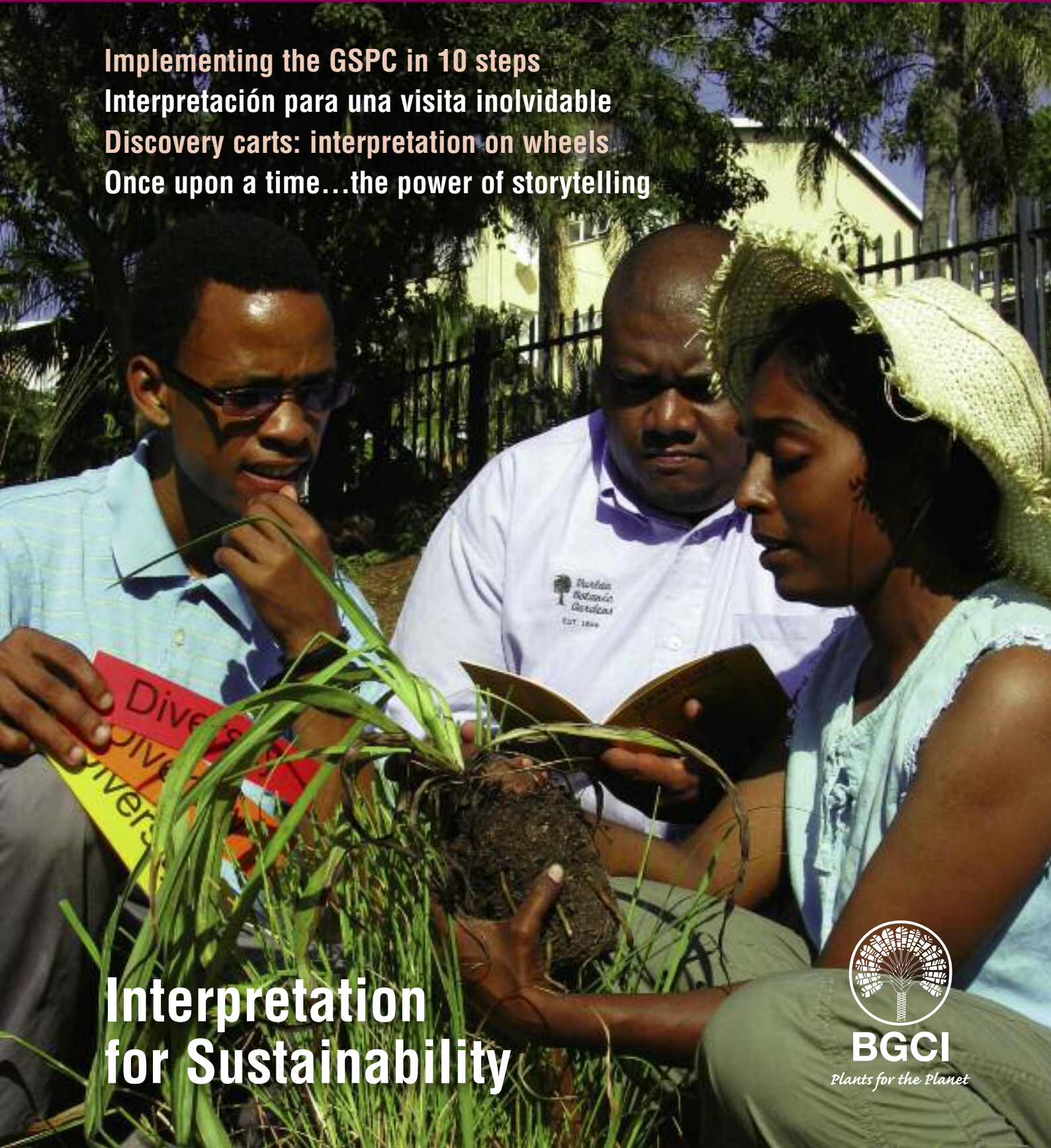


# roots

Botanic Gardens Conservation International Education Review

April 2009

Implementing the GSPC in 10 steps  
Interpretación para una visita inolvidable  
Discovery carts: interpretation on wheels  
Once upon a time...the power of storytelling



**Interpretation  
for Sustainability**



**BGCI**

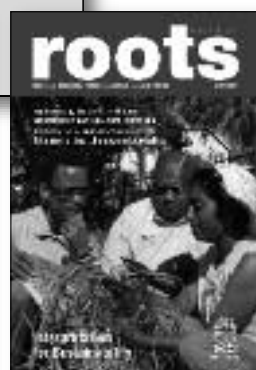
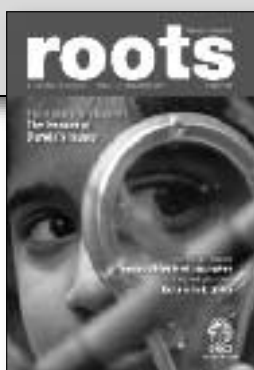
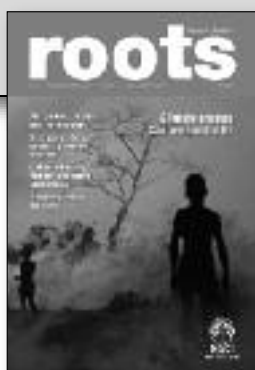
*Plants for the Planet*

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# Interpretation for sustainability

## Editorial - English

In its conjunction of planting and place, of history and culture, the botanic garden is a microcosm of humankind's relationship with the natural world. No matter how familiar the scene, everywhere you look there is a story to be told, a message to be conveyed. And with more than 200 million people worldwide visiting botanic gardens every year, the challenge of engaging with them meaningfully grows apace. Around the world gardens deploy an impressive range of strategies to capture the public's attention and interpret what they see - from guided tours, signage, discovery carts and exhibitions through to websites, blogs and podcasts.

A recurring question for botanic gardens everywhere is 'what do we want to interpret and communicate?' While picking out the salient narratives and messages from the abundance of material contained within a garden remains a challenge, for most gardens there is probably one topic that stands head and shoulders above the rest in terms of importance, namely plant conservation. We're all aware that our environment is under immense pressure from human activity and its consequences and we only have to look at what's happening now in the global economy to get a sense that our 'business as usual' model of the world is not working. People are searching for alternative solutions. Now, surely, is a golden opportunity for gardens to develop their interpretation in a way that engages their visitors' imaginations and encourages them to re-evaluate their attitudes and ways of living?

## Editorial - Français

Par sa mise en relation de la plantation avec le site, avec l'histoire et la culture, le jardin botanique est un microcosme qui représente les relations de l'humanité avec le monde naturel. Peu importe comment une scène est familière, partout où vous regardez, il y a une histoire à raconter, un message à transmettre. Et avec mondialement plus de 200 millions de personnes visitant les jardins botaniques chaque année, le défi de les interpeller de façon raisonnable se développe sans doute rapidement. De par le monde les jardins déploient une gamme impressionnante de stratégies pour attirer l'attention du public et pour interpréter ce qu'ils voient.

Une question récurrente pour tous les jardins botaniques est 'que voulons-nous interpréter et communiquer?' Tandis que la sélection des récits et des messages saillants dans l'abondance de matériel que fournit un jardin reste un défi, il y a probablement pour la plupart des jardins une matière prépondérante, dépassant toutes les autres en termes d'importance, à savoir la conservation des plantes. Nous nous rendons tous compte que notre environnement se trouve sous une immense pression à la suite des activités humaines et de leurs conséquences et nous n'avons qu'à observer ce qui se passe actuellement au niveau de l'économie globale pour comprendre que notre modèle du 'business as usual' ne fonctionne pas. Les gens sont à la recherche de solutions alternatives. Maintenant est certainement une occasion magnifique pour les jardins de développer leur interprétation d'une manière à engager

## Editorial - Español

En la conjunción de colecciones y territorio, de historia y cultura, el jardín botánico es un microcosmos donde se refleja la relación de la humanidad con la naturaleza. Independientemente de lo familiar que nos resulte, allí donde se mire hay una historia que contar o un mensaje que transmitir. Con más de 200 millones de visitantes cada año, el desafío de lograr el interés de forma activa y significativa es cada vez mayor. Por todo el mundo los jardines despliegan una impresionante variedad de estrategias para captar la atención del público y dar interpretación a lo que observan: desde visitas guiadas, señalización, 'carros para el descubrimiento', múltiples exposiciones, incluso sitios webs, blogs y podcasts.

Una cuestión repetida por los jardines botánicos en cualquier lugar es '¿qué queremos interpretar y qué comunicar?'. Si bien el destacar y el subrayar el mensaje que contiene cada jardín todavía resulta un desafío, hay un tema que sobresale por encima de todos en importancia, y éste es el de la conservación de las especies de plantas. Todos somos conscientes de que nuestro entorno sufre la enorme presión y las consecuencias de la actividad humana y no tenemos más que mirar a lo que está pasando en la economía global para sentir que el modelo de la frase hecha '¿los negocios?', como siempre' no funciona. La gente busca soluciones alternativas. Es el momento y la oportunidad, única, de desarrollar el trabajo de interpretación por caminos que interesen a la imaginación de los visitantes para reconsiderar sus actitudes y estilos de vida.

Interpretation is a vast subject and this issue of *Roots* barely scratches the surface of what there is to know. James Furse-Roberts, Senior Consultant at Wildfowl and Wetland Trust, UK, sets the scene for us by looking at the big picture. He emphasises the importance of holistic interpretative planning for visitor experiences and offers us a four-stage planning process. Amy Ryken, Associate Professor at the University of Puget Sound, USA, shares her findings from an eight-month study she undertook into visitor engagement at the W.W. Seymour Botanical Conservatory in Tacoma, Washington. Amy's study, also informed by her visits to botanic gardens in Canada, UK, and USA, is illuminating and encourages us to reconsider our views of learning and nature in relation to visitor worldviews. Her approach is echoed by Paola Sierra Manrique, Education Coordinator at the José Celestino Mutis Botanic Garden in Bogota, who outlines her analysis of what she believes would make an unforgettable visit to the garden.

We also explore some of the interpretative techniques that gardens are using to engage their public. Marilyn Smith, Director of Children's Education at Brooklyn Botanic Garden, USA, writes about the benefits of using discovery carts and explains the practicalities. And Martin Clement, Head of Education at the Durban Botanic Garden, South Africa, describes how his team use story telling to draw on existing indigenous knowledge systems in developing more meaningful action-based programmes. If you're interested in finding out more, please join us in Durban this year for BGCI's 7th International Congress on Education in Botanic Gardens (see back cover of *Roots*).

Interpretation can be used to raise awareness at many different levels and increasingly we are seeing national and international collaboration between botanic gardens aimed at focusing attention on the need for plant conservation. Last summer, BGCI, Popular Science Network of Botanic Gardens, Chinese Academy of Sciences and Beijing Municipal Science and Technology Committee

l'imagination de leurs visiteurs et de les encourager à ré-évaluer leurs attitudes et modes de vie.

L'interprétation est un sujet très vaste et cette issue de *Roots* raye à peine la surface de tout ce qu'on peut savoir sur la question. James Furse-Roberts, conseiller au Wildfowl and Wetland Trust, R-U, nous prépare la scène en traçant les grandes lignes. Il souligne l'importance d'une planification interprétative d'ensemble pour l'expérience du visiteur et nous propose un processus de planification en quatre étapes. Amy Ryken, professeur agrégé à l'université de Puget Sound, États-Unis, nous fait part des résultats d'une étude de huit mois, qu'elle a menée au sujet de l'interpellation des visiteurs au conservatoire botanique de W.W. Seymour à Tacoma, Washington. L'étude d'Amy, renseignée aussi par ses visites de jardins botaniques au Canada, R-U, et aux États-Unis, est admirable et nous encourage à reconsidérer nos vues sur l'apprentissage et la nature par rapport aux visions du monde des visiteurs. Paola Sierra Manrique, coordinatrice d'éducation au jardin botanique de José Celestino Mutis à Bogota, fait écho de cette approche en rendant son analyse de ce qui selon elle ferait une visite inoubliable au jardin.

Nous explorons également certaines des techniques interprétatives que les jardins emploient pour interpeller leur public. Marilyn Smith, directeur de l'éducation des enfants au jardin botanique de Brooklyn, États-Unis, écrit au sujet des avantages d'utiliser des chariots de découverte et explique les caractères pratiques. Et Martin Clement, chef de l'éducation au jardin botanique de Durban, Afrique du Sud, décrit comment son équipe utilise les contes parlés pour se baser sur les systèmes de connaissances indigènes existants afin de développer des programmes d'action plus significatifs. Si vous êtes intéressé à en savoir plus, joignez-nous donc à Durban, cette année pour le 7ème congrès international de BGCI sur l'éducation dans les jardins botaniques (voyez au dos de *Roots*).

L'interprétation peut être un outil pour améliorer la prise de conscience à de nombreux niveaux différents et de plus en plus nous voyons des collaborations

La interpretación es un tema tan amplio, que éste número de *Roots* sólo someramente puede abordar lo mucho que se sabe. James Furse-Roberts, Senior Consultant del Comisariado de Humedales y Aves, Reino Unido, nos introduce en el panorama centrandolo el plano general. Destaca la importancia de una planificación interpretativa holística enfocada a partir de la experiencia del visitante y ofrece cuatro estadios en el proceso. Amy Ryken, Catedrática Asociada de la Universidad de Puget Sound, EEUU, muestra los hallazgos de su investigación de ocho meses de duración, analizando el interés de los visitantes en el W.W. Seymour Botanical Conservatory en Tacoma, Washington. El estudio de Amy, completado con visitas a diversos jardines botánicos de Canadá, Reino Unido y EEUU, es clarificador y anima a reconsiderar nuestra visión del aprendizaje y la naturaleza contrastándolos con los puntos de vista del visitante. Su enfoque se refleja en el de Paola Sierra Manrique, Coordinadora de Educación del Jardín Botánico José Celestino Mutis de Bogotá, quien subraya en su análisis lo que de verdad hace de la visita al jardín una experiencia inolvidable para el visitante.

Examinamos también algunas de las técnicas de interpretación que los jardines botánicos utilizan para interesar al público. Marilyn Smith, Directora de Educación Infantil del Brooklyn Botanic Garden, EEUU, relata el provecho de las performances mediante las 'carretas para el descubrimiento' y explica su conveniencia. Martin Clement, Jefe de Educación en el Durban Botanic Garden, Sudáfrica, describe cómo su equipo usa los cuentacuentos para extraer del conocimiento indígena sistemas que desarrollen programas activos más significativos. Si Ud. está interesado en averiguar más, únase a nosotros este año con motivo del 7º Congreso Internacional de Educación en Jardines Botánicos en Durban en Sudáfrica (ver portada trasera de *Roots*).

La interpretación puede usarse para despertar la conciencia a muchos niveles, y estamos presenciando la colaboración activa entre jardines

took advantage of the Beijing Olympics to mount the first World Botanic Garden Exhibition. The exhibition was in a prime location, close to the Olympic Village, and was visited by tens of thousands of people. In this issue Xiangying Wen, BGCI's China Project Office, examines the development of the exhibition and its aim of publicising the work of 70 botanic gardens worldwide. Another global event held last year in Germany was the Conference of the Parties to the Convention on Biological Diversity – a conference which brought together government environmental representatives from all over the globe to discuss the fate of the world's biodiversity. In their article, staff at Bonn Botanic Garden, Germany and the University of Oxford Botanic Garden, describe a collaboration which raised awareness of the Global Strategy for Plant Conservation to hundreds of government officials.

By working together, sharing their interpretative expertise and experience, botanic gardens and related institutes are able to present a concerted and far more powerful case for plant conservation than if they do so by themselves. This year Plant Conservation Day (PCD) provides just that opportunity. Botanic gardens, zoos and other institutions worldwide will be using May 18th to celebrate plants and raise awareness of the need for their conservation. With support from the Boeing Corporation, BGCI is revamping the PCD website and partnering with gardens in Australia, China, Russia, UK and the USA to run a series of exciting education and interpretation programmes. Why not join in? Visit the website [www.plantconservationday.org](http://www.plantconservationday.org) for ideas and resources.

nationales et internationales entre les jardins botaniques visant à concentrer l'attention sur la nécessité de conserver les plantes. L'été dernier, l'Académie Chinoise des Sciences, BGCI et le Comité Municipal de la Science et de la Technologie de Pékin ont tiré profit des Jeux Olympiques de Pékin pour monter la première Exposition Mondiale de Jardins Botaniques. L'exposition était située dans un endroit privilégié, près du village olympique, et a été visitée par des dizaines de milliers de personnes. Dans cette issue Xiangying Wen, du bureau de projet Chine de BGCI, examine le développement de l'exposition et son but de rendre public le travail de 70 jardins botaniques dans le monde entier. Un autre événement global, qui s'est déroulé l'année dernière en Allemagne, était la Conférence des Parties à la Convention sur la Diversité Biologique - une conférence, qui a rassemblé les représentants environnementaux des gouvernements de par le globe, pour discuter du destin de la biodiversité mondiale. Dans leur article, le personnel du jardin botanique de Bonn, Allemagne et du jardin botanique de l'université d'Oxford, décrivent une collaboration qui permis de mieux promouvoir la Stratégie Globale pour la Conservation des Plantes auprès des centaines de fonctionnaires gouvernementaux.

