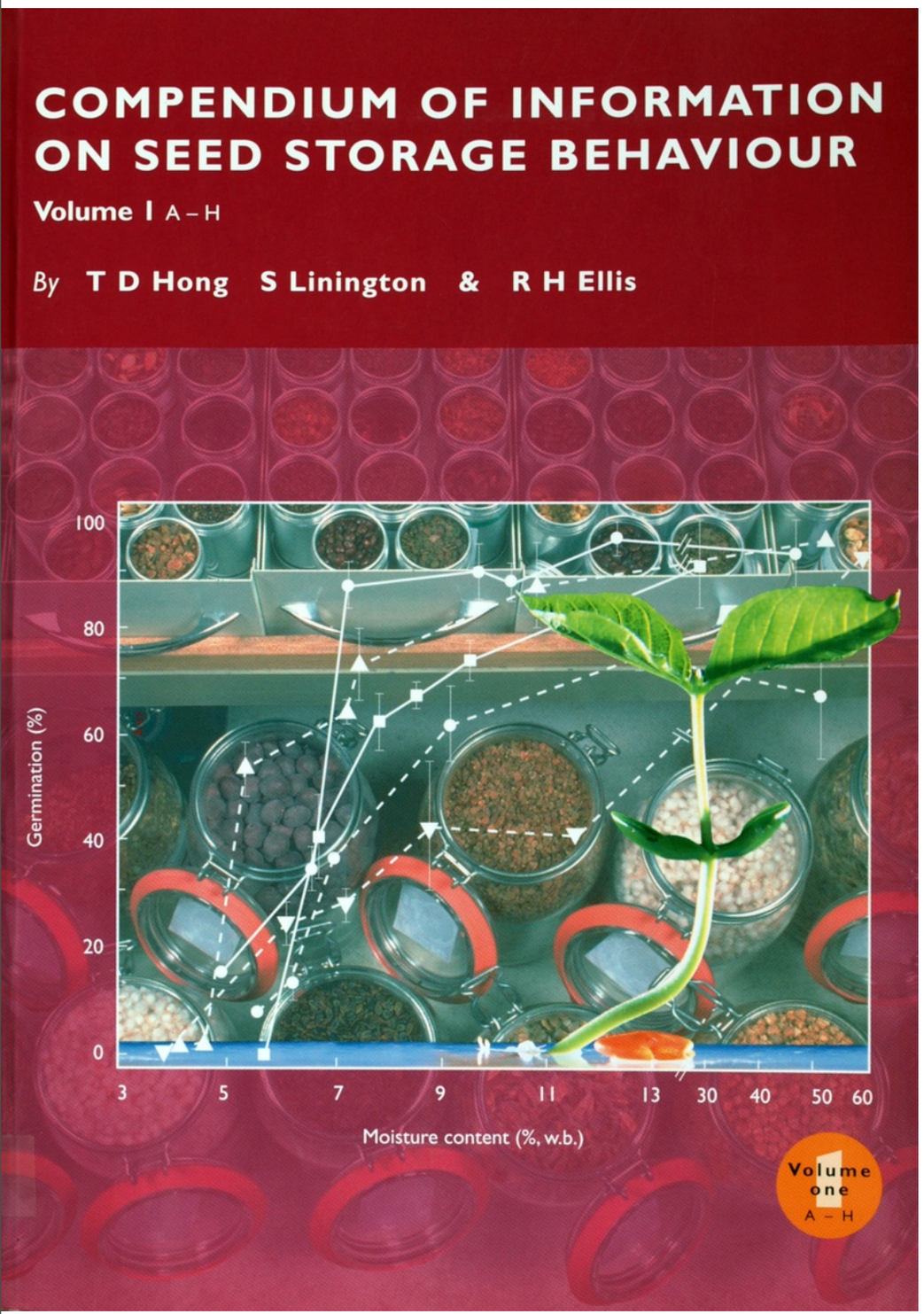
The exhibition in the Orange Room providing information on seed conservation to visitors.

For a project supported directly by public funds from the National Lottery, it is appropriate that there is a major public exhibition at the centre of the building. In the Orange Room (named in recognition of the Premier Sponsor of the Appeal, Orange plc) visitors can learn about Kew's seed conservation work through a variety of exhibits and computer-aided interactive displays, as well as watch scientists working in the adjacent laboratories. In the first month after opening, over 15,000 people visited this new facility.

Contact: Roger Smith (01444 894412)

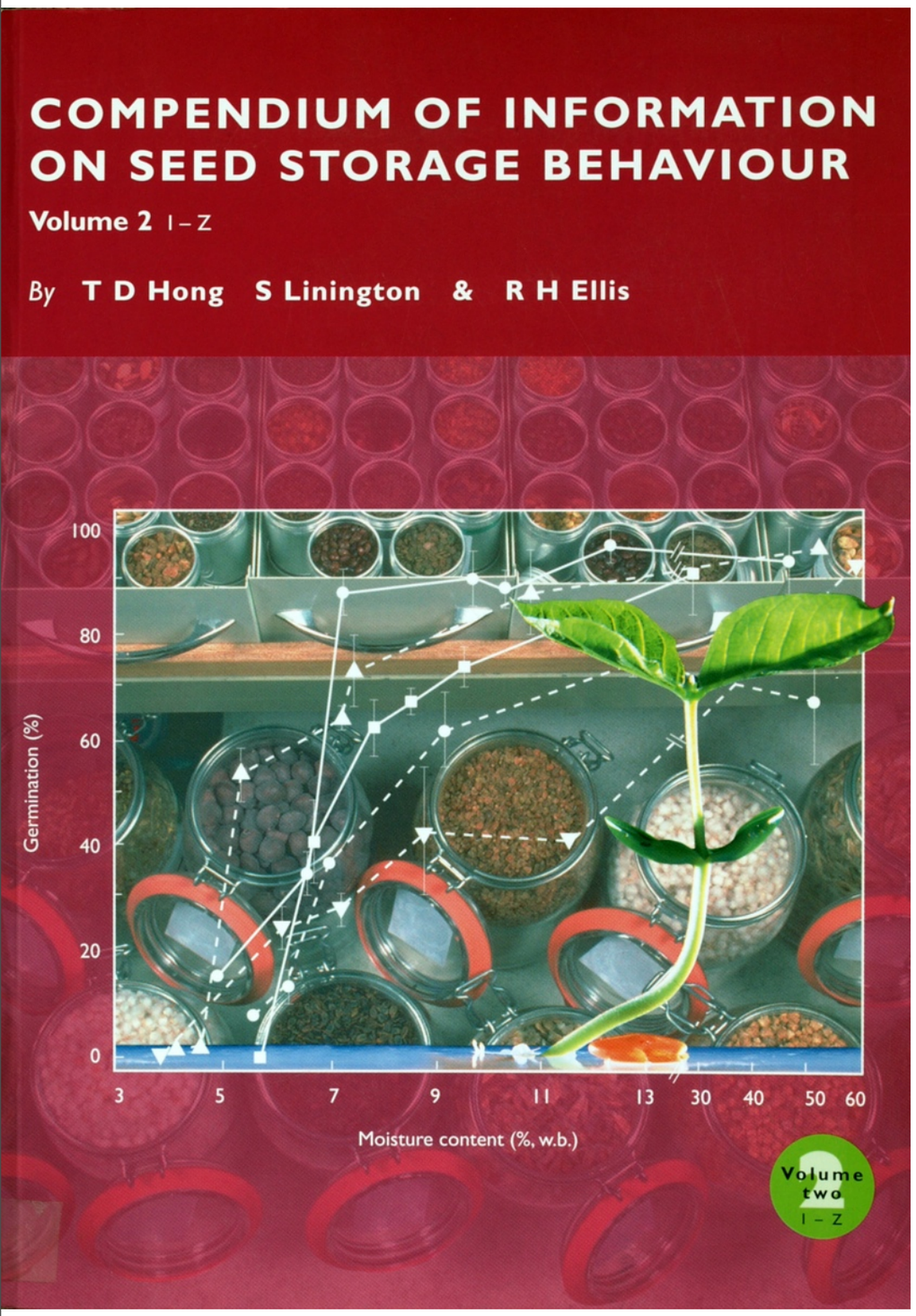
UK Progress towards Target 8

Completed because the entire British Flora is in the Millennium Seed Bank at Wakehurst Place (a part of RBG Kew)



