



Royal  
Botanic Garden  
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**Press release for 21 May 2012**

### **Restoring the Earth:**

#### **Botanic Gardens join forces to launch Ecological Restoration Alliance**

Botanic gardens around the world will sign an historic agreement on 23 May 2012 to restore the world's damaged ecosystems. Responding to a United Nations target to restore at least 15 percent of the world's damaged ecosystems by 2020, the following institutions have agreed to work together to form a new Ecological Restoration Alliance:

- Royal Botanic Gardens, Kew, UK
- Royal Botanic Garden Edinburgh, UK
- Missouri Botanical Garden, USA
- Brackenhurst Botanic Garden, Kenya
- Kings Park and Botanic Garden, Australia
- National Tropical Botanical Garden, USA
- Rio de Janeiro Botanic Garden, Brazil
- Instituto de Ecología, A.C. "Francisco Javier Clavijero Botanic Garden", Mexico
- Royal Botanical Gardens (Canada)
- Botanic Gardens Conservation International (BGCI)

The Alliance has ambitious aims, with a plan to restore 100 damaged, degraded or destroyed ecosystems. Restoration projects will be conducted on six continents, drawing on the proven restoration knowledge, capacity and experience of the allied botanic gardens, arboreta and seed banks (see examples of current work below). The places to be targeted include tropical forests, prairies, wild places within cities, wetlands and coastal sites – ecosystems that are under threat and are no longer able to provide essential services and resources for sustaining human livelihoods and biodiversity.

Other botanic gardens in China, South Africa, UK, USA and Venezuela are committed to joining or supporting the Alliance. The combined expertise of members will be drawn together to build

global capacity for pragmatic yet well-informed ecological restoration. The lessons learned from the initial flagship projects will be applied to other places, enhancing the contribution of restoration to achieving a healthy and sustainable planet. A new generation of practitioners will be trained and guidance provided to industry and governments toward best practices for land restoration. This ambitious 20 year initiative, developed by botanic gardens and facilitated by Botanic Gardens Conservation International (BGCI), responds to urgent global needs expressed in both the UN's Convention on Biological Diversity and the Millennium Development Goals.

#### **Quotes:**

*"At no other point in history have plant diversity and restored habitats been more important for human welfare. This is why the Royal Botanic Gardens, Kew has partnered with BGCI to lead the effort to bring together botanic gardens across the world to increase efforts to restore the rapidly disappearing plant diversity on which all our lives depend.*

*"With our combined expertise in plant diversity, botanic gardens are uniquely positioned to lay the foundation of a worldwide restoration programme that will help ensure plant communities are resilient moderators of climate change."* Professor Stephen Hopper, Director (CEO & Chief Scientist), the Royal Botanic Gardens, Kew

*"Tree planting schemes in many parts of the world fail to protect or restore natural plant diversity. Our new Alliance will address this missed opportunity ensuring that diverse plant-rich habitats are recreated incorporating endangered species that would otherwise be lost."* Sara Oldfield, Secretary General, Botanic Gardens Conservation International

*"Poverty and conservation are poor bedfellows. The challenge in Africa is to demonstrate that forest conservation can create wealth. Forest clearance provides immediate and transient gain for a few but long term poverty for the majority as rivers dry up, soils deteriorate and resources diminish".* Dr Mark Nicholson, Director, Brackenhurst Botanic Garden, Kenya.

*"We are in no doubt about the enormity of the task of restoring plant habitats - it cannot be achieved except at great costs and through the collaboration of many players. But if we do not launch this effort now the option to do so in the future may already have been lost".* Dr Stephen Blackmore CBE FRSE, Regius Keeper and Queen's Botanist, Royal Botanic Garden Edinburgh

*"Successful conservation of biodiversity worldwide will require us to become increasingly effective in ecological restoration. I welcome the launch of this new alliance as an excellent way of combining expertise, knowledge and resources of a range of major organisations to ensure that not only can we multiply our individual efforts but also to ensure that we combine our skills and resources to achieve the most urgent priorities in ecological restoration".* Dr Peter Wyse Jackson, President, Missouri Botanical Garden

*"Tropical ecosystems contain the vast majority of our planet's biodiversity and are the heart and soul of our planet's climate system. Over the past several decades we have made huge advances in understanding these complex systems and how to restore them so they continue to provide essential ecosystem services and remain safe refugia for endangered species. The*

*formation of this Alliance is a critical step forward that we should all celebrate."* Chipper Wichman, Director and CEO, National Tropical Botanical Garden, USA.

### **Examples of current projects:**

**Beach restoration increases Hawaiian green sea turtle nesting** - Ten years ago, the National Tropical Botanic Garden began an ambitious restoration of the beach and adjacent coastal forest in an area known as Lāwa'ī-kai in Hawaii. The project's first goal was to remove the invasive alien grasses, which had crowded out most native plants and hardened the beach's substrate so that the threatened Hawaiian green sea turtle was no longer able to nest. The restoration plan carefully followed fossil and historical evidence to design vegetation that would have existed on the site about a millennium ago – shortly after Polynesian arrival. Evidence from excavations at a nearby cave, as well as 6,000-year sediment cores from the area's own estuary and a dozen other paleo-ecological and archaeobotanical sites around Kaua'i, were combined with present and historical records for plants to generate a very long species list. Many of those plants, including rare palms, trees, and shrubs endemic to the island, now thrive on the three-acre restoration and this restored habitat has resulted in increased turtle nesting activities.

**Re-growing Rio** - The magnificent 200 year old Rio de Janeiro Botanic Garden has extensive experience in reforestation of the Atlantic Forest of Brazil one of the world's global biodiversity hotspots. Now the Garden is collaborating with Rio municipality on forest enrichment of hills and slopes of the city with endangered, rare, and endemic species. The main goal is to enrich the 10 to 20 year old restored forests not only with other tree species, but also with bushes, epiphytes, lianas, herbs from the Atlantic Forest bringing native biodiversity back into the city.