En travaillant ensemble, partageant leur expertise et expérience interprétatives, les jardins botaniques et instituts associés peuvent présenter une argumentation concertée et bien plus puissante pour la conservation des plantes qu'à eux seuls. Cette année, la Journée de la Conservation des Plantes (Plant Conservation Day. PCD) fournit justement une telle occasion. Les jardins botaniques, les zoos et d'autres établissements dans le monde entier utiliseront le 18 mai pour célébrer les plantes et améliorer la prise de conscience de la nécessité de leur conservation. Avec l'appui de Boeing Corporation, BGCI est en train de refondre le site Web de PCD et s'associe avec des jardins en Australie, en Chine, en Russie, au R-U et aux États-Unis pour lancer une série de programmes d'éducation et d'interprétation passionnants. Pourquoi ne pas se joindre à eux ? Visitez le site Web [www.plantconservationday.org](http://www.plantconservationday.org) pour des idées et des ressources.

botánicos, también internacionalmente, dirigida a centrar la atención en la necesidad de la conservación de las especies de plantas. El pasado verano la Academia de Ciencias China, el BGCI y el Comité Municipal de Beijing para la Ciencia y la Tecnología, aprovechando las Olimpiadas de Pekín, organizaron la 1ª Exposición Mundial de Jardines Botánicos. Instalada en un lugar privilegiado, junto a la Villa Olímpica, fue visitada por decenas de miles de personas. Xiangying Wen, de la Oficina del BGCI China Project, revisa en este número el desarrollo de la exposición y su objetivo central de publicitar el trabajo de 70 jardines botánicos de todo el mundo. Otro evento de carácter mundial ha tenido lugar en Alemania, la Conferencia de las Partes de la Convención sobre Diversidad Biológica, reuniendo a representantes medioambientales de todo el mundo para discutir el futuro de la biodiversidad global. El personal del Jardín Botánico de Bonn (Alemania) junto con el de la Universidad de Oxford, presentan una colaboración que elevó la conciencia de cientos de funcionarios gubernamentales acerca de la Estrategia Global para la Conservación de las Plantas.

Es así, trabajando juntos, compartiendo experiencia y habilidades en interpretación, como los jardines botánicos pueden proponer en las agendas de las instituciones el problema de la conservación de las plantas de una manera más concertada y convincente que individualmente. Precisamente este año el Día de la Conservación de las Plantas (su acrónimo en inglés PCD) nos brinda esa oportunidad: jardines, zoológicos e instituciones de todo el mundo utilizarán la fecha del 18 de Mayo para celebrar las plantas y aumentar la conciencia de su conservación. Con el apoyo de la firma Boeing, el BGCI reajusta la web del PCD y colabora con jardines de Australia, China, Rusia, Reino Unido y EEUU en la puesta en marcha de una serie de animados programas educativos y de interpretación. ¿Por qué no participa? Visite la web [www.plantconservationday.org](http://www.plantconservationday.org) donde encontrará ideas y recursos.

# Interpretation master planning: creating holistic narrative experiences

**Summary** Interpretative master planning has been around in a professional form for several decades. However, much of the text and approaches that have been developed are based on the interpretation of heritage sites. While this work can be of use, botanic gardens are different and require a different approach. By ensuring that adequate thought is given to the visitor experience, being clear about the top-level outcomes, developing the interpretation plan in a holistic manner with the other elements of the masterplan, and by telling strong stories through layered media, a botanic garden's interpretation can become an effective way of delivering core aims, building a rapport with visitors and effecting changes in behaviour.



Left: Messages of sustainability are infused throughout The Eden Project (The Eden Project)

However, terms used to describe the process of planning interpretation are less well defined, such as 'masterplan' and 'interpretation masterplan', sometimes also referred to as an 'educational masterplan'.

## Introduction

Botanic gardens have been interpreting their collections since their inception. That is to say that plants in botanical collections have always had information associated with them that institutions have wanted to impart to users of the collections. Just think of the European physic gardens set up to teach aspiring doctors the medicinal properties of plants or the Victorian systematic order beds laid out to teach botany. Indeed, it could be argued that growing plants with the aim of using them to inform visitors, be they specialist academics or curious members of the general public, is one of the key differences that sets

botanical collections apart from normal gardens. However, even with this long history, the quality of interpretation found in botanic gardens has only recently started to improve; partly because it is only recently that there has been a commonplace understanding that this is an activity that needs to be discussed, studied and planned for.

### Where do you start?

Before we address this question it is best to define a few terms. 'Interpretation' is now widely understood as broadly being the process of communicating information in museums, heritage centres etc.

For the purpose of this article, a masterplan can be thought of as a guidebook, a point of reference, that can be used when one looks up from immersion in the minutia of running a busy garden and wonders 'Are we still heading in the right direction?' or when one is setting out to create a new botanic garden. Within such a document one would expect to find elements that address, among others, the business needs of the garden, its conservation aims, landscaping and educational purposes. Given the scope of these topics, the masterplan cannot be a detailed prescription and indeed if it were, with the need to adapt and evolve over time, it would probably be obsolete before fully implemented.



Right: The Minnesota Landscape Arboretum, USA, creates memorable and meaningful experiences for children and families (Sandy Tanck, Minnesota Landscape Arboretum, USA)



An interpretation masterplan is the section within the larger masterplan that details the messages the garden wants to impart and the ways that this might be achieved. Wrongly, they are often spoken of as documents that stand alone from the other aspects of the garden's masterplan. The aim of this article is to show that not only does having an interpretation masterplan integrated with the overall masterplan benefit the delivery of education but it will also benefit the garden by improving the visitor experience.

Hundreds of years ago, mediaeval monks were laying out their sanatorium gardens in the form of a human body as an *aide memoir*. Herbs were planted at the points on the body that related to their area of treatment. Despite this, interpretation as a subject or profession only began to become formalised around the 1950s. In 1957, Freeman Tilden, who worked for the United States National Park Service, wrote 'Interpreting Our Heritage', one of the first texts on interpretation. Since then, the principles that Tilden laid out have formed the backbone for most of the interpretation master planning of heritage sites.

Using Tilden's approach, a typical interpretation master planning process for a heritage site or national park may consist of conducting an inventory of objects and locations, deciding on the themes to be interpreted, reviewing the budget and management constraints before delivering a plan that outlines the most favourable method of interpretation for each object or location.

Before we apply this process to botanic gardens it is worth asking ourselves whether they are similar enough to national parks and other heritage sites to use the same approach. Whilst both are usually outdoor spaces with plants growing within them, there are some key differences. Heritage sites are usually a natural feature, landscape or a human-made structure of antiquity. As such, they invariably have a limited number of features to interpret. Those features they do have are usually static and the main aim of the interpretation is to tell the visitor about the location. Botanic gardens, on the other hand, have large numbers of individual specimens, displayed in a human-made environment with the aim of imparting specific, and sometimes complex, ideas. With the increased concentration on conservation, many botanic gardens take this further and want to influence the behaviour of their visitors in a way that supports plant conservation and sustainability.

#### *Planning for interpretation in botanic gardens*

Whether you have an existing garden with an extensive collection or an area of land awaiting development, it is important to carry out an inventory of the site and collection. This will help you think about the relationships between these objects, the locations and the stories they can be used to tell. This discussion should quickly lead to questions such as "What are we trying to achieve?" and "What is our purpose?"

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#### *Be clear about the top-level outcomes*

Is your garden interested in raising awareness of a particular habitat or the flora of a particular area? Does it have a mission to encourage a change in people's behaviour to protect plants? Or perhaps an aim to enhance people's wellbeing? Without a clear understanding of the desired outcomes, an interpretation masterplan cannot be devised that leads towards them. The mission of Missouri Botanical Garden, USA, for example 'To discover and share knowledge about plants and their environment, in order to preserve and enrich life' can be seen to underpin the whole of the garden's interpretation.

#### *Be holistic*

It was mentioned earlier in this article that many interpretation masterplans are developed separately from and without consideration of the overall masterplan for the garden. This is not only likely to have operational implications for the delivery of interpretation on-site but a lack of joined-up thinking will also mean that opportunities are being missed to infuse your garden with your messages. The Eden Project (Cornwall, UK) is an example of an institute that carries its messages through everything it does. One illustration of this is the sachets of sugar provided in the restaurant which carry interpretation about the origin of sugar. There are a range of reasons why communicating through catering does not happen in all botanic gardens (including a concern about the unit cost of sugar sachets!), but the point is that the more channels you can find to communicate your messages through, the more effective your interpretation will be.

#### *Think experience*

Closely linked to an holistic approach is consideration of the visitor experience during the interpretation master planning process. We live in an age driven by what Pine and Gilmore (1998) have termed the 'experience economy'. Whereas there was a time when people spent money on food for the purpose of nourishment many of us now pay extra for the experience that accompanies that food. For example, one could



make a cup of coffee at home but many prefer to pay more for having the experience of drinking coffee out, with the added experience of choice, service and social statement that accompanies it. Pine & Gilmore (1998) give the following definition of experience.

*'An experience occurs when a company intentionally uses services as the stage, and goods as props, to engage individual customers in a way that creates a memorable event.'*

Botanic gardens are a part of this economy. Nature tourism is on the increase and as such gardens offer excellent locations for social outings. Having said that, this is not such a new phenomenon, one hundred years ago in 1908, W. J. Bean, the then Director of the Royal Botanic Gardens, Kew, noted that "to nine tenths of the people who visit Kew...it is simply a beautiful garden - a place in which to spend a few pleasant hours". The purpose of a visit to most large botanic gardens is to have a social or recreational experience. Whether this experience occurs in a botanic garden or a museum is a secondary consideration decided by the prospect of the overall experience on offer. Further evidence of this is the ranking of botanic gardens, zoos and museums as 'visitor attractions' in the same category as theme parks and other tourist attractions. It follows therefore that comparable experience needs to be offered by botanic gardens if visitors are to continue to choose them over the other destinations in the list.

To compete successfully in this market for the visitors' time, and thus the opportunity to influence them, botanic gardens must find ways to engage visitors with memorable and meaningful events. Good visitor experiences should consist of the three elements of unexpectedness, social interaction and sensory stimulation. For example, the Minnesota Landscape Arboretum, USA, created a nature-play space 'Under the Oak' where children came together to build simple forts, crawl through a willow tunnel and decorate a child-sized butterfly's wings. If possible, a fourth element, something that can be taken away to prolong the experience, should



Left: Experience in nature helps stimulate emotional development. The urge to build is particularly strong between the ages of 8-11. (Sandy Tanck, Minnesota Landscape Arboretum, USA)

also be included as in the Green Workshops run at the Conservatory and Botanic Garden of the City of Geneva, Switzerland, where children constructed bird boxes, among other activities. Designing and delivering good visitor experiences requires stepping outside the traditional bounds of interpretation into the areas such as marketing, catering, event management, landscape design and architecture.

#### *Tell strong stories*

We have looked at the importance of creating an experience for the visitor but experiences don't necessarily communicate information. Information can be interesting but, as statements that stand alone, it can be difficult to put them into context or derive a greater understanding from them. This returns us to Tilden's principles, in particular the first two, which state:

1. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.
2. Information, as such, is not interpretation. Interpretation is revelation based on information. But they are entirely different things. However, all interpretation includes information.

We are all familiar with how powerful storytelling can be; as children we became immersed in the alternative realities created by books, films and

theatre. In adulthood, even though we are better at distinguishing reality, stories can be equally magical. A good storyteller, be they using the written word, voice or drama, can manipulate our emotions and in so doing strengthen the effect that story has on us. Stories crafted to deliver information can harness this emotive power and provide a structure which the visitor can use to organise their existing knowledge and the new knowledge they are gaining.

The number of plant species in a botanic garden means that there is an unlimited supply of stories. For each plant in the collection it will be possible to relay far more stories than there is space for. If you want convincing of this, it is worth reading Conway's article on 'How to exhibit a bullfrog' (1973). It was written with zoo directors and designers in mind but nevertheless demonstrates that good exhibitions rely on the quality of the stories told not the number or rarity of specimens. The narrative style within which it is written also reinforces the point.

Continuing with Pine and Gilmore's theatrical analogy, one can think of each specimen as a character with a whole lifetime's worth of stories. Some of these stories will be individual to them while others will be shared by other specimens in the collection. The job of the interpretation plan is to decide what overall story the visitor will be presented with and to orchestrate how each of the characters will tell the parts of their stories that are most relevant.

Right: Children constructing bird boxes at a green workshop run at the Conservatory and Botanic Garden of the City of Geneva, Switzerland (Conservatory and Botanic Garden of the City of Geneva, Switzerland)



### Layer media

We all have preferences for how we like to receive information. Some people like to read text, others to listen to an explanation or watch a demonstration. Therefore if we only use one medium to deliver a message you can be sure that for a lot of the visitors this will not be their favoured medium. Guided tours are one of the most frequently used media for interpretation in botanic gardens (>90% of botanic gardens in the UK); however, operational limitations mean that only a small percentage (<1.5% in UK) of visitors will ever experience them. Interpretation boards are also a popular choice but can exclude whole sections of visitors (Furse-Roberts 2005). It is therefore important to ensure that each interpretational element is delivered through a variety of media. An example of this is the Big Answers to Big Questions programme run by the Botanic Gardens Trust, Sydney in 2006 where over 2,000,000 people were reached through debate, web and radio.

### Conclusion

It is important that the interpretation plan is thought of in conjunction with and tied into the other elements of the masterplan. When writing the interpretation plan ensure that adequate thought has been given to the visitor experience. Be clear about the top level outcomes. Be holistic. Think experience. Tell strong stories and layer media.

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### Résumé

La planification générale de l'interprétation s'opère sous forme professionnelle depuis plusieurs décennies. Toutefois, la plupart des écrits et des stratégies développés se réfèrent à l'interprétation de sites du patrimoine. Bien que ce travail puisse être utile, les jardins botaniques sont différents et nécessitent donc une approche différente. Par l'assurance qu'une réflexion appropriée soit prise en compte dans l'expérience du public, qui soit claire par rapport aux résultats

finaux, tout en concevant le plan d'interprétation de manière globale incluant les autres éléments du plan directeur, et par la proposition de messages puissants par le biais de méthodes multicouches, le système d'interprétation d'un jardin botanique peut devenir un outil efficace pour atteindre des objectifs centraux, en établissant un bon rapport avec son public et en mettant en place des changements de comportement.

### Resumen

Se han utilizado los planes maestros de interpretación desde hace algunas décadas. Sin embargo, mucho del texto y de las propuestas que se han desarrollado se basan en experiencias de interpretación del patrimonio. Si bien estas experiencias pueden ser útiles, los jardines botánicos son diferentes y requieren de una diferente aproximación. Asegurando un adecuado desarrollo del pensamiento en la experiencia del visitante, teniendo claridad en los resultados que esperamos, desarrollando el plan interpretativo de forma holística con los otros elementos del plan maestro y participando seriamente y a profundidad en los medios de comunicación, el trabajo interpretativo de los jardines botánicos puede convertirse en una forma efectiva de transmitir los mensajes centrales construyendo un rapport entre sus visitantes y cambios efectivos en sus conductas.

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# Interpreting nature: connecting to visitor understandings

## Introduction

Botanic gardens are increasingly focusing educational initiatives on the complex topics of global climate change and sustainability (Forrest, 2008; Qwathekana and Midgley, 2008; Romano, 2008). We expect visitors to learn much as they experience gardens, but how much and what type



of learning might we reasonably expect (Balis, 1999; Rennie & Johnston, 2004)? The goal of learning and experiencing is to encourage a change in people's perceptions and ultimately behaviour and this involves using interpretation. But the term interpretation raises a critical question for our consideration — Who is doing the interpreting . . . scientists, garden educators, or visitors? This question challenges us to reflect on our views of learning.

museums, libraries, community-based organisations and the Internet (Falk & Dierking, 2000). Considering two different views of learning can help us redefine garden interpretation. Debates about the transmission and contextual models of learning have a long history and are far from new. In the transmission model, learners are viewed as passive recipients of pre-interpreted messages and learning is framed as a cognitive experience; the primary concern is whether or not the

**Summary** Providing interpretation in a botanic garden offers us a challenge. Not only do we want to nurture visitors' unique interpretations, we also want them to explore issues in a thoughtful way. In this article I compare two views of learning — the transmission model and the contextual model. To demonstrate that simply providing information limits our view of teaching and learning, I consider four different ways that visitors understood and interpreted nature within the W.W. Seymour Botanical Conservatory in Tacoma, Washington, USA. Too often we focus on whether or not visitors understand a particular interpretative message rather than how visitors create their own interpretations from these natural settings. To help this process and foster learning in botanic gardens, I offer some questions for consideration.