Advantages of seedbanks

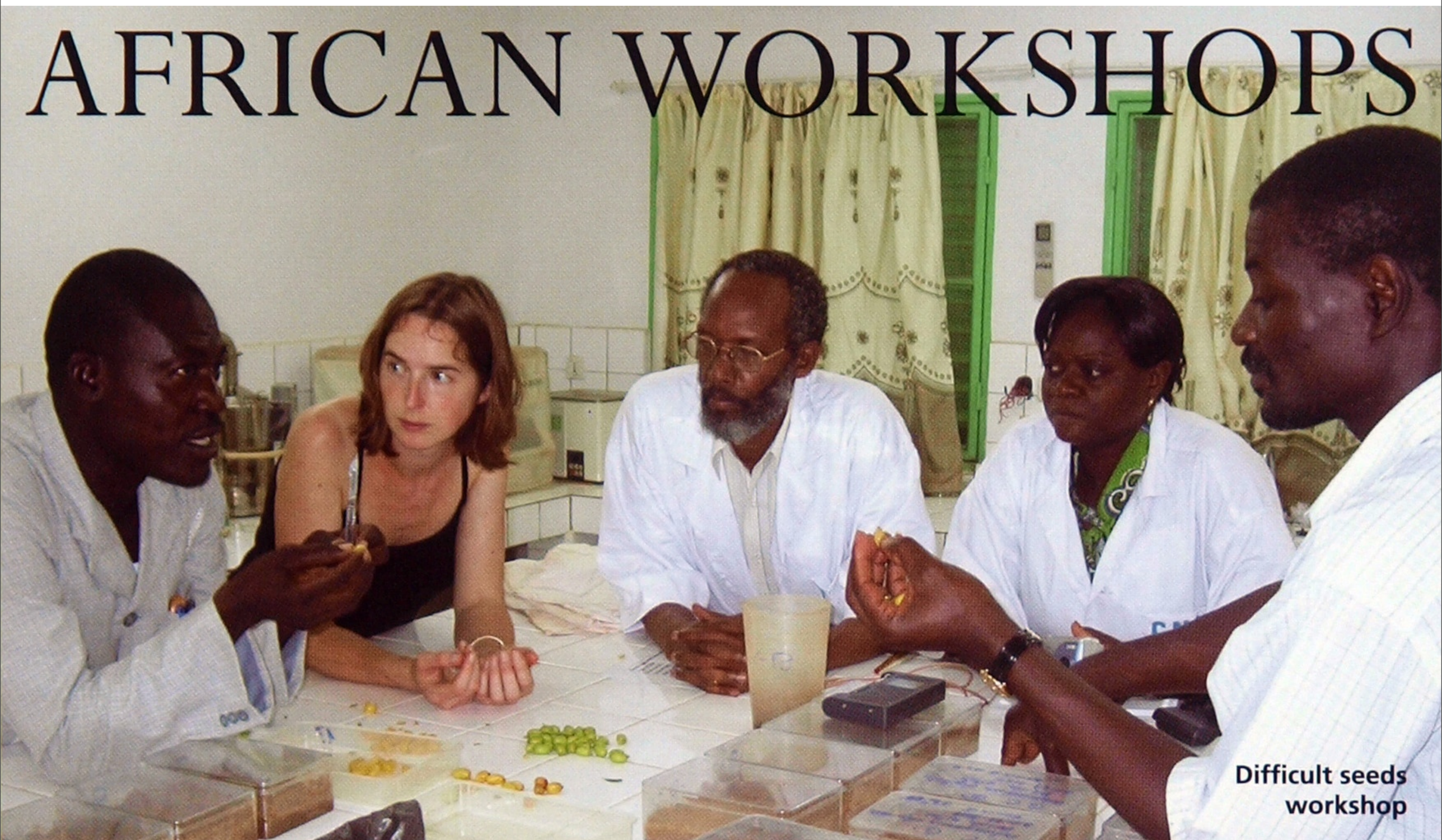
1. large gene bank
2. simple daily maintenance
3. protected from stochastic environmental threats
4. space efficient
5. centres of expertise & research
6. opportunities for twinning & support
7. focus for raising awareness
8. donor friendly



Drawbacks of seedbanks

1. ongoing, expensive technical maintenance
2. other biotic factors absent
3. genetic drift & selection
4. not all species suitable
5. ambiguous educational message
6. not an end in itself

The MSB has been a catalyst for many joint projects

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s and so on. Increasingly,
of material of high quality
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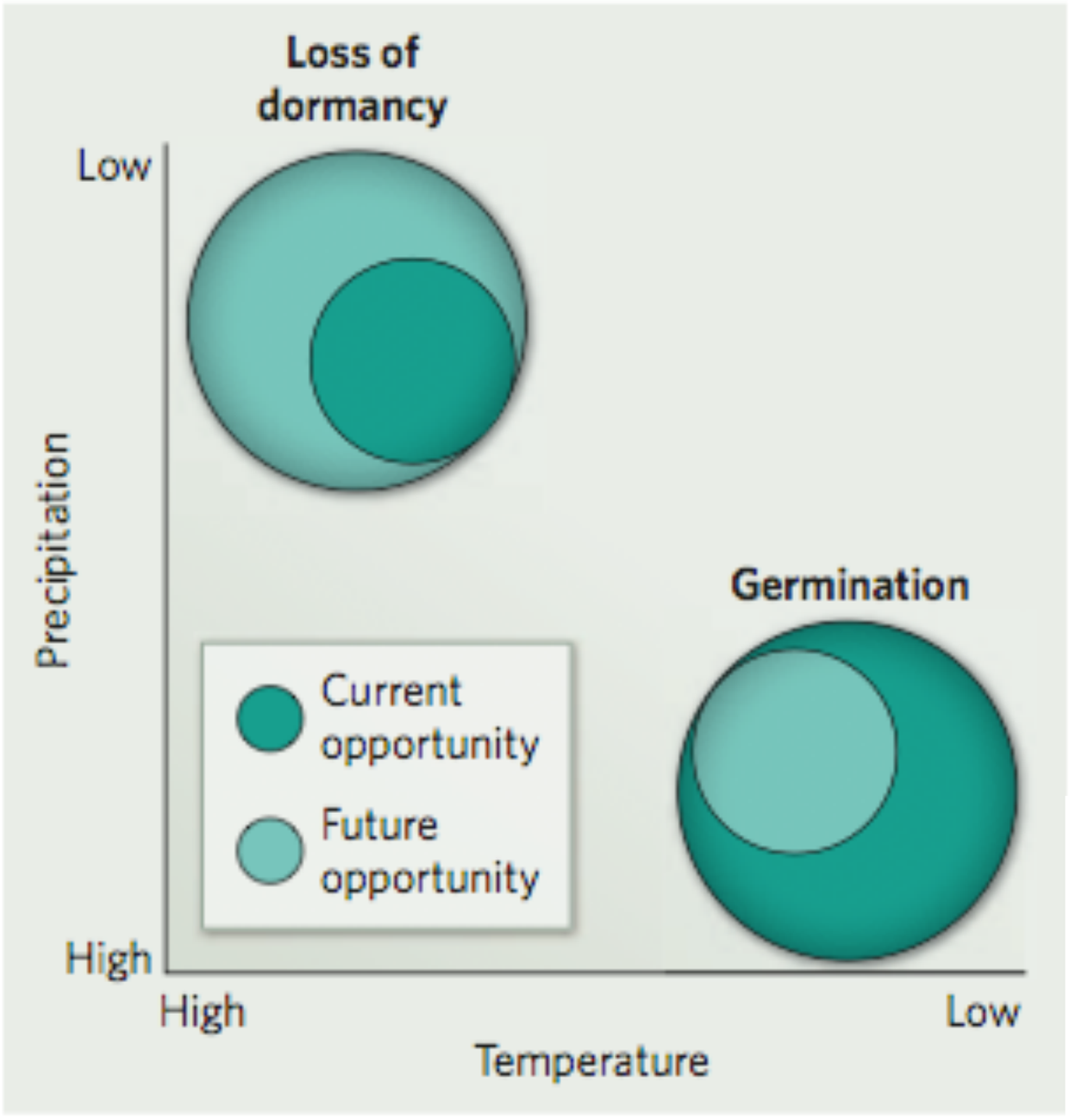
Gordon Brown Receives
One Billionth Seed

Future-proofing seed banks

Walck & Dixon Nature **462** p721 10 Dec 2009



To be sure that seeds are relevant in a climate-changed world … we must harvest as much genetic diversity as possible … and collect not 100g of seed but up to 100 kg of big seeds … to capture sufficient genetic diversity to rebuild the world's ecosystems.