**Restoring Kenya's Upland Forest** – Clearing species-rich upland forest for tea plantations and associated eucalyptus forests has been going on since the early 1900's. More recently in central Kenya, non-protected forests are felled for charcoal, subsistence agriculture, commercial flower growing and residential development. Less than 2% of the original forests remain in the tea-growing areas north of Nairobi and they have been replaced with plantations of non-native eucalyptus, Australian acacia (Wattle), cypress and pine. Restoration of upland forest at Brackenhurst Botanic Garden (outside of Nairobi) in just 12 years has replaced exotic trees with a 30+ foot tall native overstory that shelters lianas, orchids and a species-rich understory. The garden now has over 1500 species of East African native plants. In addition, only while only about 10 species of birds are supported by the exotic trees, the restored forest is habitat to over 170 species of birds recorded since the project began. It has trained and employed local people, provided livelihoods in an area of high unemployment and is becoming a model for a new East African biodiversity, restoration and hardwood forestry initiative.

**Hyperarid Woodlands in Southern Peru** - The ancient Nasca people drove themselves to near-extinction by replacing woodlands of the huarango tree with intensive farming practices. Without huarango trees to release moisture to the atmosphere, the local climate became progressively drought-prone, thus dooming the agriculture in this very arid part of southern

Peru. Oliver Whaley and William Milliken (RBG Kew) have been working with local people, government and industry to propagate tens of thousands of huarango trees and to then recreate the climate-changing woodlands. For more than five years, school children and their parents have learned about the importance of these native woodlands to their own economic well-being, and have become major partners in re-establishing the woodlands and conserving remnant stands of native vegetation.

**Healing a Surface Mine Site in Western Australia** - Growing global demand for raw materials will accelerate mining of coal, aluminum and rare earths, especially in Australia. These deposits often lie below species-rich forests and shrublands that are of great conservation value. Kings Park in Perth has been working with mining companies to find ways of replacing the soil and forests using cutting-edge science as well as innovations in the mining process. It is now possible to restore over 90% of the plant species found in a mined Jarrah Forest, producing a complex forest structure in 15 to 20 years that is suitable as habitat for rare birds and mammals. Just as important, the restored forest provides a much better watershed for capturing the available precipitation than the forestry-type plantations that were commonly installed in the past.

**Integrating restoration into Protected Areas management in Madagascar** –Madagascar is widely recognised as a globally important biodiversity hotspot with one of the world’s more highly threatened floras. Over the last decade, the Missouri Botanical Garden’s programme in Madagascar has incorporated ecological restoration into the design and management of a network of 11 new community-based conservation initiatives established over the last decade throughout the island. Typically this involves reducing pressure on areas of partially degraded forest to facilitate natural regeneration, and where appropriate, planting selected native tree species using seedlings from local provenances propagated in on-site village nurseries. Pioneer tree species are typically used in degraded situations to provide conditions under which species of later successional stages can germinate and develop, complemented by “enrichment” planting with useful, over-exploited native species chosen by local stakeholders. Research on the best adapted species and the best techniques and strategies to use is underway by MBG staff, local collaborators and expatriate volunteers from the Restoring Natural Capital Alliance network, whose Secretariat is based at MBG. Efforts are also underway with local communities to improve livelihoods, develop alternative sources of food and fuelwood, and improve income-generation and thereby reduce pressure on the forests and raise the local standard of living.

**Restoring native habitats of the U.S. Midwest** – The Missouri Botanical Garden has developed a 2,400 acre (970 ha) reserve, Shaw Nature Reserve, since 1925. Originally intended as a garden-annex and arboretum, from its earliest days “the Arboretum” became known for its native woodlands and wildflowers. Since 1980 its purpose has developed to become an important regional centre for environmental education and conservation of native biodiversity and ecosystems of the Missouri region. Extensive areas of restored tallgrass prairies, wetlands, woodlands, glades (xeric meadows) and riparian areas have been created or restored. An experimental approach to vegetation management practices has been employed, with the aim of developing models and protocols applicable more widely. Management techniques practiced include controlled burning, invasive species clearing with national youth volunteer

groups, and aerial spraying of invasive plant species. A demonstration garden featuring over 700 plant species native of the region has been created, and a native plant seedbank is under construction.

## **Ends**

Pictures: Available from BGCI or the Royal Botanic Gardens, Kew press office

## **Notes to editors**

### **About Botanic Gardens Conservation International (BGCI)**

Linking more than 800 botanic gardens and other partners in some 120 countries, BGCI is the world's largest plant conservation organisation. From grass-roots action to global policy development, BGCI operates at all levels to achieve plant conservation, environmental education and development goals. With its headquarters located at the Royal Botanic Gardens, Kew, UK, BGCI also operates national programme offices in the USA and China. For further information, visit [www.bgci.org](http://www.bgci.org).

### **United Nations target for restoration**

In 2010 the Parties to the UN's Convention of Biological Diversity agreed a Strategic Plan for Biodiversity 2011-2020 – a ten year framework for action by all countries and stakeholders to save biodiversity and enhance its benefits for people. The Strategic Plan includes 20 biodiversity targets, of which Target 15 calls for: *“By 2020 ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15% of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.”*

### **Restoration ecology**

The Society for Ecological Restoration (SER 2004) defines **restoration ecology** as: The science that underpins 'the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed'. Further information is available on the Royal Botanic Gardens, Kew website <http://www.kew.org/science-research-data/directory/teams/restoration-ecology/>