## Two views of learning

Botanic gardens are but one part of a large educational infrastructure including families, schools, print and broadcast media,

visitor received a particular message (Freire, 1970; Oakes & Lipton, 1999). This view of learning suggests that gardens should work thoughtfully to define and fully transmit coherent educational messages or enduring understandings (Wiggins and McTighe, 1997). In contrast, in the contextual model, learners are viewed as active meaning-makers, or interpreters; learning is framed as a complex context-dependent social process where the primary concern is whether or not visitors are forming connections through their previous and subsequent experiences (Dewey, 1938; Falk & Dierking, 2000). This view of learning suggests that visitors generate their own highly personalised meanings from the same exhibition experience (Diamond, 1999; Falk & Dierking, 2000; Marstine, 2006; Sandell, 2007) and that gardens should implement strategies

Left: Plant sign at National Botanic Garden, Washington, D.C., focusing on the importance of conserving natural resources and encouraging visitors to view 'Nature in peril' (Holly Senn)



	Transmission Model Behavioral Paradigm	Contextual Model Constructivist Paradigm
<b>Mode of Learning</b>	Absorption Passive Individuals	Socially construct meaning Active Groups
<b>Learners</b>	Cognitive experience	Cognitive, Physical
<b>Learning</b>	Fixed	Emotional Experience Context Dependent
<b>Content</b>	Pre-interpreted messages	Personalised meanings
<b>Documenting Learning</b>	Did visitors get the intended message? Looking for knowledge of pre-determined outcomes	Did visitors make connections to life experiences? Looking for change in awareness, enjoyment, attitudes, interest, opinion, or understanding

*pollinator has a mate that looks like the bloom? I'd love to read more about the evolution of plants here with exotic features and know how/why the varieties arise. Details about leaf and petal patterns and numbers per bloom would be interesting."*

*"I saw a pattern. In South America, Spanish moss grows on large branches and orchids grow out of this medium. In the same way, big leaf maples provide a structure for moss and ferns. Everywhere living things cooperate, sharing space, nutrients, etc."*

Taxonomic displays, either spaces devoted to different types of plants (e.g., palm house, cactus house) or plants grouped by genus and meticulously labeled by scientific name, are one interpretative strategy that gardens, such as the Volunteer Park Conservatory in Seattle, Washington, USA use to present plants as a source of scientific knowledge. Alternatively, some gardens, like the New York Botanical Garden, emphasise the processes of science. Interpretative panels include close observation reminders (e.g., Did you notice? or Look closer), questions that scientists investigate (e.g., Why did certain physical traits evolve?), or highlight field research. At Kew's Millennium Seed Bank, scientists at work are on display for visitors to observe.

Framing nature as a source of scientific knowledge emphasises that collecting, sorting, and organising is a form of inquiry; studying objects generates

that invite visitor interaction, response, and interpretations (Sandell, 2007, Shakespear, 2008).

Examining visitor interpretations allows us to consider the complex and highly personal nature of learning. To better understand interpretation, for eight months in 2008 I conducted a study of visitor engagement at the W.W. Seymour Botanical Conservatory in Tacoma, Washington, USA (Ryken, 2008) and visited botanic gardens in Canada, the United Kingdom, and the United States. What do visitors tell us? Studies of the attitudes of botanic garden visitors indicate that they rate the restorative features of the garden setting as more important than learning about plants or conservation issues (Ballantyne, *et al.*, 2007; Connell, 2004). Visitors to the Seymour conservatory identified three primary reasons for visiting: to look at flower displays, to be in a garden setting, and to be in a peaceful setting. Interestingly, reasons ranked amongst the lowest were to learn about plants and to learn about the environment.

While the majority of visitors valued being immersed in a beautiful setting, their written reflections can be further organised into four different interpretations of nature. Looking at the range of visitors' interpretations in relation to garden interpretation challenges us to reflect on our views of

teaching and learning, as well as how we represent nature to visitors.

#### Four interpretations of nature

Conservatory visitors interpreted the same setting very differently, 1) seeing nature as source of scientific knowledge, 2) as creation, 3) as a human resource, 4) or in peril. Gardens also use one or more of these interpretations when displaying nature, despite the fact that these perspectives may be in tension — for example, seeing nature as a source of scientific knowledge versus seeing nature as creation. Below I share representative visitor reflections, give examples of how each interpretation was addressed in botanic gardens I visited, and highlight tensions.

##### *Nature as a source of scientific knowledge*

Some conservatory visitors saw nature as a source of scientific knowledge, often emphasising the scientific search for patterns in the natural world.

*"By displaying examples that reflect what I've learned in class, my understanding of the natural world is reinforced. I'm curious about the bloom of the plant that resembles a 'large bug'. What natural*



Right: Piece of interpretation at National Botanic Garden, Washington, D.C. encouraging visitors to view 'Nature as a human resource' (Holly Senn)

knowledge (Arnold, 2006). Classifying is not a neutral activity as all classification schemes raise questions about the fundamental unit of classification (Ritvo, 1997). The scientific view of nature is in tension with viewing nature as creation.

#### Nature as creation

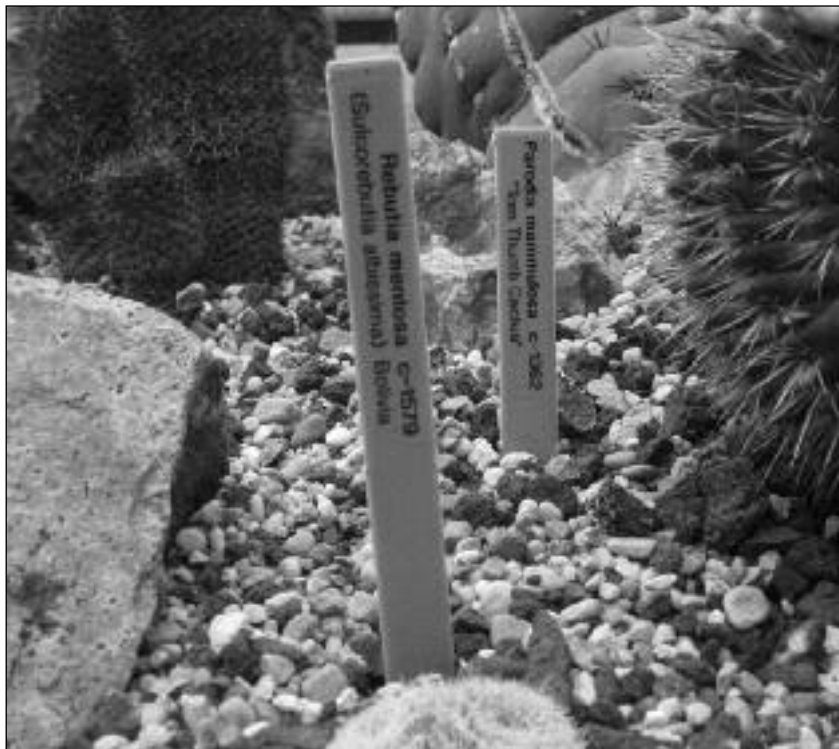
More than 10% of conservatory visitors focused on nature as spiritual and as evidence of God's creation.

*"I do not really understand a lot about the natural world, but I love the beautiful plants and the fish. I think that humans were meant to approach the beauty of flowers, plants, and animals and to live in harmony with these things and to love them. This conservatory, to me, reflects the boundless love of God and his love in His creation. I glorify God for creating this beauty."*

*"I saw plants I didn't know existed and found them fascinating — I most appreciate and actually long for a chance to be in a natural beauty setting. I find nature very spiritual."*

Describing nature as evidence of creation is not typically explicitly addressed in botanic garden interpretative displays; in all of my garden visits I discovered only two references to this perspective. A display at the Chelsea Physic Garden in London included the quote, 'God created and Linnaeus ordered'. And an A-Z orchid display at the National Botanic Garden in Washington D.C. included the word 'spiritual' for the letter 's' and described a Maori orchid creation legend. Most gardens' displays emphasise evolution. For example, The Royal Botanic Gardens, Kew's Evolution House presents a visual evolutionary timeline and the National Botanic Garden in Washington, D.C. displays an evolutionary tree which shows phylogenetic relationships.

Reverence for life is the common ground that can support reaching across the religion and science divide (Wilson, 2006). For some visitors botanic gardens are the re-creation of Paradise and a physical bible that makes God's purposeful design visible



Left: Plant labels at Volunteer Park Conservatory, Seattle, Washington encouraging visitors to view 'Nature as a source of scientific knowledge' (Holly Senn)

(Cunningham, 1996; Prest, 1981). Visitor worldviews are unlikely to change easily as they are the result of complex interactions between religious belief, scientific knowledge, values, and common sense reasoning (Poling and Evans, 2004; Reading, 2005).

#### Nature as human resource

Other conservatory visitors described nature as a human resource, often emphasising their own use of plants or critiquing the human manipulation of plants.

*"As a tea drinker, I thought about where a beverage I enjoy begins its life. It was very interesting to learn about tea varieties and where they grow — to me something about the economy as well as the natural world and how they impact each other. Also brought in the cultural role of the plant in the description of different ways of serving tea."*

*"Plant modification and the fact that you must be breeding the flowers to be BIG. BIGGER is NOT better! Why are all the flowers so BIG? It's not natural."*

Many gardens reinforce the interpretation of plants as consumables for humans' use. For example, the National Botanic Garden in

Washington, D.C. displays how plants are used as food, medicine, ceremonial objects, and building material. The medicinal uses of plants are also emphasised at the Chelsea Physic Garden. Human manipulation of plants is made clearly visible at Brooklyn Botanic Garden's bonsai museum.

Plants were, and continue to be, central to the political and economic expansion of nations and we should make transparent which plants were transported across the globe (e.g., cinchona and rubber trees) and which were not (e.g., abortifacients) (Schiebinger, 2004). Presenting nature as a shared resource — there for the taking to suit human needs and purposes — is in tension with the view that nature is in peril.

#### Nature in peril

Another set of conservatory visitors saw nature as threatened, focusing on the importance of conserving natural resources and balance in ecosystems.

*"I believe that understanding our world and nature's powers over the weather and the natural balance of the ecosystem is more than important with the threat of losing it due to our lack of gratefulness for its beauty."*

"I thought about how all plants in the conservatory are without question dependent on clean air, water, moderate to humid temperatures and ultimate harmony between all species for all to survive and prosper. The balance between man and nature and at times how delicate it is. How plants affect not only man but the rest of the planet and the ultimate balance and harmony between man and Earth."

Right: Quote displayed at Chelsea Physic Garden, London which encourages visitors to view 'Nature as creation' (Holly Senn)

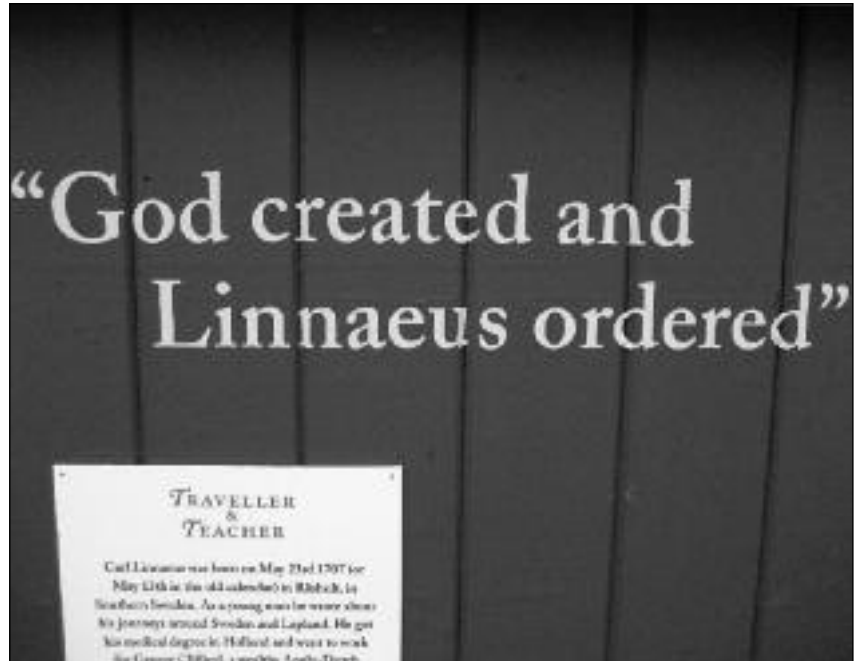
Botanic gardens are increasingly emphasising the interpretation of nature in peril. The Toronto Botanical Garden's focus on urban gardening, San Francisco's Conservatory of Flowers display of Goldman Environmental Prize winners, and displays about habitat destruction or global climate change at the New York Botanical Garden and the Royal Botanic gardens, Kew, are examples of this interpretation of nature.

From this perspective nature is viewed as compromised by human activity, such as habitat destruction and overharvesting, leading to loss of biodiversity and extinction of species (Wilson, 2004). While often viewed as a current issue, concern for human impact on the environment has a long tradition; for example, it is documented in classical Greek writings and systematic forest conservation efforts began as early as 1768 on the island of Mauritius (Grove, 1996).

### Questions to consider

Botanic gardens "invite discussion on the role(s) of 'culture' in relation to 'nature' and can act as a metaphor for the complex relationships that humanity has with the environment" (Sanders, 2007). They are important sites for learning precisely because of their potential to help visitors consider their multiple and conflicting relationships to nature. As the contextual model of learning suggests, visitors do indeed form highly personal meanings in relation to the same setting; simply providing information is a limited way to engage visitors. Below are questions to consider as we work to foster learning in botanic gardens.

- What are the pros and cons of providing interpretative information versus posing visitor reflection questions?



- How might we invite visitors to share their thinking?
- What types of connections to nature do we hope to foster?
- How might we make visible humans' contradictory relationships to nature?

Engaging questions such as these can help us improve our work. Re-examining our views of learning and nature in relation to visitor worldviews suggests that we think critically about both the type and amount of learning we expect from a garden visit and our role in supporting that learning.

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### Résumé

La mise en place d'un système d'interprétation dans un jardin botanique présente un défi. Notre but est non seulement d'étoffer les interprétations uniques du public, mais également de l'inciter à envisager certains sujets plus en profondeur. Dans cet article, je compare deux conceptions de l'apprentissage : le modèle de la transmission et le modèle contextuel. Afin d'illustrer le fait qu'un simple apport d'informations limite notre conception de l'enseignement et de l'apprentissage, j'examine quatre manières différentes de comprendre et d'interpréter la nature, rapportées par des visiteurs, au W.W. Seymour Botanical Conservatory de Tacoma, Washington, aux Etats-Unis. Trop souvent, nous nous attachons à ce que le public comprenne ou non un message interprétatif spécifique, plutôt qu'à sa manière de développer ses propres interprétations à partir de ces cadres naturels. Afin de contribuer à ce processus et de favoriser

l'apprentissage dans les jardins botaniques, je propose une série de questions à étudier.

### Resumen

Aportar actividades interpretativas en un jardín botánico es un reto. No solo porque le queremos aportar al visitante materiales interpretativos únicos, sino porque también esperamos que piensen y exploren por su cuenta. En este artículo comparo dos formas de aprendizaje: el modelo de transmisión y el modelo contextual. Para demostrar que la simple transmisión de información limita nuestra forma de enseñar y aprender, presento cuatro maneras en las que los visitantes entienden e interpretan la naturaleza en el Conservatorio Botánico W.W. Seymour en Tacoma, Washington, Estados Unidos. Con frecuencia nos centramos en si los visitantes entienden o no un determinado mensaje interpretativo, en vez de centrarnos en cómo los visitantes elaboran sus propias interpretaciones de estos espacios naturales. Para contribuir a este proceso, y promover el aprendizaje en los jardines botánicos, presento algunos aspectos a considerar.

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To view vodcasts of field visits see [www.youtube.com/conservatory2](http://www.youtube.com/conservatory2)

# Interpretación para una visita inolvidable

**Resumen** El Jardín Botánico José Celestino Mutis está ubicado en Bogotá D.C. capital de Colombia, fue fundado por el sacerdote y científico colombiano Enrique Pérez Arbeláez en 1955. Es el jardín botánico más importante de Colombia y recibe más de 300.000 visitantes por año. Cuenta con planes, programas, proyectos y políticas educativas estructuradas que responden a los intereses y necesidades de distintos tipos de público. Esto representa una oferta de servicios pedagógicos que ofrece a los visitantes experiencias de aprendizaje que promueven la construcción de conocimiento, el desarrollo de actitudes y de habilidades relacionadas con el cuidado y uso sostenible de las plantas, su ecología y el ambiente. Este artículo describe los programas de interpretación desarrollados en el Jardín, y destaca la teoría y los principios que orientan innovadoras estrategias de aprendizaje activo para una visita inolvidable.

los educadores del Jardín Botánico José Celestino Mutis quienes, a través de la Subdirección Educativa y Cultural, desarrollan procesos de educación ambiental para promover la construcción de conocimientos, hábitos y actitudes en torno a situaciones ambientales asociadas al patrimonio natural de la Ciudad, con el fin de conservar y hacer uso sostenible de la biodiversidad. Estos procesos se organizan en cuatro líneas de acción: 1) Procesos de construcción de pensamiento ambiental y desarrollo de competencias científicas, 2) Procesos para la socialización del conocimiento, 3) Procesos de inclusión en dinámicas sociales y 4) Procesos de innovación e investigación pedagógica para la gestión ambiental.