Figure 1 | Changes in climate could affect the success of stored seeds. For seeds that need warm, dry conditions for dormancy to end, and cool, moist conditions to germinate — such as Western Australia's kangaroo paw — future warming and drying may enhance dormancy loss, but offer a smaller window for germination.

Original Target 9 – 70% of the genetic diversity of food crops & other major socio-economically plant species conserved along with the associated indigenous & local knowledge

REVISED TARGET 9

70% of the genetic diversity of crops & other socio-economically valuable plant species conserved, and associated indigenous & local knowledge maintained

Proposed Milestones

- Development, with Indigenous & Local Communities, priority lists of socio-economically important, underutilized species or little known crops
- Increase the involvement of global agencies such as the FAO, Bioversity, and the Global Crop Diversity Trust to avoid replication of effort

At the International Maize & Wheat Improvement Centre (CIMMYT) wild wheat (*Aegilops tauschii*) is providing resistance to pests & diseases and tolerance to drought, water logging, heat, & soil salinity

HRI Warwick – maintains the International Board for Plant Genetic Resources Base Collections of *Allium, Brassica, Daucus, Lactuca & Raphanus*. Funded by Oxfam & UK Government


Thompson & Morgan
FOXTON
Thompson & Morgan
STEMSTER
Thompson & Morgan
PURPLE KING EDWARD
Thompson & Morgan
NADINE
Thompson & Morgan
SKIRZA
Thompson & Morgan
BIMONDA
Thompson & Morgan
BLACK KING
Thompson & Morgan
HEATHER

In 36 home gardens in Cuba there is more genetic diversity of lima beans than in the FAO seedbank

Original Target 10 – Management plans in place for at least 100 major alien invasive species that threaten plants, plant communities & their associated habitats & ecosystems – fully achieved

REVISED TARGET 10

Effective management plans in place to prevent new invasions and to develop management plans for IPAs that have suffered from invasions

Proposed Milestones

- establish priority lists of biological invasions affecting IPAs
- develop lists of potential invasive species for given ecosystem/localities as a toolkit for management plans
- Establish global principles for developing management plans to address invasions including restoration
- agree general principles to identify important plant areas (in this context)

International Progress towards Target 10

GISP has achieved a great deal and there are control strategies in place for the 100 worst non-native invasive species.

UK Progress towards Target 10

UK gardeners are still part of the problem in the UK and the message does not seem to be getting through.

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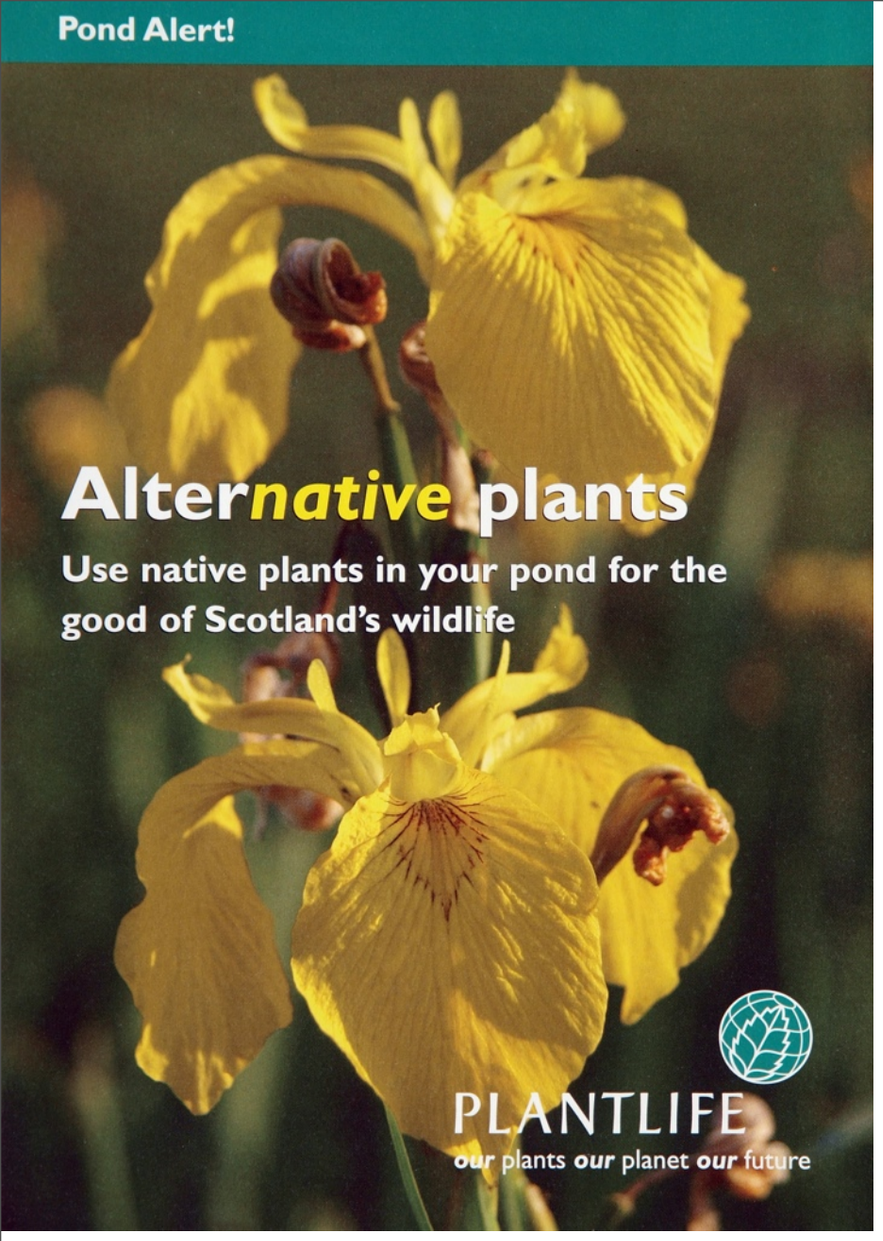
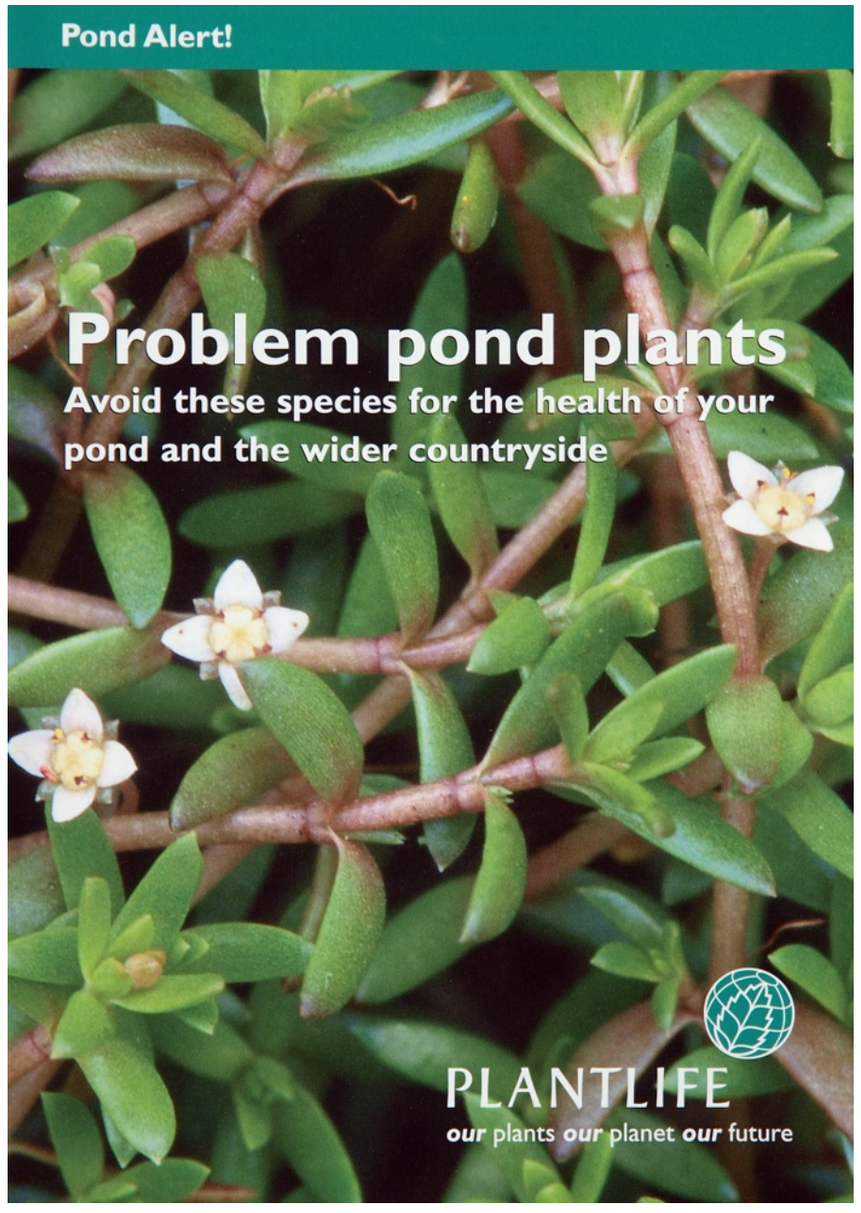
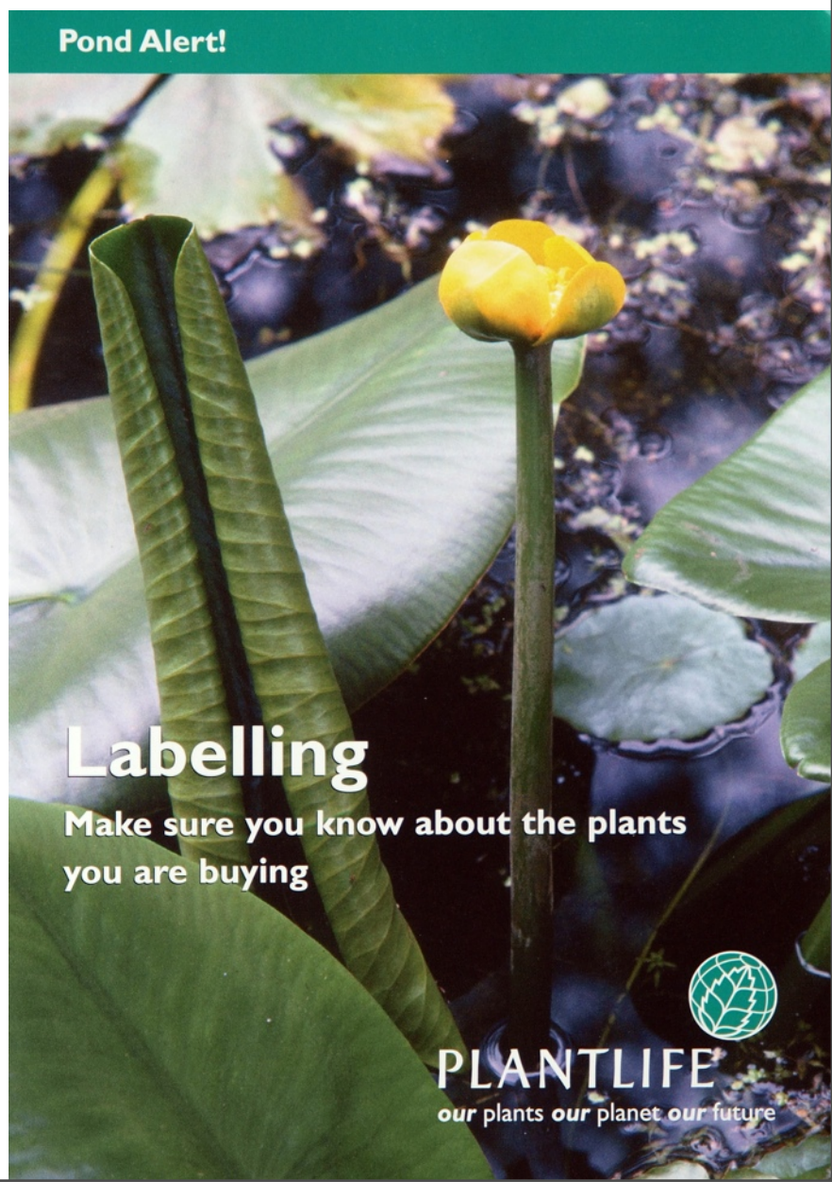
PlantLife in Scotland is trying to prevent the sale of invasive aquatic species