A continuación describo la Línea de Acción responsable de la atención de visitantes en el Jardín Botánico: Procesos de construcción de pensamiento ambiental y desarrollo de competencias científicas. Esta línea ofrece experiencias de aprendizaje que promueven la construcción de conocimiento y el desarrollo de actitudes y habilidades relacionadas con el cuidado y uso sostenible de las plantas, su ecología y el ambiente, para: a) Aportar elementos que permitan emprender acciones de rescate, restauración, y valoración de los bienes ambientales que constituyen



## Contexto

La educación que realizan los jardines botánicos, centros científicos y de ciencia, planetarios, acuarios, reservas y parques naturales, zoológicos, museos de ciencia o historia natural, bioparques y todas aquellas instituciones designadas explícitamente como museos es considerada educación informal. Se define como aquella que procede de estímulos educativos generados en nuestro ambiente sociocultural y biofísico, no encuadrados en el sistema educativo formal (Sánchez, 2004, ICOM, 1997 & MEN, 2004. En Sierra, 2006). En general estas instituciones cuentan con planes, programas, proyectos y políticas educativas que responden a los intereses y necesidades de distintos tipos de público. Lo anterior produce

una oferta de servicios que garantiza la accesibilidad de todas las personas al Jardín, de tal forma que se cumplan los principios de inclusión social que buscan generar compromiso e impacto en el entorno social y cultural de Bogotá D.C.

Comprender que los jardines botánicos deben contar con programas enfocados a las necesidades e intereses de todas las personas, se ha convertido en un verdadero reto para

Derecho: Los programas escolares promueven aprendizaje natural y la construcción y el desarrollo de habilidades y actitudes para la conservación de la biodiversidad (Paola Sierra Manrique)

el patrimonio natural y b) Apoyar los procesos de enseñanza - aprendizaje de las ciencias naturales y sociales.

En el marco de esta línea fueron concebidos programas de interpretación ambiental enfocados en el desarrollo de competencias científicas: las competencias son los conocimientos, las actitudes y las habilidades relacionadas con las ciencias que pueden ser construidos por las personas de tal forma que cuenten con herramientas que les permitan intervenir de manera responsable en el cuidado del ambiente y el desarrollo sustentable (MEN, 2005).

Estos programas fueron diseñados a partir de revisiones bibliográficas que incluyeron investigaciones, teorías de aprendizaje, conceptos, experiencias pedagógica, estudios de caso en áreas relacionadas con educación e interpretación ambiental, enseñanza y aprendizaje de las ciencias, experiencias educativas en museos, centros de ciencias, zoológicos, jardines botánicos y ambientes naturales; así como el aporte de visitantes.

Las estrategias de enseñanza / aprendizaje que hacen parte de los programas fueron diseñadas, desarrolladas y evaluadas, durante tres años, por un equipo de profesionales con formación y experiencia en ciencia y pedagogía. En general los programas ofrecen experiencias de aprendizaje a través de 35 zonas ecológicas y colecciones que exhiben cerca de 2.300 especies de plantas (18.000 individuos) en casi 20 hectáreas.

### Características de los programas

- Principios de la teoría de aprendizaje constructivista.
- Experiencias directas y sensoriales con las colecciones botánicas, ambientes ecológicos y zonas educativas.
- Contenidos específicos para cada programa.
- Ambientes activos de aprendizaje que promueven el pensamiento crítico.
- Alfabetización de las ciencias para el desarrollo sostenible.



Izquierdo:  
Los programas tienen como objetivo formar líderes que aporten a la construcción de estrategias que permitan la solución de problemas ambientales locales (Paola Sierra Manrique)

- Desarrollo de competencias científicas y sociales.
- Comprensión del concepto de ambiente a partir de las situaciones y problemas ambientales contemporáneos.
- Acciones que propician la conciencia sobre los problemas relacionados con el mantenimiento de la diversidad biológica y el desarrollo sostenible, así como los propósitos culturales, de conservación y científicos de las colecciones botánicas.
- Productos turísticos competitivos con principios de sostenibilidad y programas dirigidos a la formación del equipo pedagógico, garantizando la calidad de los servicios.
- Flexibilidad en las actividades diseñadas, de acuerdo con las necesidades de los visitantes.
- Actividades bilingües.
- Promoción del Jardín Botánico como espacio ideal para el turismo ecológico, científico y cultural.

### Programas de atención especializados

- Interpretación Ambiental Para Colegios: Promueve el aprendizaje natural, la construcción de conocimiento en colaboración y el desarrollo de habilidades y actitudes relacionadas con las ciencias para la conservación de la biodiversidad. Apoya procesos de enseñanza y aprendizaje realizados desde el sistema educativo formal: preescolar, básica y secundaria. La oferta pedagógica se caracteriza por actividades atractivas y estimulantes diseñadas a la luz de los Estándares Nacionales de Ciencias Naturales y Sociales del Ministerio de Educación Nacional (2005).

Público preescolar: párvulos y transición

Actividad	Descripción	Contenidos
Caminatas guiadas	Promueven la observación utilizando los cinco sentidos. Utilizan las principales zonas de interés para la primera infancia. Duración: 1 hora.	<ul style="list-style-type: none"> <li>Colores y formas de la naturaleza.</li> <li>La música del bosque.</li> <li>Habitantes del planeta.</li> </ul>
Juegos al aire libre	Actividades al aire libre en diferentes zonas y colecciones. Duración: 2 horas.	
Manualidades botánicas	Promueven la creatividad de los niños. Se realizan en la zona de talleres: Espacio Infantil. Duración: 4 horas.	

Público escolar: Primero a quinto grado

Actividad	Descripción	Contenidos
Rutas de descubrimiento	Articuladas a los Estándares Nacionales de Competencias en Ciencias. Promueven experiencias de aprendizaje científico. Duración: 2 horas.	<ul style="list-style-type: none"> <li>Vida en el bosque.</li> <li>Hábitat: un lugar para vivir.</li> <li>Adaptación: formas maravillosas.</li> <li>Evolución: plantas prehistóricas.</li> <li>Plantas para la vida.</li> <li>Descubriendo los secretos de las plantas.</li> <li>Ecosistemas: ambientes naturales.</li> <li>Botánicos en acción.</li> <li>Planeta Tierra: problemas ambientales contemporáneos.</li> <li>Ambiente y sociedad: diversidad.</li> </ul>
Ecotalleres	Articulados con los Estándares Nacionales de Competencias en Ciencias. Promueven experiencias de aprendizaje que integran la ciencia y las expresiones artísticas. Duración: 4 horas.	





Arriba: Programas de interpretación ambiental enfocan en el desarrollo de competencias científicas (Paola Sierra Manrique)

2) Interpretación Ambiental Para Universidades: Promueve la construcción de conocimiento y el desarrollo de habilidades y actitudes relacionadas con la ciencia, el ambiente, la conservación de la biodiversidad y el desarrollo sostenible de la sociedad. El Programa no sólo sirve como apoyo a los procesos de educación realizados desde el sistema de educación superior, sino que además propone ampliar los contenidos para incrementar el número de visitantes universitarios y el área de disciplinas que visitan el Jardín.

3) Interpretación Ambiental Para Turistas: Genera elementos que permiten la apropiación de la oferta turística por parte de los visitantes, con el fin de que turistas nacionales, extranjeros y los mismos habitantes de la Ciudad, se conviertan también en demandantes de productos turísticos locales y regionales. El Programa ofrece productos turísticos sostenibles que propician experiencias de aprendizaje, culturales y recreativas a las personas que concurren al Jardín, de tal forma que se logre su posicionamiento como espacio ideal para el turismo científico y cultural sostenible y se incremente el número anual de visitantes.

4) Interpretación Ambiental Para Personas en Situación de Discapacidad: Busca romper las barreras de accesibilidad de tipo social, cultural y físicas que pueden estar presentes en las instituciones que ofrecen servicios y productos al público, logrando aumentar el número de personas en situación de discapacidad física, sensorial y cognitiva que ingresan anualmente al Jardín. El Programa se caracteriza por el diseño de actividades que tienen en

#### Público escolar: Sexto a once grado

Actividad	Descripción	Contenidos
Rutas de descubrimiento	Articuladas con los Estándares Nacionales de Competencias en Ciencias. Promueven experiencias de aprendizaje científico. Duración: 2 horas.	<ul style="list-style-type: none"> <li>Ciencia verde: investigación botánica.</li> <li>Biodiversidad colombiana.</li> <li>Plantas amenazadas: extinción</li> <li>Suelo</li> <li>Agua</li> </ul>
Talleres	Articulados con los Estándares Nacionales de Competencias en Ciencias. Promueven experiencias de aprendizaje que integran la ciencia y las expresiones artísticas. Duración: 4 horas.	<ul style="list-style-type: none"> <li>Vida sostenible: principios del desarrollo sostenible.</li> <li>Evolución.</li> <li>Conservación de la flora: el valor de la biodiversidad.</li> <li>Diversidad vegetal</li> <li>Plantas para la vida: usos y abusos.</li> <li>Planeta Tierra: problemas ambientales contemporáneos.</li> <li>Vida de planta.</li> <li>Un lugar para vivir: ecosistemas.</li> </ul>

#### Público universitario: educación superior

Actividad	Descripción	Contenidos
Rutas especializadas	Recorridos que promueven experiencias de aprendizaje relacionadas con el desarrollo de competencias científicas, más complejas. Contenidos especializados articulados con las necesidades y requerimientos de cada programa y área académica. Duración: dos horas.	<ul style="list-style-type: none"> <li>Relaciones ecológicas.</li> <li>Interpretación de un mundo vivo.</li> <li>Vida sostenible.</li> <li>Expedición Botánica.</li> </ul>
Práctica - taller	Actividades que promueven competencias científicas. Se articulan con las necesidades y requerimientos de cada programa y área académica de educación superior: universitaria, técnica o tecnológica. Duración: cuatro horas.	<ul style="list-style-type: none"> <li>El Jardín, sus colecciones y su responsabilidad en la conservación de la biodiversidad mundial.</li> <li>El Jardín Botánico como escenario de aprendizaje.</li> </ul>

#### Público turistas nacionales, extranjeros, familiar y comunidad organizada

Actividad	Descripción	Contenidos
Plan-Guía	Recorridos centrados en el conocimiento de las colecciones del Jardín Botánico, su historia, su papel en la conservación de las plantas y el cuidado del ambiente a la luz de las principales situaciones y problemas ambientales contemporáneos. Duración: una hora y treinta min. Taller que ofrece experiencias de	<ul style="list-style-type: none"> <li>El Jardín y sus colecciones.</li> <li>Las Plantas de Mutis</li> <li>Plantas Primitivas</li> <li>Mitos y Leyendas</li> <li>Curiosidades Botánicas</li> <li>Plantas Emblemáticas</li> <li>Plantas Viajeras</li> <li>Plantas Míticas</li> <li>Plantas para la Vida</li> </ul>
Plan-Explora	aprendizaje activas desarrollando temas de actualidad e interés para los visitantes y/o el desarrollo de actividades que promueven soluciones particulares a los problemas ambientales. Duración: cuatro horas.	<ul style="list-style-type: none"> <li>Plantas de Navidad</li> <li>Animales que habitan el Jardín</li> </ul>
Plan-Temporada	Se coordinan actividades especiales para los visitantes. Cada dos meses se tiene un tema de temporada distinto. Duración: dos horas. Especial para grupos organizados.	

cuenta el tipo de discapacidad presentada y la inversión en adecuaciones de espacio y mobiliario (sillas de ruedas, senderos, rampas, por ejemplo) que favorecen la movilidad de personas en situación de discapacidad y garantizan que el Jardín se un espacio inclusivo y de uso terapéutico.

De manera adicional a los programas de interpretación ambiental presentados anteriormente, el Jardín realiza innovadores programas educativos dirigidos a niños, jóvenes, adultos y tercera edad: 1) Vacaciones Científicas Infantiles; 2) Club Botánico de Ciencias Infantil y Juvenil; 3) Club de Caminantes y Amigos del Jardín; 4) Agenda Cultural (cursos, foros, exposiciones, ferias, campañas, eventos para celebrar fechas de importancia nacional, cultural y ambiental, entre otras actividades de divulgación científica); 5) Formación Docente en Gestión Ambiental; 6) Asesoría y acompañamiento a Proyectos Ambientales Escolares; 7) Escuelas de jardinería y agricultura urbana para adultos, 8) Asesorías técnicas en investigación botánica, arborización, jardinería o agricultura urbana y 9) Procesos de educación intercultural, que buscan recuperar el saber tradicional de las comunidades indígenas, afrodescendientes y campesinas. Estos programas tienen como objetivo formar líderes que aporten a la construcción de estrategias que permitan la solución de problemas ambientales locales.

En conclusión, el Jardín Botánico José Celestino Mutis es considerado uno de los principales atractivos de importancia científica, natural y cultural para los colombianos. Lo anterior ha sido producto de los grandes progresos realizados en los últimos 15 años, donde se han tenido en cuenta las necesidades de los visitantes y de la ciudadanía en general, logrando que el Jardín sea para todos

## Referencias

- ➔ Sánchez, C (2004), ICOM (1997) & MEN (2005) En Sierra, P. (2006). La evaluación de los aprendizajes en jardines botánicos, una mirada preliminar. Revista Museológica (16-17) 48-55. Bogotá: Universidad Nacional de Colombia.

Actividad	Descripción	Contenidos
Caminatas o paseos	Paseos o caminatas por las principales zonas, colecciones o ambientes del Jardín que han sido previamente establecidos, según la discapacidad que presentan, acompañados de actividades específicas. Duración: Una hora.	<ul style="list-style-type: none"> <li>• Descubriendo el Jardín a través de los sentidos.</li> <li>• Ambientes naturales.</li> <li>• Biodiversidad.</li> </ul>
Rutas de observación y descubrimiento	Experiencias activas basadas en el desarrollo de desempeños en el Jardín, según discapacidad. Duración: 2 horas	<ul style="list-style-type: none"> <li>• Cuidado y manejo de la huerta.</li> </ul>
Talleres	Actividades que les permiten a los participantes producir productos o realizar desempeños específicos. Involucra materiales, insumos, elementos y espacios especiales. Duración: Tres horas.	

**Público:** Personas de todas las edades en situación de discapacidad cognitiva, sensorial o física.

- ➔ Jardín Botánico José Celestino Mutis (2009) Formulación Proyecto 317: Procesos de Educación y Cultural para la Conservación y Uso Sostenible de la Biodiversidad del Distrito Capital, Subdirección Educativa y Cultural.
- ➔ Jardín Botánico José Celestino Mutis (2008) Programas de Educación e Interpretación Ambiental, Subdirección Educativa y Cultural
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## Summary

The José Celestino Mutis Botanic Garden was founded by the priest and Colombian scientist Enrique Pérez Arbeláez in 1955. It is considered the most important botanic garden in Colombia and receives more than 300,000 visitors each year. All programmes and projects offered by the garden are structured specifically to respond to the interests and needs of distinct audiences. Visitors are given learning experiences that promote the construction of knowledge and the development of attitudes and behaviours in relation to the care and sustainable use of plants, their ecology and the environment. This article presents the interpretation programmes developed in the José Celestino Mutis Botanic Garden and emphasises the theory and the principles that result in innovative active learning strategies for an unforgettable visit.

## Résumé

Le Jardin botanique José Celestino Mutis a été créé par le prêtre et scientifique colombien Enrique Pérez Arbeláez en 1955. Il est considéré comme le plus important jardin botanique de Colombie et reçoit plus de 300 000 visiteurs chaque année. Tous les programmes et les projets proposés par le jardin sont structurés spécifiquement pour répondre aux intérêts et aux besoins de différents publics. Les expériences d'apprentissage proposées aux visiteurs permettent la construction de savoirs et le développement d'attitudes et de comportements favorables aux plantes, ainsi que liés à leur utilisation durable, leur écologie et l'environnement. Cet article traite des programmes d'interprétation développés au Jardin botanique José Celestino Mutis, et présente la théorie et les principes dont découle une stratégie d'apprentissage active et novatrice garantissant une visite inoubliable.

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Izquierdo: Las estrategias de enseñanza que hacen parte de los programas fueron diseñadas, desarrolladas y evaluadas, durante tres años, por un equipo de profesionales con formación y experiencia en ciencia y pedagogía. (Paola Sierra Manrique)

# Discovery carts: interpretation on wheels

In the summer of 2006, when educators at Brooklyn Botanic Garden learned that our young titan arum (*Amorphophallus titanum*) was developing a spectacular and very rare bloom, we knew that it would be an 'event' on the New York City scene. How could we inform the thousands of curious visitors who would flock to the garden about the fascinating biology of this 1.67 metre (5½ feet) blossom that smells like rotting flesh? Despite our large staff of educators, we did not have the capacity to redevelop dozens of pre-scheduled programs nor to build a major exhibit in two weeks' time. Our solution was to place one of our discovery carts outside the room where the arum was displayed in our conservatory. The cart was outfitted with an interactive felt board illustrating the arum's flower structure, a pollinator-blossom matching game, a selection of potted aroid relatives, and

Right: Discovery carts can serve as information stations where a knowledgeable person answers questions about plants and gardening (Marilyn Smith, Brooklyn Botanic Garden, USA)



**Summary** Discovery carts are mobile interpretation stations commonly used at informal learning centres across the U.S. Carts are relatively simple and inexpensive to develop. Once built, a cart may be easily changed to interpret new themes - a useful trait for gardens where the living plant collections are ever changing. A successful cart programme begins by planning the intended message, audience, and method of interpretation. The design and construction of a cart should also be informed by practical considerations such as available space and conditions where it will be used, ease of mobility, and adaptability to new uses in the future.

trained interpreters to help children and adults appreciate the significance of one of the world's most unusual plants.