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A **native** species is one that was present before humans arrived. An **archaeophyte** is an honorary native; in the UK these are plants that arrived before 1500. A **neophyte** is a plant that has arrived since 1500 due to the activity of humans. An **non-native, invasive plant species** is a non-native species that spreads naturally in natural and semi-natural habitats and that produces a significant change in the composition, structure, & ecosystem processes.

The Tens Rule

ALIEN SPECIES IN BRITAIN & IRELAND – some numbers to ponder

The TENS RULE in British flowering plants[1]		
	Number of species	% of the total number of imported species
Total imported and in cultivation[2]	12,642	
Total found on uncultivated land at least once	1,642	13.1
Total established as self propagating populations	210	**1.6**
Species that have become pests	39	0.3
Species that have become severe pests	14	.1

Native & introduced plants of the British Isles[3]					
	1928 figures[4]	% of the total flora	1994 figure	% of the total flora	% of spp in B.I.
Species in cultivation			70,000[5]		100
Native species	1,700[6]	46	1,700	32	2.4
Species recorded on uncultivated land at least once	1,999	54	3586	68	5.1
Species established as self propagating populations	293	8	885	17	**1.3**
Number of hybrids between native & alien species			60	1	0.09

The numbers in the boxes show a good level of agreement. Put simply this means that there is more than a 1:100 chance of a plant that is brought into the UK escaping from cultivation into a non-cultivated habitat. Does this mean that there should be a total ban on the further import of non-native species?

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[1] Adapted from Williamson M. (1997) Biological Invasions ISBN 0 412 59190 1
[2] probably an underestimate since RBG Kew alone grows in excess of 30,000 species
[3] Adapted from Clement E.J. & Foster M.C. (1994) Alien plants of the British Isles ISBN 0 901158 23 2
[4] Druce G.C. (1928) British Plant List Arbroath
[5] RHS Plant Finder (2000)
[6] Clapham A.R., Tutin T.G. & Warburg E.F. (1978) Excursion Flora of the British Isles ISBN 0 521 04656 4

Tuesday, 16 April 2013

Rhododendron ponticum

Toxic leaf litter & three years later

Tuesday, 16 April 2013

Rhododendron ponticum in Killarney woods

Tuesday, 16 April 2013

Tuesday, 16 April 2013

Tuesday, 16 April 2013

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Common characters of alien invasive species

1. large annual seed production
2. long-term seed viability in the soil seed bank
3. self-compatible or non-specific pollinator
4. vegetative propagation
5. rapid growth
6. long distance seed dispersal
7. smothering leaf canopy
8. **VERY DIFFICULT TO KILL**

Oxalis pes-caprae in Portugal

Objective 3

Plant Diversity is used in a **sustainable** and **equitable** manner

Targets 11-13

Original Target 11 – No species of wild flora to be endangered by international trade

REVISED TARGET 11

No species of wild flora endangered by international trade

Proposed Milestones

- Strengthen links between the CBD and the CITES
- Strengthen national links between GSPC focal points and CITES focal points

Progress towards Target 11

1) Increased custom cases of dealing with trade of CITES listed material.

(Timber plants, medicinal plants, plants used in cosmetics, pot pourri, horticultural trade, cultural uses.)

2) DNA bar-coding will help with identification

3) EU controls are in place to protect UK species from over-exploitation and/or control use of wild plant resources from other countries.

A CITES manual for botanic gardens

BGCI
Plants for the Planet

Tag No. 311123

TASMANIAN TREE FERN
Manfern – *Dicksonia antarctica*

This tag certifies that this tree fern has been salvage harvested in accordance with a management plan approved by the governments of Tasmania and the Commonwealth of Australia.