In the past two decades, discovery carts - mobile interpretive education stations - have become a common feature at botanic gardens, museums, zoos, and nature centres across the U.S. Their rise in popularity should not be dismissed as a mere symptom of this country's love affair with anything on wheels. Rather, their adaptability, affordability and, yes, mobility make interpretive carts a winning solution to meet a wide range of educational goals. Discovery carts enable educators to interpret a special feature or event for their visitors by placing an engaging activity or attractive display right on the spot. In a garden setting, where indoor spaces for the public may be limited, carts can be an elegant yet inexpensive alternative to permanently installed exhibits. They are an easy way to introduce interpretation at a new site, forming a foundation from which other education programmes can grow. The ease with which carts can be

changed to tell a new story is another reason they're so well suited for botanic gardens (for example, 'What's in bloom this week?').

Since I've mentioned mobility several times, I should make it clear that discovery carts are not designed to be in motion during their use as interpretive stations. The wheels on a discovery cart make it convenient to move outside *during* visiting hours and bring indoors overnight, or to place near a special display and relocate once the season has passed. Discovery carts are most effectively used with a live educator to connect people passing by with information about plants, although they can serve as a self-guided interpretive station. Your visitors will appreciate the chance to handle and explore plants at a cart in ways you'd probably prohibit among your permanent displays.

Before you start pounding nails to build a new fleet of carts for your garden, you need to think through your specific goals for each cart. Developing a programme plan is the first step to



successfully launching any new education programme; all the more so, if it's going to require building a physical structure. What message or theme do you wish to convey to visitors? Will the cart be used exclusively in a particular section of your garden, or will it be free ranging on your grounds? Defining the audience may be the most important part of this exercise. What ages do you hope to serve? When do they visit the garden and what do they typically do while there? Does your target audience visit in small clusters of family and friends, or large organised groups from camps, schools, or garden clubs?

Next, you'll need to consider the type of experience you'd like your audience to have. Carts can serve as information stations where a knowledgeable person answers questions about plants and gardening. They can be set up with attractive, informative, yet static displays. They can be activity centres where children or adults explore plants using their five senses or scientific tools. These functions are closely tied to the physical construction of the cart, so it's crucial to start with a clear educational objective in mind, then build the cart to support it.

Another key element to include in a programme plan for carts is how they will be staffed. Who will create lessons and materials, manage supplies and arrange for maintenance when necessary? Who will interact with the visitors when the carts are in use? Many gardens successfully use volunteers as interpretive educators for their carts. This can be a tremendously satisfying assignment for volunteers who enjoy interacting with people and want to dive into a job where they'll learn a lot of new information. But someone on staff will need to train and schedule the volunteers and recruit new ones when needed. At Brooklyn Botanic Garden, highly trained teens in the third year of our Garden Apprentice Program are the workforce behind our discovery carts. Of course, the availability of staff or volunteers will need to align with the times your target audience is likely to visit.

Although flexibility is the hallmark of discovery carts, there are a few physical features that most interpretive carts have in common:

- one or more horizontal surfaces on which to display plants and objects or to serve as work surfaces for hands-on activities (these should suit the height of your audience).
- Secure, out of view storage for programme materials (often bundled in containers as topic modules).
- high quality wheels with brakes and a sturdy handle to push and steer.
- changeable signage to display your garden's logo and the theme of the cart.
- for outdoor carts, a weatherproof finish and a canopy or umbrella for shade or rain protection.
- an attractive design that complements your garden's aesthetic and is engaging to visitors.
- construction from durable materials that are easily cleaned and withstand the inevitable bumps and dings against doorframes and signposts (avoid protruding parts that will catch or break off).

Whether built by on-site staff, volunteers, or professional exhibit designers, discovery carts are usually custom-made for the needs of the organisation. Pitfalls to avoid are building overly large carts that are too heavy to move or too wide to fit through doorways, using materials that cannot be repaired by in-house maintainers, and designing storage spaces that are highly customised to very specific supplies. One caveat to keep in mind is that no matter how well you plan them, the carts you build today will likely be used in ways you never imagined over the course of their lifespan. So even after developing a programme plan, it's wise to construct carts with that unknown future in mind.

## Résumé

Les charriots découvertes sont des postes d'interprétation mobiles qui sont fréquemment utilisés dans les lieux de diffusion du savoir informel aux Etats-Unis. La création de ces charriots est relativement simple et peu coûteuse. Une fois construit, un charriot peut facilement être modifié en vue d'interpréter de nouveaux sujets, un aspect intéressant pour les jardins, dont les collections de plantes vivantes changent constamment. Pour qu'un programme intégrant des charriots se



déroule avec succès, il faut tout d'abord déterminer le message à transmettre, le type de public ciblé, et le mode d'interprétation. Il est également recommandé que le modèle et la structure du charriot soient basés sur des facteurs d'ordre pratique, tels que l'espace disponible et les conditions dans lesquels il sera utilisé, la possibilité de déplacement, et l'adaptabilité à de nouvelles utilisations futures.

## Resumen

Los carritos de descubrimiento son modalidades móviles de interpretación comúnmente utilizadas en centros de educación informal a lo largo de los Estados Unidos. Desarrollar estos carritos es relativamente sencillo y no muy costoso. Una vez construido, el carrito se puede fácilmente cambiar para interpretar nuevos temas – característica de gran utilidad para los jardines botánicos cuyas colecciones de plantas vivas están en constante cambio. Un programa exitoso empieza con la planeación del mensaje a transmitir, la audiencia y el método interpretativo. El diseño y construcción del carrito debe tomar en cuenta aspectos prácticos como el espacio disponible, en qué condiciones se utilizará, facilidad de movimiento, ya adaptabilidad para nuevos usos en el futuro.

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Above:  
 Discovery carts need to be constructed from durable materials, have wheels, brakes and a handle to push and steer, horizontal surfaces on which to display plants and out-of-view storage area for programme materials (Marilyn Smith, Brooklyn Botanic Garden, USA)

# Once upon a time.... the power of storytelling

**Summary** Educators in South African Botanic Gardens have a rich storytelling tradition to draw upon, based on existing indigenous knowledge systems. The links between biodiversity and cultural diversity and the various 'ways of knowing' provide interpretation practitioners with an opportunity to develop meaningful action-based programmes that inspire visitors to regard issues relating to threatened species from a more personal perspective. The aim is to encourage a deeper sense of place and care for one's local environment.

Storytelling is a powerful interpretive medium that deserves greater attention within environmental communication and botanic gardens education programmes. In this article we trace the development of ideas from a number of assistant educators at the Durban Botanic Gardens who explore the use of local narratives as a means to bring alive new meanings which might also be incorporated into local interpretation practice.

*Striking a huge baobab tree, He caused the animals to walk into the light of day for the first time. As each one appeared through a great rent in the tree's roots, He named it and gave it a place to live. Even though He was assisted by Mantis, who was a super-being and the Creator's helper, the animals took a long time to come out of the tree and be named. Last of all came man (San creation story, Greeves, 1988).*

As a place, Africa is a highly diverse continent: some 51 countries that are home to 810 million people who speak over 800 languages (Norris, 2007). A place that is rich in the tradition of storytelling. At a regional level, Southern Africa for example has a rich and unique plant flora comprising 30,000 species of flowering plants that make up 10% of the world's flora.

Along with this plant diversity is a rich cultural diversity, with many people in the region still relying on local plants for their subsistence and daily livelihood needs (Van Wyk and Gericke, 2000). The richness in plant diversity of Southern Africa makes for a potentially rich cultural landscape with indigenous knowledge systems that provide a storied landscape that can be unlocked during the process of meaningful interactive interpretation. However, O'Donoghue and Neluvhalani (2002), note the preference for 'indigenous knowing' rather than the commonly used concept of 'indigenous knowledge', the latter tending to treat knowledge as an 'objective commodity' that has been divorced from 'the socio-historical contexts of human meaning-making interaction'. Just as poetry is meant to be heard, oral traditions captured as knowledge

within the written text, tend to lose much of their oral testimony and interpretive flavour and meaning. Nigerian poet, Niyi Osundare claimed that "to utter is to alter" – his following poem is worth reading aloud:

*Grandma had a favourite saying  
She said it till she was old and grey  
She said it till  
She breathed her last*

*"That land is never at peace",  
She often stressed  
"Where a few have so much  
And the rest have so little"*

*There is enough corn  
For all the chickens of the world  
If only they peck with equal beaks  
And the fast tame their haste  
For the benefit of those left behind"*

Niyi Osundare

Story is a powerful and provocative medium that connects us intimately to our place in the world, and ultimately to our self identity. A story can be defined as an account of either a real or fictitious sequence of events that link together by means of plot, which is what makes the story move from beginning to end (Kock, 2003). From an interpretation perspective, stories serve to inform, enlighten and transform our place-relation in the

world. Story has the potential to transform the practice of interpretation in botanic gardens into a provocative and meaningful experience. Stories evoke a response in us. They inspire and develop a sense of curiosity about their subject matter and the person telling the story.

*'There is a wood, the canal, the river, and above the river the railway and the road. It's the first proper country that you get to as you come north out of Leeds, and going home on the train I pass the place quite often. Only these days I look. I've been passing the place for years without looking because I didn't know it was a place; that anything had happened there to make it a place that had something to do with me (English playwright, Alan Bennet from Untold Stories).'*

I am curious as to why Alan Bennet took all those years to realise the place significance of that bit of wood outside Leeds in the UK and what the turning point was for him to consider its possible place value. This process of place discovery has been linked to experiences of play in nature as a child, an experience that helps to form long-lasting attachments to significant green places and the potential for a greater sense of environmental care in later life. According to writer Steven Koch 'Childhood is, in every sense, the cradle of narrative'. Our knowledge of our

place in the world is story-bound. Story, according to Terry Tempest Williams 'is an affirmation of our ties to one another.' For Beck and Cable (2002) 'The story must somehow relate to something within the personality or experience of the visitor...Furthermore, information, as such, is not interpretation. The story offers revelation based upon information...the purpose of the interpretive story is to inspire, to provoke people to broaden their horizons.' Hence within a group one will encounter a range of stories or narratives that are rich learning resources for an interpretive programme.

### Interpretation and the value of story

'To assemble an effective story requires a great deal of research, thought, organisation, and care.' (Beck & Cable, 2002). Story also assists in developing a greater sense of ecological intelligence, helping us to develop a greater sense of environmental care. The place connection that story and storytelling uncovers is perhaps best captured within the concept of 'inner geography' as suggested by the late Irish poet, Seán Dunne:

*'There is a second type of geography which is harder to define. Each place contains its own version. It is an inner geography which is formed over a long period. It is a map shaped by memory, culture and*



*experience. This geography varies from person to person and evolves over generations. It includes songs, stories, jokes, poems, politics, works of art, sporting events, local loyalties, parochial enthusiasm – the entire paraphernalia of a particular place. It is more than that vague thing, the spirit of place. It is a sense of life lived in a particular area, and of the way that life is expressed.*

Above: Storytelling has the potential to bring interpretation alive (Durban Botanic Garden)



Educators have often disregarded the value of place and story. 'The importance of place in education has long been overlooked for a variety of reasons. One is that we miss the immediate and the mundane' (Orr, 2005).

*A broken connection with landscape and our history has been a compelling factor in the modern mindset in which detachment seems to dominate over collective and meaningful interaction. Jeremy Rifkin notes that in oral cultures closely tied to the land, most wisdom is stored in the mind, wisdom is cherished above all else, and that by their very nature these cultures are intimate and sensual. (Beck & Cable, 2002)*

As one educator and guide at the Durban Botanic Garden questioned 'As an interpretator, when am I 'storytelling' and when am I simply sharing

Left: The links between biodiversity and cultural diversity provide interpretation practitioners with an opportunity to develop action-based programmes (Durban Botanic Garden)



information in an interesting manner?’ Stories can be seen as ‘hooks’ to recall important concepts, grab attention or to link differing ideas, concepts of issues together into a meaningful whole. ‘Good storytelling can assist in gaining new insights and it certainly makes the sharing of information both more enjoyable and memorable’ (Bubb, 2009, *pers com*). Stories can be a great teaching tool. According to Frank Smith, the human brain is a narrative device that thrives on stories. We store knowledge in the form of stories which are easier to recall than long lists of facts (Smith, 1988). For author Gordon Wells of *The Meaning Makers*, stories provide an overt means to generate shared understanding amongst learners and educators.

Right: Story is a powerful and provocative medium that connects us intimately to our place in the world (Durban Botanic Garden)

*‘In the field of co-intelligence, stories are more than dramas people tell or read. Story, as a pattern, is a powerful way of organising and sharing individual experience and exploring and co-creating shared realities. It forms one of the underlying structures of reality, comprehensible and responsive to those who possess what we call narrative intelligence. Our psyches and cultures are filled with narrative fields of influence, or story fields, which shape the awareness and behavior of the individuals and collectives associated with them. (Atlee, 2009)*

### Uncovering ‘nature’ through story

In story we uncover the landscape. In sharing stories we share ourselves and meanings that we hold dear; meanings that are connected to our memories and subjective interpretation of the world around us. The sociologist, Raymond Williams, described ‘nature’ as perhaps the most complex word in the English language that is largely socially constructed and tied up with our norms and values and histories; commodified and layered, within land that is transformed into landscape. The Welsh poet David Whyte claims that ‘Though we profess to love nature, we like it packaged according to our human desires. We do not look too hard at the world for fear of what we will find there’. A recent review of the United Nation’s Decade of Education for Sustainable



Development (UNDESD) highlighted the need for creativity and critical thinking within environmental and sustainability education practice (Lotz-Sisitka, 2006). The role of story provides an evocative bridge for both critical thinking and creativity in a nature-culture divided world, one in which we might become more ecologically in tune. Ecological intelligence is not speech. It is an act. An act of weaving and unweaving our reflections of ourselves on Earth...’ (McCallum, 2005). We are currently faced with the challenge of moving beyond environmental awareness to action. The use of story as an interpretive aid helps to access the head, heart and hands within education programmes in botanic gardens. A garden is full of meaning and narrative with a history in its own right, with multiple layered personal and collective perspectives. Stories help us uncover this and engage in the richness of plant collections.

### Storytelling: an improvement on silence?

‘There is not a culture in the world that does not have myths, legends or fairytales explanations, no matter how fantastic, of the origins of the world an of life, of heroes and villains, of how we ought to behave and how not to’ (McCullum, 2005:23). The use of storytelling, while a powerful and

provocative medium for interpretation, needs to be handled sensitively with consideration for the group involved in the particular interpretation programme. Will the story be an improvement on the overall interpretive experience, will it capture attention? A good knowledge of the group should help to determine which stories are appropriate and the ideal manner in which they should be communicated. On a recent workshop guided programme with a group of guides from the Durban Botanic Garden it was noted that evocative descriptions of selected flagship indigenous species, one in particular being the Baobab tree, provided the possibility for sensory experiences that invited memories of previous encounters with the tree. This in turn led to stories that related to the common names of other indigenous plants. The following account is told by one of our guides, Thabo Zulu, about the meaning of a local indigenous tree Umzimbeet (*Milletia grandis*), often grown as a popular garden subject:

*Thabo: The first black South African television broadcaster who was known to give himself ‘big names’, also gave himself the name Umzimbeet, which is also the name for good quality sticks... but also a genuine strong person. There is no literal meaning; [the tree] is associated with strength and genuineness.*

The above workshoping of storied ideas about plant names and how they came to be is a rich resource for developing more in-depth interpretive stories that can be worked into thematic interpretive programmes where appropriate. Storytelling has the potential to bring interpretation alive for the visitor, to connect key biodiversity conservation issues to everyday life and assist in breaking down the nature-culture divide.

*'Stories that instruct, renew, and heal provide a vital nourishment to the psyche that cannot be obtained in any other way. Stories...provide all the vital instructions we need to live a useful, necessary, and unbounded life – a life of meaning, a life worth remembering.'* (Clarissa Pinkola Estes)

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*Thanks to the assistant educators of the Durban Botanic Gardens for their input and ideas on the use of story and storytelling as an interpretive method.*

## Résumé

Les animateurs des jardins botaniques d'Afrique du Sud peuvent recourir à une riche tradition du conte, s'appuyant sur des systèmes de savoirs autochtones existants. Les relations entre biodiversité et diversité culturelle et les différents « modes de savoir » donnent aux professionnels de l'interprétation l'occasion de mettre en place des programmes d'action marquants, qui cherchent à encourager le public à considérer les questions liées aux espèces menacées d'un point

de vue plus personnel. L'objectif est de stimuler un sens plus profond d'appartenance et d'attention vis-à-vis de son environnement local.

Le conte est un puissant moyen d'interprétation qui mérite d'être exploré davantage dans le domaine de la communication environnementale et les programmes éducatifs des jardins botaniques. Dans cet article, nous suivons le déploiement d'idées provenant de plusieurs animateurs adjoints du Jardin botanique de Durban, qui étudient l'utilisation de récits locaux pour raviver de nouveaux sens pouvant éventuellement aussi être intégrés dans les pratiques d'interprétations locales.