Tag No. 311123

Tasmania

Australian Government
Department of the Environment and Heritage

Legal trade is straight forward

Tuesday, 16 April 2013

Trade in ornamental plants from the Philippines

1) 75% of exported native species were wild collected
2) Many of these plants were collected in protected areas
3) There is a voracious demand *for orchids in particular*
4) There were insufficient nurseries in the Philippines
5) An accreditation scheme has been introduced

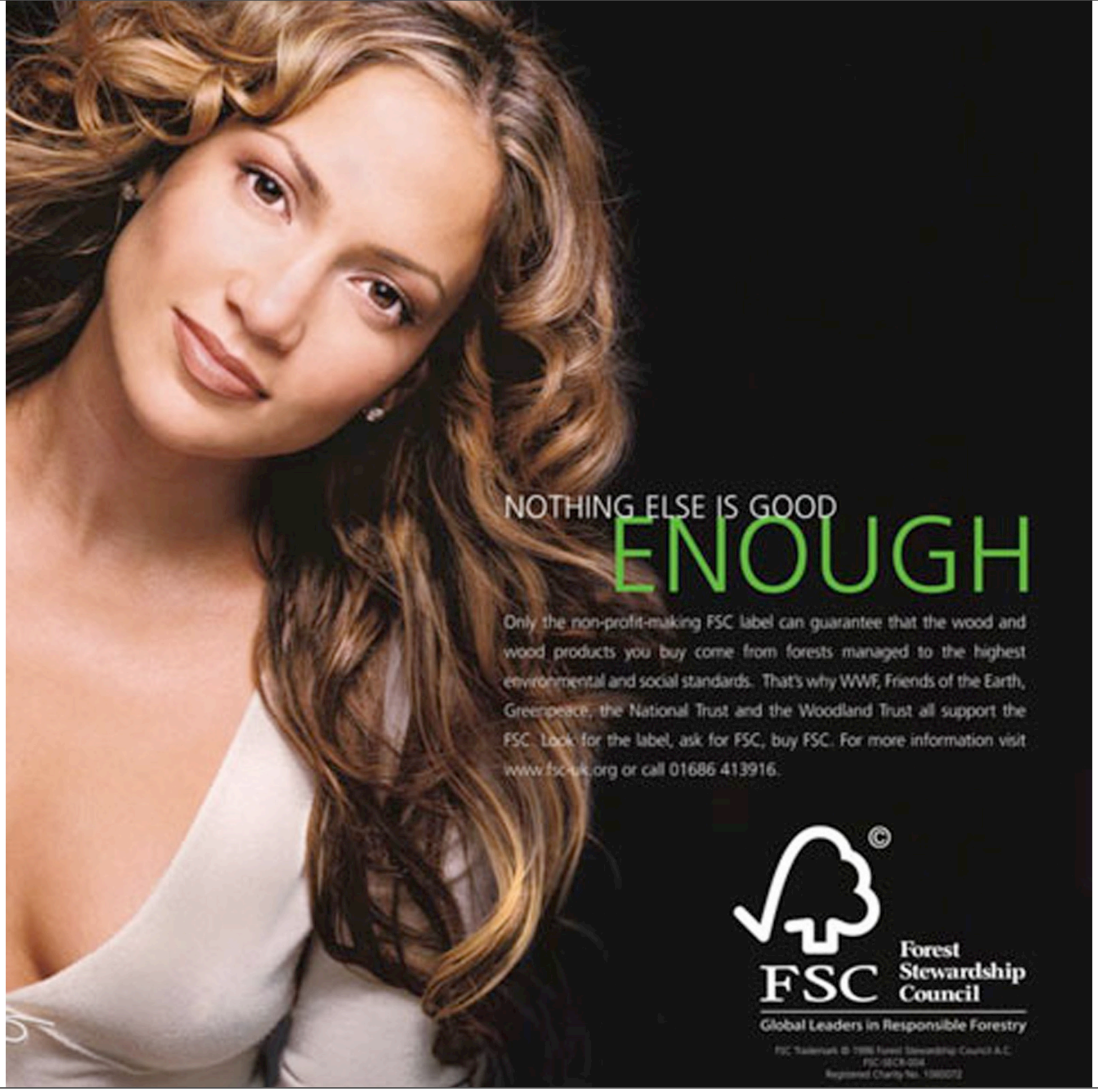
Original Target 12 – 30% of plant-based products must be derived from sustainably managed sources

REVISED TARGET 12

All wild harvested plant based products sourced sustainably

Proposed Milestones

- 2015 – in collaboration with FAO & Biodiversity to inventory plant-based products with the species from which they are derived
- 2015 – assess/certify the sustainability of a range of plant-based products
- co-ordination with CITES


NOTHING ELSE IS GOOD
ENOUGH
Only the non-profit-making FSC label can guarantee that the wood and wood products you buy come from forests managed to the highest environmental and social standards. That's why WWF, Friends of the Earth, Greenpeace, the National Trust and the Woodland Trust all support the FSC. Look for the label, ask for FSC, buy FSC. For more information visit www.fsc-uk.org or call 01686 413916.
FSC
Forest Stewardship Council
Global Leaders in Responsible Forestry

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Is it reasonable to expect Customs to identify timber?

Tuesday, 16 April 2013

INTERNATIONAL TRADE IN MEDICINAL & AROMATIC PLANTS

1) 70,000 species (25% of the World Flora is used for medicinal &/or aromatic properties)
2) 15,000 of these are threatened species
3) 3,000 species are traded internationally
4) Supply chains are very complicated
4) 100 species are cultivated commercially


广州市番禺县淀
机制
一级木薯生

Panax species and some substitutes

Tuesday, 16 April 2013


二陳丸
ERH CHEN WA
200 pills
清氣化痰丸
200粒
康
HERBALS
TEMPER
FIRE
QUELL
FIRE
Liver Fire & Damp Heat
感冒灵
36片
GANMAOLING
TABLETS
120片
利胆片
1 DOZEN
PIEN
PRESCRIPTION
TIT-TA YUEK CHING
CHINESE
FOR ALLER
RHINITIS

Original Target 13 – To halt the decline of plant resources and the associated local knowledge & practices that support sustainable livelihoods, food security & health care

REVISED TARGET 13

Maintain or increase indigenous & local knowledge, innovations, & practices associated with plant sources to support customary use, sustainable livelihoods, local food security, and health care

Proposed Milestones

- collaboration with the Millennium Development Goals framework
- incorporation of this target into national sustainable development policies

Strophanthine, from *Strophanthine*, used to treat heart disease

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Objective 4

Promotion of **education** and **awareness** about plant diversity, its role in sustainable livelihoods, and its importance to all life on Earth

Target 14

Original Target 14 – Incorporate the importance of plant diversity & the need for its conservation into communication, education and public awareness (engagement) programmes

REVISED TARGET 14

Incorporate the importance of plant diversity & the need for its conservation into communication, education and public awareness programmes

Proposed Milestones

- develop specific indicators to monitor progress
- 2015 – develop key messages for communication/marketing plan for the GSPC
- develop programme to spread the key message that climate change is a biological and socio-economic issue as well as meteorological

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Education for Sustainable Development:

Guidelines for
in Botanic G

Educación para el Desarrollo Sustentable

Lineamientos de Acción
para los Jardines Botánicos

Educación Ambiental en Jardines Botánicos

Lineamientos para el
desarrollo de estrategias
individuales

¡DÉLE VIDA A SU JARDÍN!

Interpretación Ambiental en Jardines Botánicos

Informe de la Red de Diversidad Botánica de África Austral
(Southern African Botanical Diversity Network)

Maryke Honig

eden project

THE BRITISH PHYCOLOGICAL SOCIETY

BRITISH BRYOLOGICAL SOCIETY

Association of British Fungus Groups

THE NATURAL HISTORY MUSEUM

PLANTLIFE
our plants our planet our future

PTERIDOLOGICAL SOCIETY · BRITISH

Wildflower Society

Cotswold Rare Plants Group

Landlife

Linnean Society of London

British Ecological Society

PlantNetwork

Botanical Society of Scotland

Ancient Tree Forum

Ministry of Defence

British Mycological Society

Tree Council

CEH Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL

ENVIRONMENT AGENCY

Royal Horticultural Society

ROYAL BOTANIC GARDEN EDINBURGH

Fauna and Flora International

BGCI

JOINT NATURE CONSERVATION COMMITTEE

Cyngor Cefn Gwlad Cymru
Countryside Council for Wales

SCOTTISH NATURAL HERITAGE

Ashmolean Natural History Society of Oxfordshire

Scottish Environmental Protection Agency

ENVIRONMENT AND HERITAGE SERVICE

Forest Research

PLANT HERITAGE NCCPG

defra
Department for Environment Food and Rural Affairs

NATURAL ENGLAND

Woodland Trust

Botanical Society of the British Isles

UNIVERSITY OF OXFORD

Kew
PLANTS PEOPLE POSSIBILITIES

THE NATIONAL TRUST

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Tuesday, 16 April 2013

Tuesday, 16 April 2013

Objective 5

To develop the **capacities** and public engagement necessary to implement the GSPC