## Resumen

Los educadores de los Jardines Botánicos Sudafricanos tienen una importante tradición de cuenta cuentos centrada en los saberes indígenas. La relación entre la biodiversidad y la diversidad cultural, y las diversas "formas de saberes" proporcionan una oportunidad a los practicantes de la interpretación para desarrollar programas activos llenos de significado que inspiren a los visitantes a comprender aspectos relacionados con especies amenazadas desde una perspectiva más personal. La meta es promover tanto un sentido de pertenencia más profundo como un mayor cuidado por el ambiente local.

La actividad de cuenta cuentos es un medio interpretativo muy poderoso que merece una mayor atención en los programas de comunicación y educación ambiental de los jardines botánicos. En este artículo presentamos el desarrollo de ideas de varios de nuestros asistentes de educación del Jardín Botánico de Durban quienes exploran el uso de narraciones locales como un medio para darle vida a nuevos significados que puedan incorporarse en la práctica interpretativa local

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# Olympic exhibition: promoting the work of botanic gardens

**Summary** Over 180 million people attended the Olympic Games in Beijing last year. This international sporting event provided an extraordinary opportunity for botanic gardens to showcase their work to visitors from all over the world. The World Botanic Garden Exhibition was entitled 'Homes for Plants. Gardens for Humans' and was displayed at the Science and Technology Park, close to the Olympic Village, from 1 August to 8 November 2008. It was co-organised by Botanic Gardens Conservation International (BGCI), Popular Science Network of Botanic Gardens, Chinese Academy of Sciences (CAS) and Beijing Municipal Science and Technology Committee. This article describes the exhibition and its development.

to showcase the excellent work of botanic gardens to visitors worldwide. The exhibition contained 70 individual panels from 25 countries, each with a different story explaining the work of botanic gardens, institutions, and individuals involved in plant

The World Botanic Garden Exhibition began its life in early 2008. Plans and designs were drawn up and were assiduously developed, refined and implemented by the Exhibition Working Committee during the six months run-up to the Olympics. This also involved inviting and coordinating botanic gardens to participate in the exhibition and to supply text and photos about their work. Competition was understandably high and the exhibition was one of just 15 subprojects included within the Beijing Olympic Village Science and Technology Park.

The Beijing Municipal Government Group evaluated all subprojects at the beginning of June. The World Botanic Garden Exhibition was one of only two subprojects to pass the first project evaluation. A final evaluation took



place at the end of June and the exhibition was very positively acknowledged. It was officially opened to the public on 1st August 2008.

The aim of the World Botanic Garden Exhibition was to highlight the beauty and the value of plant biodiversity and

conservation and research. Other elements of the exhibition included two seed display cabinets, two leaf display cabinets and an interactive plant scent station where visitors could smell different oils and perfumes derived from fragrant plants. Interesting living plants (mainly medicinal plants) were also

Right:  
Leaf display  
cabinet at World  
Botanic Gardens  
Exhibition  
(Xiangying Wen,  
BGCI)



positioned throughout the area and a very large (5.5m x 7.5m) LCD screen, playing videos, provided by various gardens, was strategically placed to draw visitors in from a distance.

Close to the main exhibition area was the living plants display and exit area. This provided a welcome open green space where visitors could wander after viewing the exhibit and enjoy the 30 rare and interesting species of plants. An acknowledgement panel was placed at the exit listing the organising institutions and participating parties.

The preparation and delivery of the World Botanic Garden Exhibition involved over eight months of hard work. Was it worth it? Although there was no formal evaluation, we were delighted by the response of the many visitors. The exhibition was open for just nine weeks (to include the Olympics and the Paralympics) but it provided a unique opportunity to engage with people about the critical work of botanic gardens in plant conservation.

## Résumé

Plus de 180 millions de personnes étaient présentes aux Jeux olympiques de Pékin l'année dernière. Cet événement sportif international a représenté pour les jardins botaniques une opportunité extraordinaire de montrer leur travail aux visiteurs du monde entier. L'exposition sur les jardins botaniques, intitulée « Des maisons pour les plantes. Des jardins pour les hommes », a été présentée au



Left: Thousands of seeds on display in the exhibition area showing the amazing diversity of plant life (Xiangying Wen, BGCI)

Parc des sciences et des technologies, situé à proximité du village olympique, du 1er août au 8 septembre 2008. Elle était co-organisée par le Botanic Gardens Conservation International (BGCI), le Jardin botanique de l'Académie chinoise des sciences (ASC) et le Comité municipal des sciences et technologies de Pékin. Cet article décrit l'exposition et ses développements.

## Resumen

Más de 180 millones de personas atendieron los Juegos Olímpicos en Beijing el año pasado. Este evento deportivo internacional representó una extraordinaria oportunidad para que los jardines botánicos mostraran su



Left: Map of exhibition location in relation to the Olympic National Stadium 'Bird Nest' and Aquatic Centre 'Water Cube'. (Xiangying Wen, BGCI)

trabajo a los visitantes de todas partes del mundo. La exhibición del Jardín Botánico se llamó 'Casa para las plantas. Jardines para el ser humano' y fue exhibida en el Parque de la Ciencia y Tecnología, cerca de la villa Olímpica, desde el 1º de Agosto al 8 de septiembre del 2008. La exposición fue co-organizada por Conservación Internacional de Jardines botánicos (BGCI), Jardines Botánicos de la Academia China de Ciencias (CAS) y el Comité de Ciencia y Tecnología del municipio de Beijing. Este artículo describe la exhibición y su desarrollo.

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<http://www.bjkw.gov.cn/n1143/n1240/n1390/n1795/6236216.html>

Left: The exhibition contained 70 individual panels from 25 countries, each with a different story explaining the work of botanic gardens. (Xiangying Wen, BGCI)



# Implementing the GSPC in 10 steps

The University of Oxford Botanic Garden, located in the heart of Oxford, UK, houses a national reference collection of 7,000 different types of plants. Concerned about maximising its contribution to the GSPC, the garden initiated a 10 step approach with its staff and trustees to promote and embed the GSPC within its five year plan. This approach has now been refined and is presented below for other gardens interested in examining how their institution can contribute to the GSPC.

## Ten steps to implementing the GSPC

- 1 Read the GSPC and identify the targets. Although the 16 targets are buried inside the document, it is a strategy about plants that needs to be implemented by botanic gardens. It is therefore essential that the GSPC is read in full.
- 2 After identifying the targets carry out an audit of what your garden is already doing to achieve each target.
- 3 Run a training session for your staff on the GSPC explaining what your garden is doing to achieve the GSPC. BGCI's bookmarks outline all 16 of the targets and are a valuable resource for this type of training session.
- 4 Run a training session for your trustees/board of management on the GSPC and ask your trustees to sign up your institution to the GSPC.
- 5 Include a report on what your garden is doing towards the GSPC within your annual report, include it on your website, write an article for your friends newsletter or your local newspaper.
- 6 Place the GSPC at the centre of your five-year plan and thus your fundraising efforts, using the GSPC to raise money for your garden to implement the 16 targets.

**Summary** Most of us working in botanic gardens are aware of the Global Strategy for Plant Conservation (GSPC). Legally adopted in 2002 by all governments that are signatories of the Convention on Biological Diversity, the GSPC provides us with a framework for actions to bring about plant conservation, sustainable use, benefit-sharing and capacity-building at global, regional, national and local levels with the ultimate goal of halting the loss of plant diversity.

However, despite gardens knowing about this important strategy, many are still questioning what they can actually do to contribute to its implementation. This article looks at how the University of Oxford Botanic Garden in the UK and the University of Bonn Botanic Gardens in Germany have successfully overcome this dilemma and put into practice programmes that implement and promote awareness of the GSPC and celebrate each garden's work towards achieving the GSPC's 16 targets.

## Target 3 (Oxford Botanic Garden)

One of the plants we have been actively conserving at Oxford for the last decade is *Euphorbia stygiana*. Having successfully introduced this plant into cultivation it was just as important that we published how we did this so that other botanic gardens could use our experiences as a model.

7 Use the GSPC as a basis for guided tours for students and adult visitors and a school programme for children. Examples of similar programmes at the University of Oxford Botanic Garden include *Where in the World?* and *Living in a Changing World*.

8 Arrange a series of seasonal festival days or weekends working with local plant conservation organisations celebrating local plant conservation.

9 Create a trail for visitors using the 16 GSPC targets for each of the stops. The information collected when carrying out your audit of what your garden is already doing will be invaluable in creating such a trail. The leaflet produced at the University of Oxford Botanic Garden

is entitled *Saving the World's Flora*. This was simply written and put together with related colorful photos. The booklet has been distributed widely and it can also now be



downloaded from the Garden's website (<http://www.botanic-garden.ox.ac.uk/Events/obg-events-flora-guide.html>).

10 Look beyond what you are currently doing, carry out an environmental audit of your organisation and identify what else you could do to implement the GSPC. Examples include opting to only use FSC (Forestry Stewardship Council) timber, never using air travel if it is possible to travel by rail, extending your site to include an *in-situ* conservation project and hosting BGCI's next International Congress on Education in Botanic Gardens.

Following the example of the University of Oxford Botanic Garden, the University of Bonn Botanic Gardens, located in the centre of the city of Bonn, published a similar self-guided trail together with 16 interpretation panels demonstrating and promoting the practices of Bonn Botanic Gardens in relation to each target of the GSPC.



Left: Panel illustrating the work of Bonn Botanic Garden in Target 5 of the GSPC (protection of 50% of the most important areas for plant diversity assured) (Junko Oikawa)

### Target 8 (Oxford Botanic Garden)

Botanic gardens already grow 30% of threatened plant species and this *Araucaria araucana* is one example but we are keen to increase the number of threatened plant species that we grow within the Garden. One example of this is our work with the Conifer Conservation Programme at the Harcourt Arboretum where the Arboretum acts as a safe site for endangered conifers.

These educational materials were launched at the time of the 9th Conference of the Parties (COP) to the Convention on Biological Diversity (CBD), which was held in Bonn in May 2008. During the two week conference, the Gardens were one of the main local biological institutes. They ran a range of activities and programmes, but the one outstanding effort was to offer lunchtime guided tours in several languages, themed on the GSPC. The tours were offered everyday to CBD delegates as well as to the general public.

### Target 7 (Bonn Botanic Gardens)

The last remaining specimens of Whitish hair-grass (*Corynephorus canescens*) were collected in the nature conservation area, Tannenbuscher Düne and propagated in the Botanic Gardens. Working together with the Biostation Bonn (one of 40 nature conservancy institutions in North-Rhine-Westphalia), a species recovery project has been carried out. Eutrophic soil was removed, all weeds such as robinia were taken out and Whitish hair-grass was successfully introduced to the site. Today, thousands of specimens of this plant species are growing there.

Staff in both Oxford and Bonn botanic gardens confirm that this practical approach is simple, easy and cost effective to implement. The approach helps you to appreciate what the garden is already doing in plant conservation, and identify where the gaps in conservation efforts are. In essence what you need is enthusiasm

Far left: *Saving the World's Flora*, a self-guided trail interpreting the work of the University of Oxford Botanic Garden in all 16 targets of the GSPC. (University of Oxford Botanic Garden)



and commitment from your team of staff and not to be afraid of the Convention on Biological Diversity!

### Target 9 (Bonn Botanic Gardens)

The University Botanic Gardens cultivates collections of economic plants of the Bonn region. We aim to conserve our locally grown economic plant diversity and to make the local community aware of their local treasure. We raise awareness about these cultivars and make seeds available. The Botanic Gardens contribute towards the conservation of the local and traditional knowledge of regional economic plants.

Below: Panel illustrating the work of Bonn Botanic Garden in Target 2 of the GSPC (a preliminary assessment of the conservation status of all known plant species, at national, regional and international levels) (Junko Oikawa)

### Résumé

En tant que professionnels des jardins botaniques, la plupart d'entre nous avons connaissance de la Stratégie Mondiale pour la Conservation des Plantes (SMCP). Adoptée légalement en 2002 par tous les gouvernements

signataires de la Convention sur la diversité biologique, la SMPC nous apporte un cadre d'actions pour mettre en avant la conservation du végétal, son utilisation durable, le partage des bénéfices et la capitalisation de compétences au niveau local, national, régional et mondial, avec pour objectif ultime de stopper la perte de la diversité végétale.

Cependant, bien que nous soyons informés de cette stratégie importante, de nombreux jardins se demandent encore comment ils peuvent concrètement la mettre en œuvre. Cet article expose la façon dont le Jardin botanique de l'Université d'Oxford, au Royaume-Uni, et le Jardin botanique de l'Université de Bonn, en Allemagne, ont surmonté ce dilemme avec succès, et comment ils ont développé des programmes qui mettent en œuvre et expliquent la SMPC au grand public, tout en valorisant le travail effectué par les jardins pour atteindre les 16 objectifs.

### Resumen

La mayoría de los que trabajamos en jardines botánicos estamos conscientes de la Estrategia Global para la Conservación de las plantas (GSPC). Legalmente adoptada en 2002 por todos los gobiernos que han firmado la Convención sobre la Diversidad Biológica, la GSPC nos proporciona una plataforma para realizar acciones dirigidas a la conservación de las plantas, uso sostenible, repartición de beneficios y capacitación a nivel global, regional, nacional y local con el objetivo de parar la pérdida de la diversidad de plantas.

Sin embargo a pesar de esta estrategia importante, muchos jardines aún todavía cuestionan lo que ellos pueden hacer actualmente para contribuir a su implementación. Este artículo busca ilustrar como el Jardín Botánico de la Universidad de Oxford en el Reino Unido y los Jardines Botánicos de la Universidad de Bonn en Alemania han resuelto este dilema y han puesto en práctica programas que implementan e interpretan la GSPC para el público general, así como también como celebran cada trabajo del jardín que se realiza para alcanzar las 16 metas.

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*The authors from the Bonn Botanic Gardens would like to acknowledge Markus Radscheit for his help with the English translation of the GSPC examples.*



# wwwhat's the web got to do with us?



to get our own messages out to those we want to influence and inform. One way is to develop new and exciting initiatives ourselves. Another is to look around and see what's already out there in our global community, in terms of good and best practice. The corollary of this, of course, is that we shouldn't be shy of telling our colleagues and the wider world about what we're up to.

with their public through podcasts, blogs, image uploading (using Flickr and other file-sharing platforms), on-line education programmes and video conferencing. So if you look up January's issue of E-update [www.bgci.org/education/article/0558](http://www.bgci.org/education/article/0558) you'll see some superb illustrations of gardens using podcasting and blogging strategies to raise awareness and expand their education message.

It is genuinely hard to think of a world without the internet, so emeshed has it become in the very fabric of our daily lives, yet it is barely 20 years since CERN scientist Tim Berners-Lee wrote the protocol for the World Wide Web. Even more remarkable, perhaps, is the speed with which the Web has diversified and grown around the world to reach its current pre-eminence as the dominant vehicle of communication in the 21st Century. For the overwhelming majority of organisations, participation in and exploitation of the Web's astonishing potential is no longer optional.

In our own back garden, as it were, BGCI's use of the internet has radically re-ordered the way we work, transforming our capacity as a networking organisation to communicate with our membership and other interest groups. BGCI's GardenSearch database is just one example, incorporating a webpage for all 2654 botanic gardens in the world, with links wherever possible to the gardens' own websites.

A fascinating new trend sees gardens exploiting the Web's potential for individualising relationships with visitors by enabling them to customise garden tours online. Having organised the tour to meet their own requirements, visitors are able to download the relevant information to their ipods or mp3 players before visiting the garden. Characteristically the concept is already being refined and developed, with podcasters making their own alternative tours and providing them online – see <http://rodeworks.com/learn/make-your-own-podcast-museum-tour/>

Many other examples of good practice exist, with botanic gardens worldwide using websites to engage and interact

With the advent, in 2002, of so-called Web 2 models for information sharing and exchange, including Weblogs, RSS and social-networking sites, the capacity for user-generated and edited websites was massively enhanced, leading to what some have called the greater democratisation of the Web.

The challenge for us, as botanic garden educators, is to find ways of harnessing the Web's immense power



The virtual world of the Web remains a restless and dynamic organism, with a seemingly limitless capacity to innovate new communications opportunities. As educators with a vested interest in communicating it's our responsibility to keep abreast of the latest developments, looking always to see how we can exploit them to our advantage and all the while sharing our experience with others.

# Resources

## Resources

### Books and Education Curriculum

#### Conducting Meaningful Interpretation: A Field Guide for Success

This comprehensive book guides you through the theories, techniques and strategies for effective interpretation, looking at the history of interpretation and examining the future of the profession. It includes tips on roving interpretation, presenting to special groups, using audio visual equipment, traditional campfire programmes, and much more. Conducting Meaningful Interpretation is internationally relevant and is an excellent resource for guides and interpreters working in the natural environment.

*Carolyn Widner Ward and Alan E. Wilkinson, 2006, Fulcrum Publishing, ISBN 1555915302. [www.fulcrum-books.com/](http://www.fulcrum-books.com/)*

#### Communicating sustainability: how to produce effective public campaigns

This guide shows how the power of communication can be harnessed for achieving the goal of promoting more sustainable lifestyles. Communicating sustainability covers the myths and facts of communications and suggests useful resources, as well as offering hints on how to get the best out of communications agencies. It is aimed at

## Disponible

### Livres et programmes scolaires

#### Guide pratique pour une interprétation réussie

Cet ouvrage très détaillé vous guidera à travers les théories, techniques et stratégies pour une interprétation efficace, examinant l'histoire de la vulgarisation et l'avenir de la profession. Il comprend des conseils sur l'interprétation itinérante, les présentations pour des groupes spéciaux, l'utilisation d'équipement audio-visuel, les programmes traditionnels de soirées autour d'un feu de camp, etc. Ce guide pratique est intéressant pour toutes les régions du monde et sera un excellent outil pour les guides et animateurs nature.

*Carolyn Widner Ward and Alan E. Wilkinson, 2006, Fulcrum Publishing, ISBN 1555915302. [www.fulcrum-books.com/](http://www.fulcrum-books.com/)*

#### Communiquer sur le développement durable - Comment réaliser des campagnes publiques efficaces

Ce guide montre comment exploiter les outils de communication pour promouvoir des styles de vie plus durables. « Communiquer sur le développement durable » traite des mythes et de la réalité en matière de communication et propose des ressources utiles, ainsi que des

## Recursos

### Libros y el plan de estudios educativo

#### Llevando a cabo una valiosa interpretación significativa: una guía para el éxito

Es un libro muy completo con teoría, técnicas y estrategias para una interpretación efectiva, a través de la historia, la interpretación examina el futuro de una profesión. Incluye pautas en la interpretación itinerante, moldeado a grupos especiales, usando equipo audiovisual, programas tradicionales de hogueras y mucho más. El libro es muy elocuente en interpretación con relevancia internacional y excelente para ser usado por guías e interpretes que trabajan en un medio ambiente natural

*Carolyn Widner Ward y Alan E. Wilkinson, 2006, Fulcrum Publishing, ISBN 1555915302. [www.fulcrum-books.com/](http://www.fulcrum-books.com/)*

#### Comunicando sustentabilidad: como realizar campañas públicas efectivas

Esta guía da a entender el poder que tiene la comunicación para lograr un mejor estilo de vida sustentable. Comunicando sustentabilidad cubre los temas de mitos y hechos de la comunicación, sugiere recursos útiles para ello, asimismo ofrece pautas de cómo lograr lo mejor de las agencias



local and national governmental authorities as well as organisations, such as botanic gardens, that are interested in developing and implementing public awareness campaigns on environment and development issues.

*Communicating Sustainability can be downloaded from the UNEP website (www.unep.fr/scp/publications/details.asp?.id=DTI/0679/PA)*

*For hard copies of the guide, contact Solange Montillaud-Joyel at solange.montillaud@unep.fr*

### **A Greek Odyssey: Greek language and culture trail in the Adelaide Botanic Garden**

The Greek community in Australia consists of around 400,000 people, about 2% of the total population. To reach out to this audience, the Adelaide Botanic Gardens has set up a Greek Odyssey trail which includes an accompanying booklet to help Greek language students practise Greek while learning about different aspects of Greece's history, culture and environment. The trail is also intended to be used as part of a wider school project that involves students writing and presenting their own version of a Greek Odyssey.



conseils pour utiliser au mieux les agences de communication. Il s'adresse aux gouvernements, aux collectivités locales, ainsi qu'aux organisations comme les jardins botaniques qui voudraient mettre au point et lancer des campagnes de sensibilisation du public sur des sujets liés au développement et à l'environnement.

*«Communiquer sur le développement durable» peut être téléchargé sur les sites Internet du PNUÉ*

*(www.unep.fr/scp/publications/details.asp?.id=DTI/0679/PA)*

*Pour un exemplaire papier, contactez Solange Montillaud-Joyel : solange.montillaud@unep.fr Disponible en français et en espagnol.*

### **Une Odyssée Grecque: un sentier consacré à la langue et à la culture grecques au Jardin botanique d'Adelaïde**

La communauté grecque d'Australie compte environ 400 000 personnes, soit 2% de la population totale. Pour s'ouvrir à ce public, le Jardin botanique d'Adelaïde a mis en place un sentier «Odyssée grecque» en prévoyant un livret explicatif pour aider les étudiants en grec à pratiquer cette langue et à s'informer de différents aspects de l'histoire, de la culture et de l'environnement de la Grèce. Il est également prévu d'utiliser le parcours dans le cadre d'un projet scolaire plus large où les étudiants doivent écrire et présenter leur propre version d'une Odyssée grecque.

Dans le livret est insérée une carte qui se présente comme un rouleau ancien. Cette carte permet aux étudiants de se déplacer dans le jardin comme s'ils voyageaient dans la Grèce antique et les encourage à localiser différents lieux du jardin auxquels ont été attribués des noms ou des étiquettes en grec. On trouve le long du parcours quatorze plantes auxquelles le livret

de publicité. La guía es orientada a las autoridades gubernamentales locales y nacionales, asimismo a otras organizaciones como lo son Jardines Botánicos, o instituciones interesadas en desarrollar e implementar una mayor conciencia publica en cuanto a campañas para el medio ambiente y los temas de desarrollo.

*Communicating Sustainability se puede trasvasar [descargar] del sitio Web de la UNEP (www.unep.fr/scp/publications/details.asp?.id=DTI/0679/PA).*

*Para solicitar copias impresas, por favor contacte a Solange Montillaud-Joyel - solange.montillaud@unep.fr*

### **Una Odisea Griega: el idioma griego y el sendero de cultura en el Jardín Botánico de Adelaide**

La comunidad griega en Australia consiste de aproximadamente 400 000 gentes, que son un 2 % de la población actual. Para llegar a esta audiencia, el Jardín Botánico de Adelaide ha hecho el sendero Odisea griega. Este consiste en un libro para ayudar a los estudiantes a practicar el idioma griego a través de diferentes aspectos de la historia de Grecia, su cultura y medio ambiente. Este también se usa en las escuelas como parte de un proyecto mas grande para que los estudiantes escriban y presenten su propia versión de una 'Odisea griega'.

El libro tiene figuras tridimensionales, las cuales se forman al abrir las paginas, los mapas son en forma de pergaminos enrollados, como lo eran los antiguos mapas. Estos últimos permiten que los estudiantes se orienten en el jardín como si ellos estuvieran viajando en Grecia, de esta manera los anima a localizar diferentes áreas importantes en el jardín que previamente han sido marcadas con etiquetas y títulos en griego. El libro contiene características, información y actividades recreativas para 14 diferentes plantas, las que están representadas en los senderos del jardín, algunas de ellas son por ejemplo: Tejo europeo (*Taxus baccata*), Laurel (*Laurus nobilis*) y albaca (*Ocimum basilicum*), entre otras. El sendero en el jardín y el libro son una base excelente para llevar a cabo a su éxito de la Odisea Griega.

The booklet includes a pull-out cartoon style map in the form of an ancient scroll. This map allows students to find their way around the garden as if they were travelling through ancient Greece and encourages them to locate different landmarks in the Garden that have been given Greek names or labels. Fourteen plants are featured along the trail and the booklet is packed full of activities and information about each one (eg. Yew (*Taxus baccata*), Bay Laurel (*Laurus nobilis*) and Basil (*Ocimum basilicum*). The trail and booklet offers an excellent foundation for developing a Greek trail.

*Loiza Karamanis, Steve Meredith, et al., 2008, The State of South Australia, Department of Education and Children's Services and the Botanic Gardens of Adelaide. The booklets can be downloaded from the website [www.openaccess.edu.au](http://www.openaccess.edu.au) (7mb). For a quality print edition and A2 poster email Steve Meredith at [meredith.steve@saugov.sa.gov.au](mailto:meredith.steve@saugov.sa.gov.au). There will be a small charge to cover printing and postage.*

### **Ethnobotany Explorers**

Ethnobotany Explorers is a new curriculum unit designed to teach high school students about ethnobotany, the study of how humans and plants interact. The importance and value of botany are presented through engaging lessons, classroom activities, and a DVD. Lessons also include basic science concepts such as plant identification and scientific methods.

The DVD serves as a window to the world of ethnobotanical research and gives students a look at ethnobotany in action. It features ethnobotanist teams in Belize and the United States, including New York Botanical Garden scientists, plant collectors, and graduate students collecting plants, as well as interviewing traditional healers.

Ethnobotany Explorers addresses central science concepts such as plant anatomy, species diversity, and ecology and can be combined with other subjects including geography, economics, social studies, and global studies. Initially designed for a high-school level audience, the programme has been successfully implemented by

consacre toutes sortes d'activités et d'informations (par exemple l'if (*Taxus baccata*), le laurier (*Laurus nobilis*) ou le basilic (*Ocimum basilicum*). Le parcours et le livret constituent une excellente base de départ pour concevoir un parcours grec.

*Loiza Karamanis, Steve Meredith, et al., 2008, Etat d'Australie du sud, Département de l'Education et Service Enfance et le Jardin botanique d'Adelaide. Le livret peut être téléchargé sur le site [www.openaccess.edu.au](http://www.openaccess.edu.au) (7mb). Pour une édition papier de qualité et une affiche en format A2, s'adresser par courriel à Steve Meredith : [meredith.steve@saugov.sa.gov.au](mailto:meredith.steve@saugov.sa.gov.au). Une somme modique sera demandée pour couvrir les frais d'impression et d'envoi.*

### **Explorateurs ethnobotaniques**

«Explorateurs ethnobotaniques» est un nouvel élément des programmes scolaires destiné à enseigner aux élèves du secondaire l'ethnobotanique, à savoir l'étude des interactions entre les humains et les végétaux. L'importance et l'utilité de la botanique sont mises en évidence par des cours, des activités en classe et un DVD. Les cours englobent également des notions scientifiques fondamentales comme la reconnaissance des plantes et des méthodes scientifiques.

Le DVD est une ouverture sur le monde de la recherche ethnobotanique et permet aux élèves de voir des ethnobotanistes en action. Il montre des équipes à Belize et aux Etats-Unis, y compris des scientifiques du Jardin botanique de New-York, des collectionneurs de plantes et des étudiants récoltant des plantes et interrogeant des guérisseurs traditionnels.

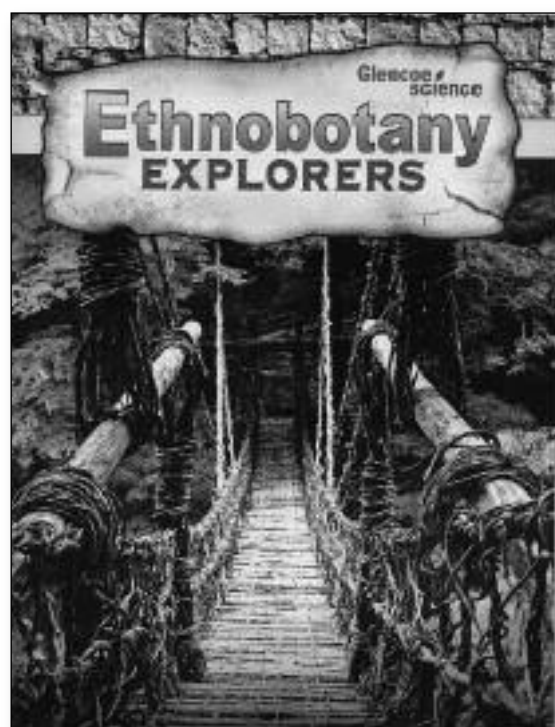
«Explorateurs ethnobotaniques» traite de sujets scientifiques de base tels que l'anatomie des plantes, la diversité des espèces et

*Contacto: Loiza Karamanis, Steve Meredith et al., 2008, The State of South Australia, Departamento de Educación y servicios para niños y el Jardín Botánico de Adelaide. Los libros pueden ser trasvasados [descargados] del sitio Web [www.openaccess.edu.au](http://www.openaccess.edu.au) (7mb). Para una versión impresa y un cartel de tamaño A2 (420 x 594 mm — 16.5 x 23.4 in), favor de enviar un correo electrónico a Steve Meredith, [meredith.steve@saugov.sa.gov.au](mailto:meredith.steve@saugov.sa.gov.au). Se te cobrará un precio mínimo del costo de la impresión y el correo postal.*

### **Exploradores etnobotánicos**

Es una nueva unidad en el sistema educativo que se imparte en las escuelas preparatorias a los estudiantes de etnobotánica, rama que estudia de la interacción entre la humanidad y las plantas medicinales. El valor e importancia de la botánica se presenta a través de lecciones interesantes, actividades en el salón de clases y un DVD. En ellas se incluyen conceptos básicos como el método científico y la identificación de plantas.

Los conceptos científicos centrales de Exploradores botánicos son la anatomía vegetal, la diversidad y ecología de las especies, aspectos que pueden también ser combinados con



middle-school science teachers in pilot tests. The curriculum can also be used in informal education settings such as after-school science clubs, botanic gardens, and nature centres.

*Ethnobotany Explorers, 2008, Glencoe, the science education division of McGraw-Hill, ISBN 978-0-07-891486-7. www.glencoe.com. Available only in the USA.*

### **The Environmental Food Crisis: The Environment's Role in Averting Future Food Crises**

A new report released by United Nations Environment Programme (UNEP) warns that up to 25% of the world's food production may become lost due to environmental breakdown by 2050 unless action is taken. The report provides the first summary by the UN of how climate change, water stress, invasion pests and land degradation may impact world food security, food prices and life on the planet and how we may be able to feed the world in a more sustainable manner.

*UNEP, 2009, ISBN 978-82-7701-054-0, paperback 104pp, \$US25. Earthprint Limited, P O Box 119, Stevenage, Hertfordshire SG1 4TP, UK. www.earthprint.com*

l'écologie, et peut être associé à d'autres disciplines dont la géographie, l'économie, les sciences sociales et l'étude des questions mondiales. Initialement prévu pour un public de lycéens, le programme a été adapté avec succès par des enseignants du collège lors de tests pilotes. Il peut également être utilisé dans le cadre d'activités périscolaires comme des clubs scientifiques, des jardins botaniques ou des centres nature.

*Ethnobotany Explorers, 2008, Glencoe, Division d'éducation scientifique de McGraw-Hill, ISBN 978-0-07-891486-7. www.glencoe.com. Disponible uniquement aux Etats-unis.*

### **La crise alimentaire et l'environnement: rôle de l'environnement dans la prévention de futures crises alimentaires**

Selon un nouveau rapport publié par le Programme des Nations Unies pour l'Environnement (PNUE), près du quart de la production vivrière mondiale risque d'être perdu à cause de la dégradation de l'environnement d'ici 2050 si rien n'est fait. Le rapport fournit le premier résumé de l'ONU sur l'effet du réchauffement climatique, du manque d'eau, des invasions de nuisibles et de la dégradation sur la sécurité alimentaire dans le monde, le

otros temas como geografía, economía, estudios sociales y globales.

La idea fue inicialmente desarrollada para el nivel de la escuela preparatoria, debido al éxito del programa, éste fue modificado para ser incluido como prueba piloto con profesores de las escuelas secundarias. El programa educativo es muy adecuado y puede ser utilizado de manera informal en otros programas para clubes de ciencia, jardines botánicos y centros de estudios para la naturaleza

*Ethnobotany Explorers, 2008, Glencoe, División de ciencias educativas de McGraw-Hill, ISBN 978-0-07-891486-7. www.glencoe.com. Disponible sólo en los estados Unidos de América*

### **La crisis medioambiental de los alimentos: reglas medioambientales para evitar de una crisis futura de alimentos.**

En un nuevo reporte dado por el programa del medioambiente de las Naciones Unidas se predice para el año 2050, que de no ser tomadas medidas adecuadas, hasta el 25 % de la producción mundial de alimentos puede perderse debido a un colapso ambiental. En este reporte se resume como el cambio climático, escasez de agua, invasión de plagas y degradación de suelos pueden crear un impacto negativo en la producción segura de alimentos, costo de los mismos y vida en el planeta; también se resumen alternativas de cómo se puede promover la producción de alimentos en la tierra de una manera más sustentable.