Targets 15 & 16

Original Target 15 – to increase the number of trained people working with appropriate facilities in plant conservation, according to national needs to reach the targets of this strategy

REVISED TARGET 15

To increase the number of trained people working with appropriate facilities in plant conservation, according to national needs to reach the targets of this strategy

Proposed Milestones

- identify a lead agency to push this target forward
- Increase the amount of high-quality whole plant biology taught in schools and universities

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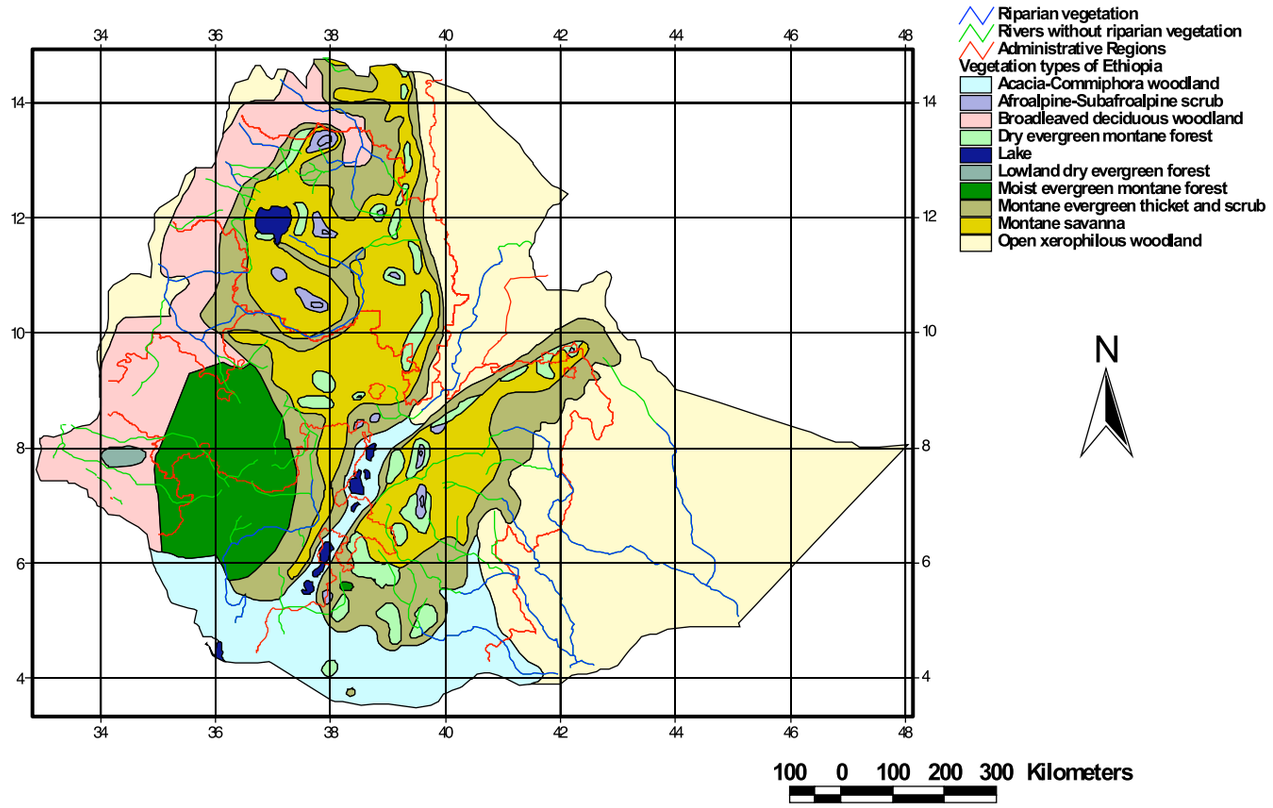


Plant conservation in Ethiopia

Area – 1,130,000 km^2 (x4 UK area) with huge topographical and climatic variation e.g. 2,200mm of rainfall in the wettest areas

Population – 77,000,000 people the majority of whom live in the mountains to escape the malaria

Flora – 6,000 species of which 10% are endemic

Problems – lack of public awareness of sustainability
lack of trained professionals
omnipresent poverty

Original Target 16 – Networks for plant conservation activities established or strengthened at national, regional & international levels