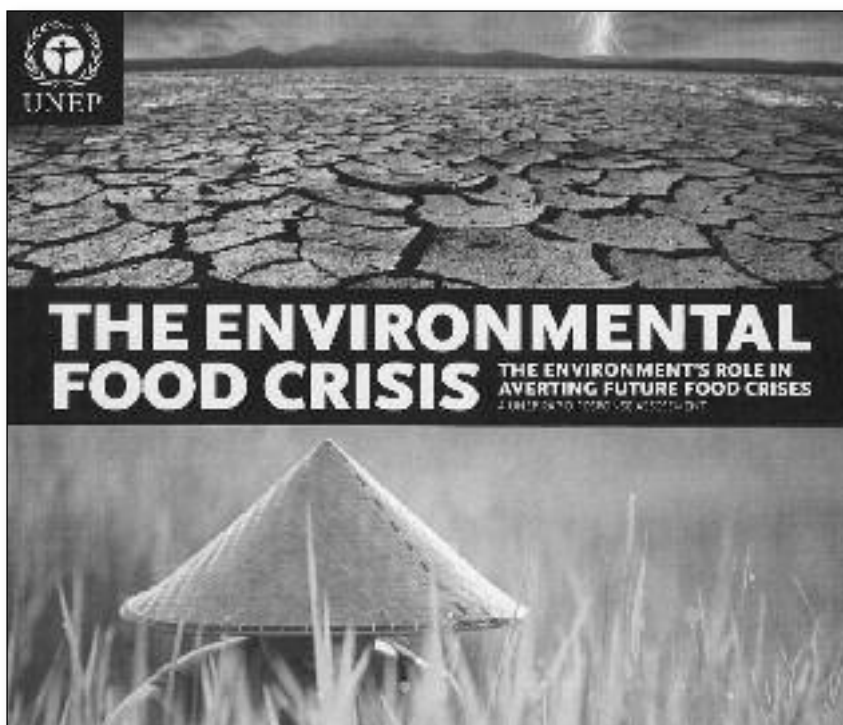
*UNEP, 2009, ISBN 978-82-7701-054-0, edición rustica 104pp, \$US20. Earthprint Limited, P O Box 119, Stevenage, Hertfordshire SG1 4TP, UK. www.earthprint.com*

### **Sitios Web**

<http://cpd.conted.ox.ac.uk/env/>

### **Las bases de la predicción climática**

Las bases de la predicción climática es un CD-ROM que trata las preocupaciones futuras del medioambiente. Por medio del uso de actividades interactivas, los niños





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## Websites

<http://cpd.conted.ox.ac.uk/env/>

### The Basics of Climate Prediction

The Basics of Climate Prediction is a new CD-Rom looking at the importance of climate prediction and the worrying outlook for the future. Using interactive activities, children can set the parameters of the predictions and watch them unfold. The CD-Rom finishes with some climate predictions for the future. They paint a pretty dire picture if we continue with the high levels of fossil-fuel emissions but show that if we are able to make changes then the level of change will be much lower. A well laid out simple teaching resource. The CD-Rom can be directly downloaded from the website or you can order a free hard copy.

<http://www.eol.org/>

### Encyclopaedia Of Life

The Encyclopedia of Life (EOL) is an ambitious project to organise and make available via the Internet virtually all information about life present on earth - from animals and plants to bacteria and viruses. Each species has its own page with photos, distribution maps and a wealth of information including the conservation status and threats to its survival. The encyclopaedia is a work in progress so you will find information lacking for less common species but this could be your chance as the site is looking for contributors. The site is also developing an interactive tree of life that will highlight the evolutionary links between species.

<http://www.neweconomics.org/gen>

### New Economics Foundation (nef)

Nef is an independent organisation carrying out research and advocacy to demonstrate and inspire economic well-being. Its aim is to improve the quality of life by promoting innovative solutions that challenge mainstream thinking on economic, environmental and social issues. Nef has a centre for well-being and has included a great deal of information about this on its website which is worth exploring. For example, it sites five evidence-based ways to well-being – connect, be active, take notice, keep learning and

prix des denrées et la vie sur terre, et sur les moyens de nourrir le monde d'une manière plus durable.

UNEP, 2009, ISBN 978-82-7701-054-0, livre de poche 104pp, \$US20. Earthprint Limited, P O Box 119, Stevenage, Hertfordshire SG1 4TP, UK. [www.earthprint.com](http://www.earthprint.com)

## Sites Internet

<http://cpd.conted.ox.ac.uk/env/>

### Les fondements de la prévision climatique

«Les fondements de la prévision climatique» est un nouveau CD-Rom qui montre l'importance des prévisions climatiques et les inquiétantes perspectives qui se profilent pour l'avenir. A travers des activités interactives, les enfants peuvent fixer les paramètres des prévisions et en observer l'application. Le CD-Rom présente en conclusion quelques prévisions climatiques. Elles dépeignent un bien triste tableau pour le cas où les fortes émissions liées aux combustibles fossiles se poursuivraient, mais montrent que si nous arrivons à modifier nos comportements, le changement sera nettement moindre. Un outil d'enseignement simple et bien conçu. Le CD-Rom peut être directement téléchargé depuis le site ou commandé gratuitement.

<http://www.eol.org/>

### Encyclopédie de la vie

«L'Encyclopédie de la vie» est un ambitieux projet visant à organiser et à communiquer sur Internet quasiment toutes les informations sur la vie présente sur terre – des animaux et des végétaux aux bactéries et aux virus. Chaque espèce a sa page avec des photos, des cartes de répartition géographique et une mine de renseignements, notamment sur son état de conservation et son degré de régression. L'encyclopédie est en cours de réalisation: elle ne contient pas d'informations sur certaines des espèces les moins courantes, ce qui donne à chacun l'occasion d'apporter des contributions. Un arbre de vie interactif qui montrera les liens entre les espèces dans l'évolution est également en cours d'élaboration.

establecen parámetros de las predicciones y las extienden [extrapolan] en su desarrollo. El CD-ROM finaliza con algunas predicciones climáticas. Los niños pueden dibujar una imagen alarmante si nosotros decidimos continuar con los altos niveles de producción de emisiones a partir del consumo de hidrocarburos fósiles, pero se les muestra, que si nosotros decidimos hacer cambios, entonces los niveles pueden ser reducidos. Este es un diseño simple para mostrar y dar a entender el tema. El CD-ROM puede trasvasarse [descargarse] directamente del sitio Web que se anota a continuación, alternativamente, puedes obtener una copia impresa gratis, si la solicitas a:

<http://www.eol.org/>

### Enciclopedia de la Vida

La enciclopedia de la vida (EOL) es un proyecto colosal en el que se organiza y se pone a disposición en la Internet toda la información acerca de la vida en el planeta – abarca animales, plantas, bacterias y virus. Cada especie tiene una sección propia con una imagen, mapa de distribución e información bastante completa en la que se incluyen estados de conservación y amenazas para la sobrevivencia de las mismas. La enciclopedia es un trabajo aún en desarrollo, entonces existen huecos para especies menos comunes; esto, a la vez, abre la oportunidad a contribuyentes potenciales para completar poco a poco la enciclopedia. Al momento, se encuentra en desarrollo un árbol de la vida, en el cual se tendrán disponibles los posibles lazos evolutivos entre las especies.

<http://www.neweconomics.org/gen>

### Nueva fundación de economía (nef)

Nef es una organización independiente que lleva a cabo investigación para mostrar e inspirar el desarrollo en defensa del bienestar económico humano. Su meta es mejorar la calidad de vida por medio de soluciones que pueden afrontar las corrientes dominantes de hoy en día en aspectos económicos sociológicos y ambientales.

give. It also includes 'The Happy Planet Index: An index of human well being and environmental impact' which can be downloaded. This report examines what it means to be happy, taking into account ecological efficiency. It also highlights the importance of social networks and community as a major contributor to individual well-being, which botanic gardens could use to justify their work in education and community outreach.

<http://www.wordle.net/>

### **Wordle**

Wordle is a terrific toy for generating 'word clouds' from text that you provide. The clouds give greater prominence to words that appear more frequently in the source text. You can tweak your 'clouds' with different fonts, layouts, and color schemes and the images created can be used for a variety of activities, including powerpoints presentations.

<http://www.evergreen.ca/en/index.html>

### **Evergreen**

Evergreen is a not-for-profit organisation that aims to make cities more livable by deepening the connections between people and nature, and empowering Canadians to take a hands-on approach to their urban environments. The website contains a host of resources offering plenty of ideas for learning outside the classroom. You can also join the Evergreen discussion forum where you can post questions, comments and documents.

<http://www.neweconomics.org/gen>

### **Nouveaux fondements de l'économie (nef)**

Nef est une organisation indépendante qui effectue des travaux de recherche et de sensibilisation pour promouvoir et inspirer le bien-être économique. Son objectif est d'améliorer la qualité de la vie en proposant des solutions innovantes qui battent en brèche les idées courantes sur des questions d'économie, d'environnement et de société. Nef a un centre consacré au bien-être, et présente de nombreuses informations à ce sujet sur son site qui mérite d'être exploré. Il cite par exemple cinq manières éprouvées de parvenir au bien-être : s'associer, être actif, observer, continuer à apprendre et donner. Il comprend aussi l'« Index Planète Heureuse : index du bien-être humain et de l'impact environnemental » qui peut être téléchargé: ce rapport souligne l'importance des réseaux sociaux et de la communauté pour le bien-être individuel, aspect que les jardins botaniques pourraient mettre à profit pour justifier leur travail éducatif et social.

<http://www.wordle.net/>

### **Wordle**

Wordle est un jeu incroyable pour produire des « nuages de mots-clés » à partir d'un texte que vous fournissez. Les «nuages» mettent en relief les mots qui apparaissent le plus fréquemment dans le texte source. Vous pouvez modifier les «nuages» avec différentes polices, mises en page et couleurs. Les images produites peuvent être utilisées pour différentes activités dont des présentations PowerPoint.

<http://www.evergreen.ca/en/index.html>

### **Evergreen**

Evergreen est une association non lucrative qui a pour objet de rendre les villes plus vivables en renforçant les liens entre la population et la nature, et d'encourager les Canadiens à s'approprier le milieu urbain. Le site contient toute une série de ressources qui donnent de nombreuses idées pour apprendre en dehors des salles de classe. Vous pouvez aussi vous inscrire sur le forum de discussion où vous pourrez afficher questions, remarques et documents.

Nef tiene un centro de desarrollo un nodo de información muy amplio en la Internet que vale la pena consultar y navegar. Por ejemplo, se dan 5 alternativas de consulta: evidencia en hechos para el bienestar – conexiones- ser activo, continúe notando [observando], manténgase aprendiendo y dando [evidence-based ways to well-being - connect, be active, take notice, keep learning and give]. También incluye, el Índice para un planeta feliz: índice para el bienestar humano y el impacto medioambiental. [ 'The Happy Planet Index: An index of human well being and environmental impact' ]. Los materiales se pueden trasvasar [descargar] fácilmente. La información analiza el aspecto 'el ser feliz' a través de la eficiencia ecológica. Se hace hincapié en la importancia de las redes sociales y las comunidades como los mayores contribuyentes al bienestar de vida individual, todo esto puede ser usado en educación tanto en los jardines botánicos como en los cursos a larga distancia.

<http://www.wordle.net/>

### **Wordle**

Es un juego fantástico para formar 'nubes de palabras' a partir de un texto que tú propones. Las nubes dan mayor importancia, o hacen resaltar las palabras que aparecen mas frecuentemente en el texto original. De esa manera, tú puedes retorcer (pellizcar) tus nubes con diferentes fuentes, diseños, diagramas o colores para ser usadas en varias actividades, como por ejemplo, en presentaciones de PowerPoint.

<http://www.evergreen.ca/en/index.html>

### **Siempreverde**

Siempreverde es una organización no lucrativa que tiene como meta hacer que las ciudades sean mas habitables considerando la interacción gente y naturaleza, y que con esta, los canadienses sean proactivos con su medio ambiente urbano. El sitio Web consiste en recursos que ofrecen numerosas ideas para aprender para actividades a llevar a cabo fuera de un salón de clases. Tú puedes unirse al foro de discusión de Siempreverde, en el cual puedes poner, tus preguntas, comentarios y documentos relevantes a estos asuntos.

## Monthly News Updates

Receive news updates once a month direct to your inbox from BGCI and botanic gardens around the world. Every issue includes news and links to education resources, profiles of plant-based educators and programmes and ideas and feedback from readers. Log onto: [www.bgci.org/education/2209](http://www.bgci.org/education/2209)

.....and sign up now!

You can also read past issues of E-update on our website at [www.bgci.org/education/archive/](http://www.bgci.org/education/archive/)



## Plant Conservation Day - May 18

Join in with botanic gardens and zoos worldwide to celebrate Plant Conservation Day. Last year over 40 institutions ran an event, this year there will be even more.

Visit [www.plantconservationday.org](http://www.plantconservationday.org) for a free online toolkit where you can download all the resources — background, promotional materials, and education activities — you need for a successful Plant Conservation Day at your site.

If you have a Plant Conservation Day celebration story or resources you would like to share, please send a short summary, links and/or photos to us at [plantconservationday@gmail.com](mailto:plantconservationday@gmail.com).





# How to join Botanic Gardens Conservation International and help us to save plants from extinction

**Established in 1987, BGCi links more than 500 botanic gardens and conservation organizations in 115 countries, working together to save PLANTS FOR THE PLANET.**

**BGCi's INSTITUTION members receive numerous benefits:**

- Opportunities for involvement in joint conservation and education projects
- Tools and opportunities to influence global conservation policy and action
- Botanic Garden Management Resource Pack (upon joining)\*
- Regular publications:
  - Cuttings – newsletter on botanic gardens and plant conservation (2 per year)
  - BGjournal – an international journal for botanic gardens (2 per year)
  - Roots - Environmental Education Review (2 per year)
  - A wide range of publications and special reports
- Invitations to BGCi congresses and discounts on registration fees
- BGCi technical support and advisory services

Institution Membership		£ Stg	US \$	€ Euros
A	BGCi Patron Institution	5000	8000	7500
B	Institution member (budget more than US\$2,250,000)	750	1200	1000
C	Institution member (budget US\$ 1,500,000 - 2,250,000)	500	800	650
D	Institution member (budget US\$ 750,000 - 1,500,000)	350	550	450
E	Institution member (budget US\$ 100,000 - 750,000)	185	300	250
F	Institution member (budget below US\$100,000)*	85	130	115

\*Generally applies to institutions in less developed countries

**INDIVIDUAL members and donors**

support BGCi's global network for plant conservation, and are connected to it through our publications and events. Membership categories include:

- Regular publications:
  - Cuttings – newsletter on botanic gardens and plant conservation (2 per year)
  - BGjournal - an international journal for botanic gardens (2 per year)
  - Roots - Environmental Education Review (2 per year)
- Invitations to BGCi congresses and discounts on registration fees

Individual Membership		£ Stg	US \$	€ Euros
J	Conservation donor ( <i>BGjournal</i> , <i>Roots</i> and <i>Cuttings</i> reports and more)	250	400	350
K	Associate member ( <i>Cuttings</i> and <i>BGjournal</i> )	40	65	50
L	Associate member ( <i>Cuttings</i> and <i>Roots</i> )	40	65	50
M	Friend ( <i>Cuttings</i> ) available through online subscription only ( <a href="http://www.bgci.org">www.bgci.org</a> )	10	15	15

**Corporate Membership is available; please contact BGCi at [info@bgci.org](mailto:info@bgci.org) for further details.**

\*Contents of the Botanic Garden Management Resource Pack include: *Darwin Technical Manual for Botanic Gardens*, *A Handbook for Botanic Gardens on the Reintroduction of Plants to the Wild*, *BGjournal - an international journal for botanic gardens (2 past issues)*, *Roots - Environmental Education Review (2 past issues)*, *The International Agenda for Botanic Gardens in Conservation*, *Global Strategy for Plant Conservation*, *Environmental Education in Botanic Gardens*, additional recent BGCi reports and manuals. *BG-Recorder* (a computer software package for plant records) available on request.

Payment may be made online at [www.bgci.org/worldwide/members/](http://www.bgci.org/worldwide/members/), or by cheque (payable to Botanic Gardens Conservation International) or VISA/MasterCard sent to BGCi, Descanso House, 199 Kew Road, Richmond, Surrey, TW9 3BW, U.K or Fax: +44 (0) 20 8332 5956.

I wish to apply for BGCi's INSTITUTION / INDIVIDUAL membership (circle one).

Institution Name (if applicable) .....

Contact Name .....

Address .....

Telephone .....

Fax .....

E-mail .....

Website .....

Membership category (A-M) ..... Annual rate .....

VISA/Mastercard number .....

Credit card expiry date ..... Security code/CSV number (last 3 digits) .....

Signature ..... Print name .....

I would like to make a donation to BGCi. Amount .....

Please clearly state your name (or the name of your institution) on all documentation. Please contact [info@bgci.org](mailto:info@bgci.org) for further information. Individuals in the U.S. can make tax-deductible contributions online at [www.justgive.org](http://www.justgive.org) or by contacting [usa@bgci.org](mailto:usa@bgci.org). BGCi is a registered charity and company, limited by guarantee, in England and Wales, and in the U.S. as a 501(c)(3) non-profit organization.



**BGCI**

*Plants for the Planet*

**Botanic Gardens  
Conservation International**

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**BGCI 7TH INTERNATIONAL CONGRESS  
ON EDUCATION IN BOTANIC GARDENS**

Durban, South Africa - 1st - 5th November 2009 - [www.ebg2009.org](http://www.ebg2009.org)



*Join us for what promises to be an  
action packed congress!*

*Educators from all over the world will be sharing their views and programmes about how we effectively communicate plant-based issues to the public in a way that empowers rather than disempowers people to take action.*

**Themes addressed during the congress will include:**

- Achieving the Global Strategy for Plant Conservation (GSPC) and the Millennium Development Goals (MDGs) through education
- Ways of learning towards environmental justice
- Climate change and botanic gardens: interpretation for action
- The Decade of Education for Sustainable Development (ESD): plants, sustainability, education and culture

**Please note**

We are endeavouring to make the congress as affordable as possible. We've reduced the registration fees and are offering a wide range of accommodation from hotels to backpacker lodges.

For further information and to register please visit:  
[www.ebg2009.org.za](http://www.ebg2009.org.za)

*Action learning: places, spaces and partnerships for biodiversity and human well-being*