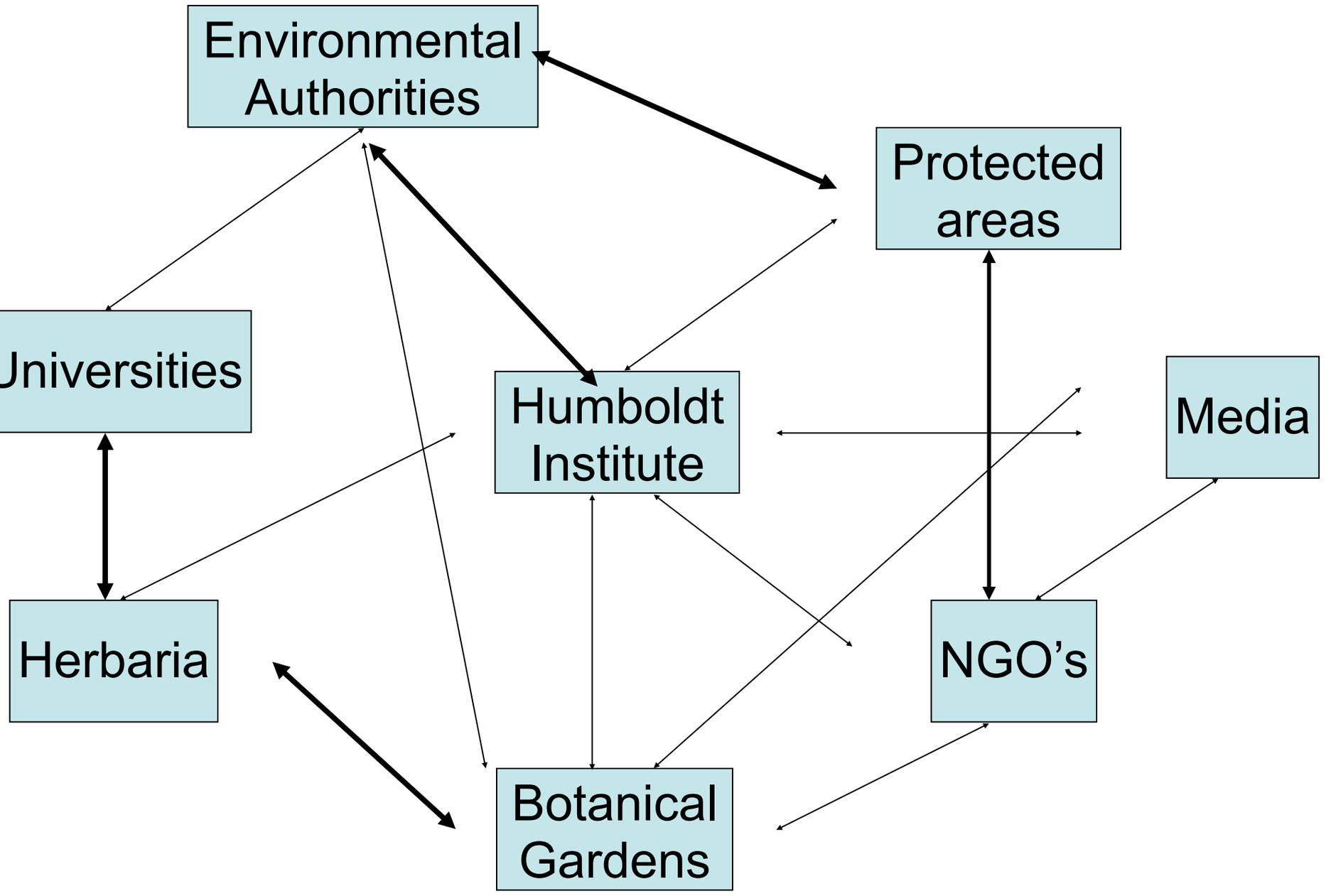
REVISED TARGET 16

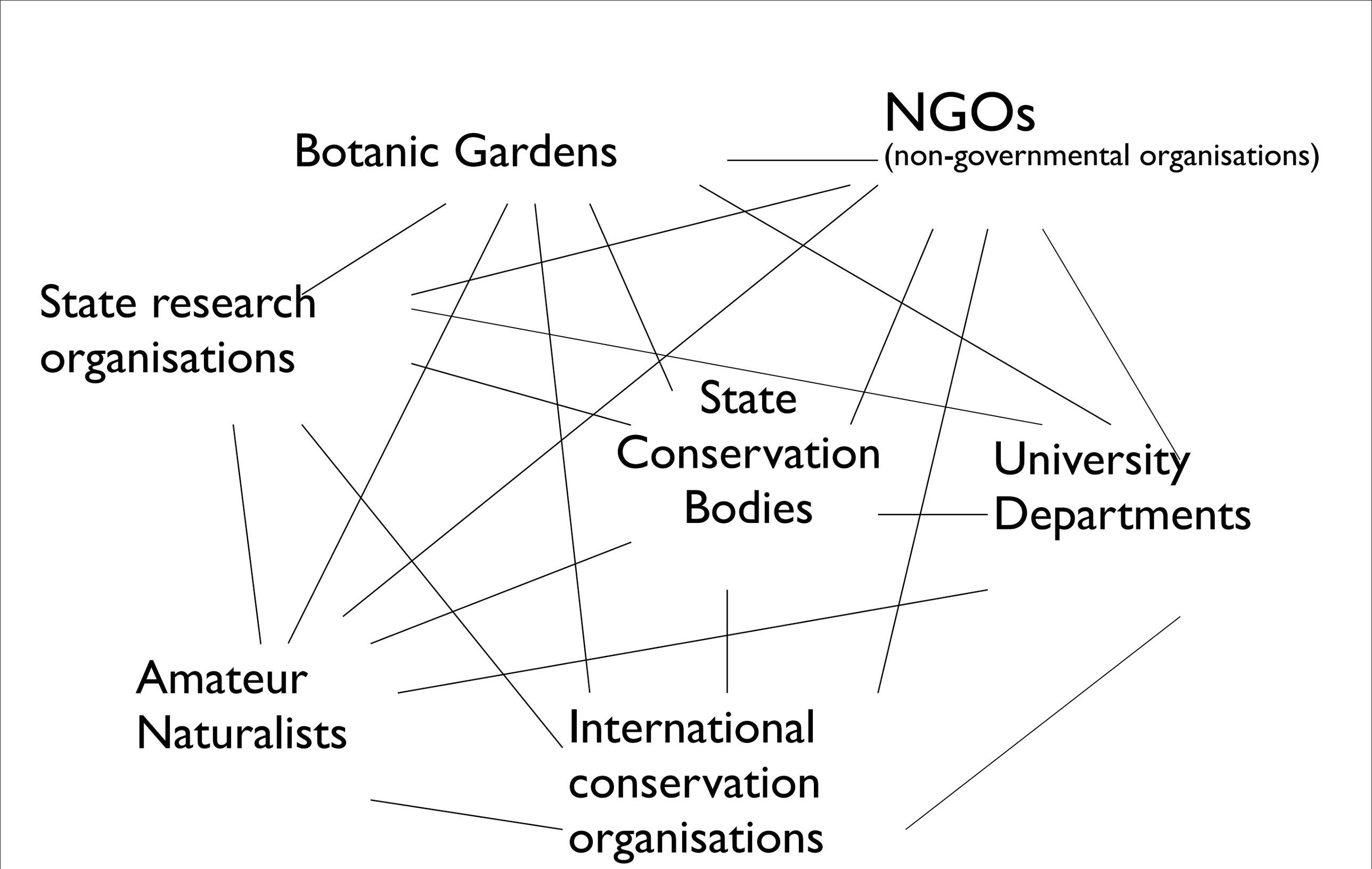
Networks for plant conservation activities established or strengthened at national, regional & international levels

Proposed Milestones

- 2015 – Included as a key component of the Toolkit
- Increase & widen the membership of the Global Partnership for Plant Conservation

Colombian network based on the Humboldt Institute





Basic National Network

The Global Partnership for Plant Conservation

A voluntary initiative that brings together international, regional & national organisations in order to contribute to the implementation of the GSPC

European Cooperative Programme for Plant Genetic Resources

ECP//GR

Observers:

Belarus, Bosnia & Herzegovina, Moldova, Russian Federation & Ukraine

Legend

European Database

Member country

Tuesday, 16 April 2013

The role of poverty

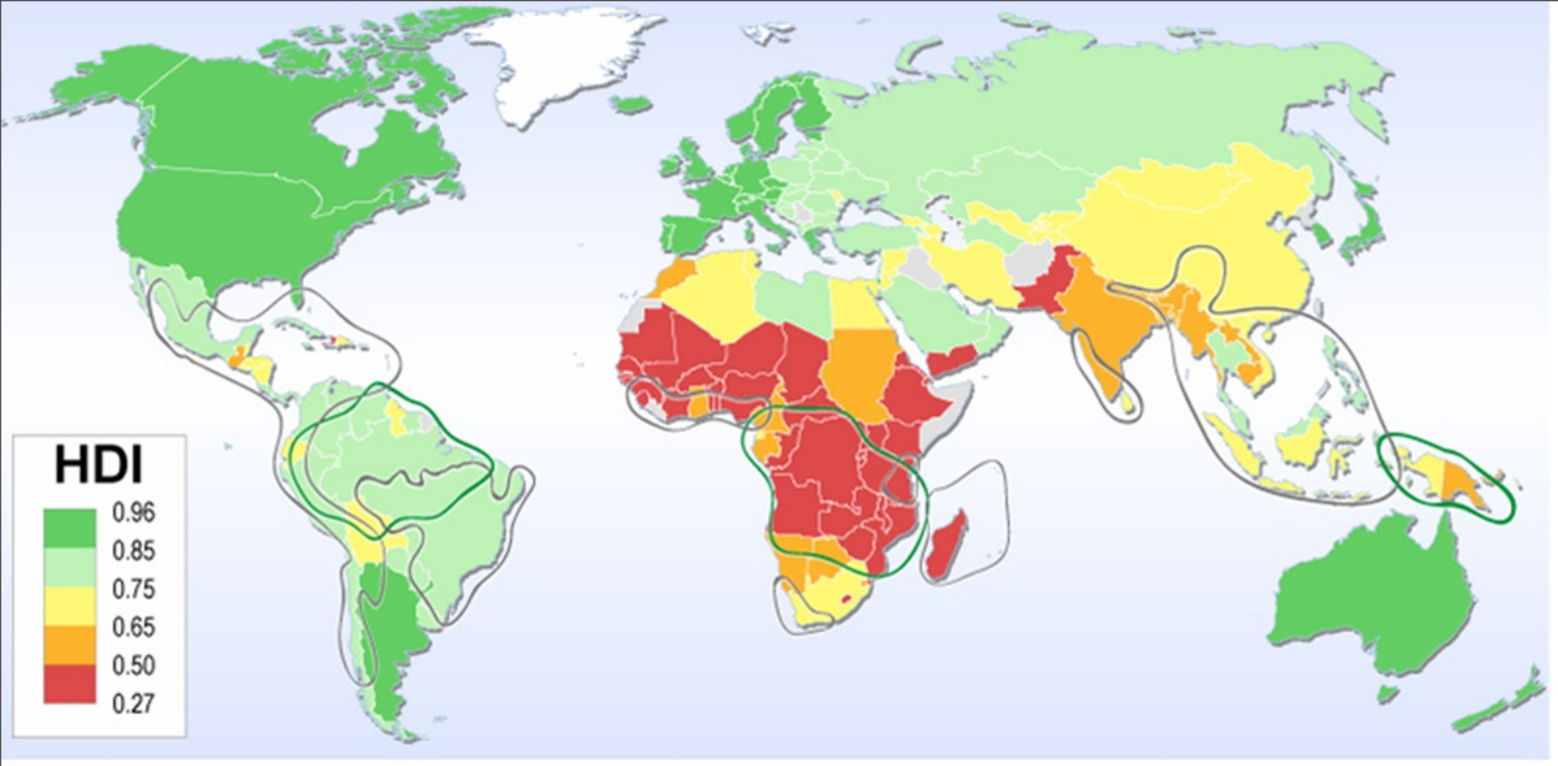
UN Millennium Development Goals

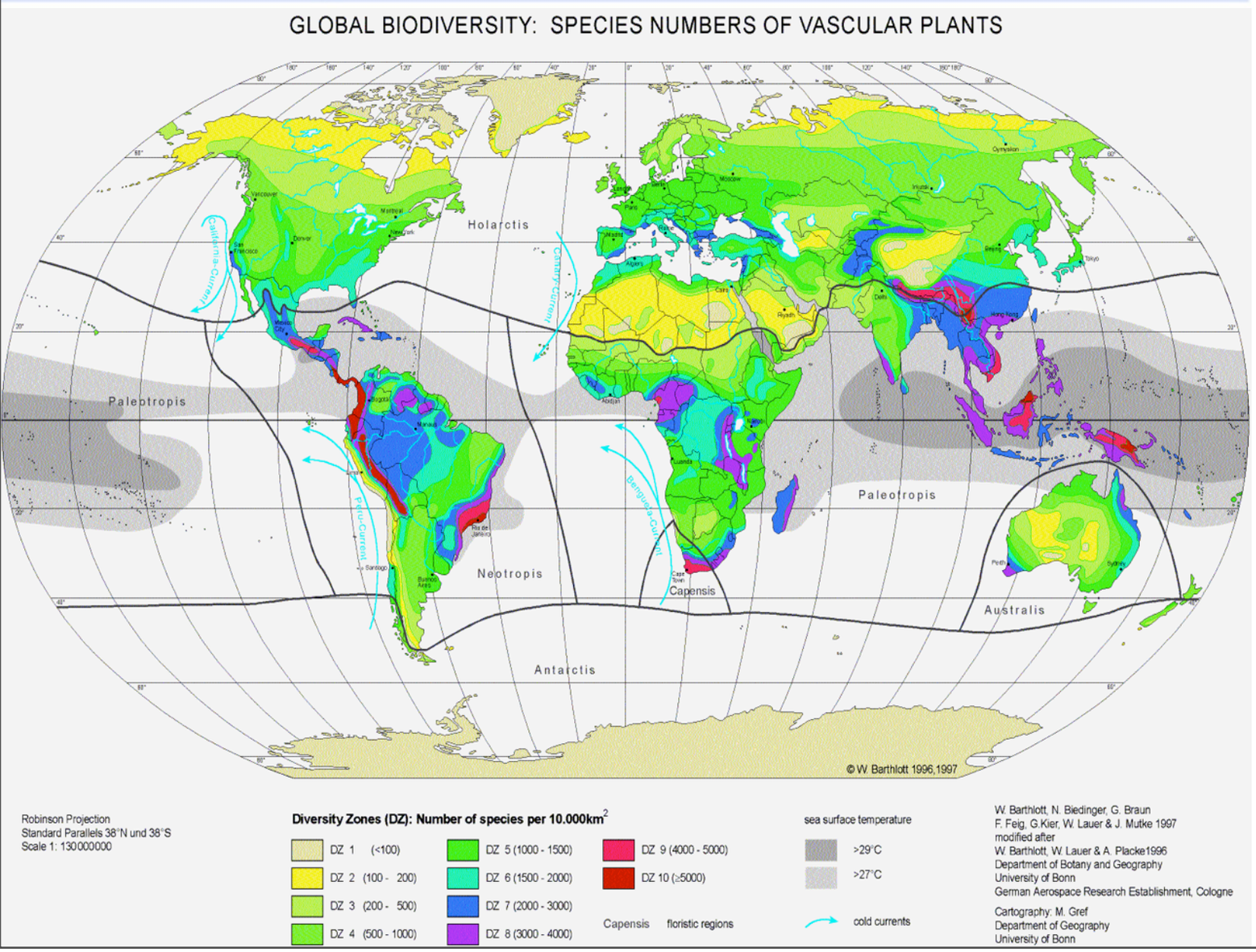
1. Eradicate extreme poverty & hunger
2. Achieve universal primary education
3. Promote gender equality & empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria & other diseases
7. **Ensure environmental sustainability**
8. Develop a global partnership for development

[www.un.org/millenniumgoals/#]

UN Millennium Development Goals – targets

1. To halve the proportion of people whose income is less than on dollar per day
2. To halve the proportion of people who suffer from hunger
9. To integrate the principles of sustainable development into country policies & programmes & **to reverse the loss of environmental resources**
10. To halve the proportion of people without sustainable access to safe drinking water & sanitation
11. To achieve a significant improvement in the lives of at least 100 million slum dwellers





Comparison of plant diversity (in terms of plant **species**) and human poverty measured (measured by Human Development Index.

HDI – is based on life expectancy, knowledge, & standard of living)

Poverty & conservation – some views

1. Poverty & conservation are separate policy realms
2. Poverty reduction must not be compromised by resource conservation
3. Poverty is a critical restraint on conservation
4. Poverty reduction depends on living resource conservation
5. Poverty reduction must not compromise resource conservation

Adams et al. (2004) Science 306 p1147

Sachs et al. Science vol.325 p.1502

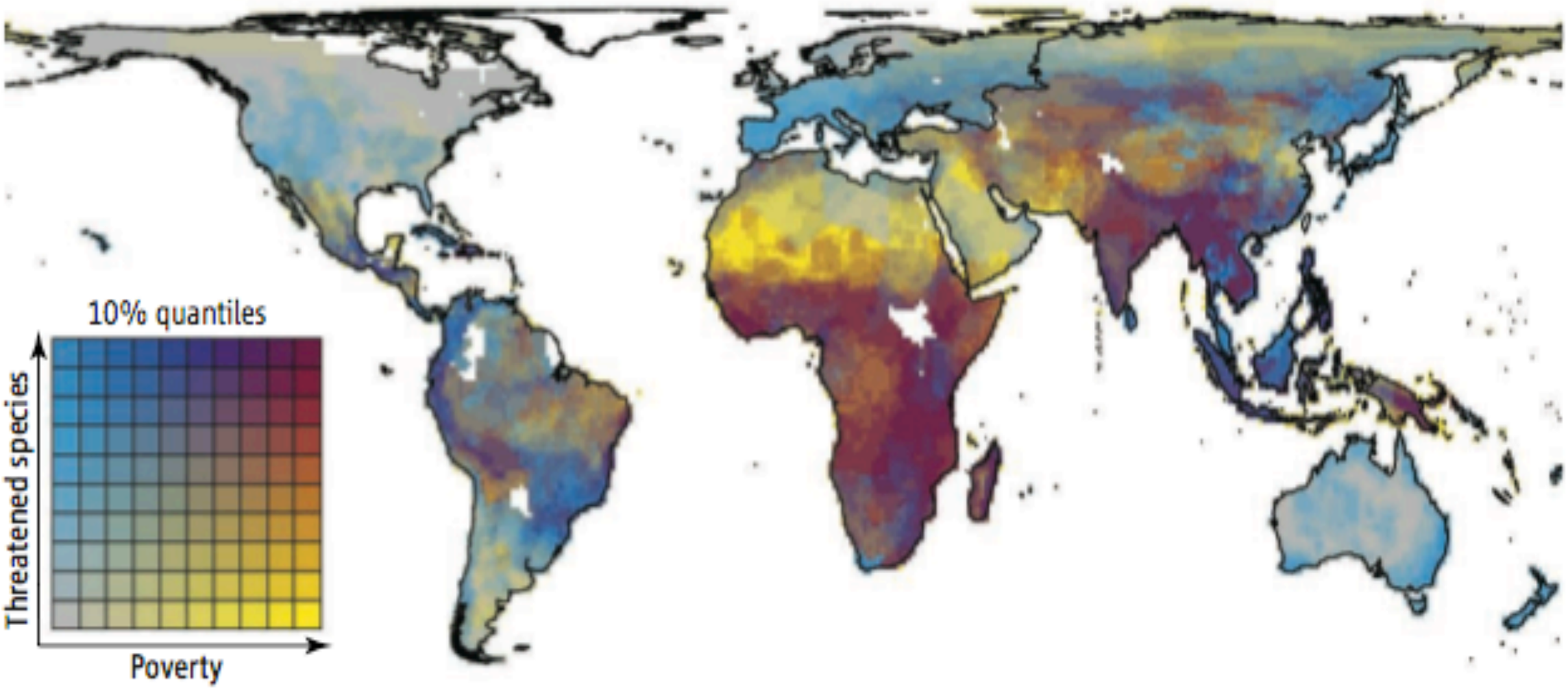


Fig. 1. Map of poverty and potential biodiversity loss, showing the level of poverty (proxied by the log rate of human infant mortality) combined with the log number of threatened species of mammals, birds, and amphibians per one-degree grid square (Behrmann equal-area projection). White areas represent missing data. Data from (*14*) and (*15*).

Science
AAAS


Mummy?
What did **you** do to prevent the extinction of plant species?