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# Access for all

## Editorial - English

Most of us would subscribe to the view that botanic gardens ought to be accessible, and by that we generally mean open to the public. But such a simple and unchallengeable statement raises more questions than it seems to answer. For example, what exactly do we mean by access? Who gains access, to what and how? These are some of the issues raised in this edition of *Roots*.

Our first article, by Marcus Ormerod and Jane McCleave, provides a useful overview of the subject, offering insights on issues of access for botanic gardens worldwide. The barriers they identify include organisational, physical, intellectual, social and cultural as well as sensory and financial. Overcoming all of these may seem an onerous task, but in many cases low cost solutions can be found. The important thing is the commitment to creating an inclusive environment for everyone.

Such commitment is demonstrated in many articles in this issue. The Australian Garden, which opens this May at the Royal Botanic Gardens, Cranbourne, has striven to involve community partnerships from the outset and throughout the planning stages. This has not always proved easy but, as Sharon Willoughby and Chris Russell articulate, it is through these long-term relationships that they plan to create the most impact within their community; that is, a greater appreciation of plants and more sustainable home gardens. However, not all gardens have the luxury of

## Editorial - Français

La plupart d'entre nous adhère à l'idée que les jardins botaniques doivent être accessibles, c'est-à-dire ouverts au public. Mais une affirmation aussi simple et consensuelle soulève plus de questions qu'il n'y paraît. Que veut-on vraiment dire par accès? Qui peut avoir accès? à quoi, et comment? Voici quelques-unes des questions traitées dans ce numéro de *Roots*.

Le premier article, de Marcus Ormerod et Jane McCleave, est une revue très utile sur le sujet avec un aperçu des problèmes d'accès des jardins botaniques dans le monde entier. Les barrières identifiées sont d'ordre organisationnel, physique, intellectuel, social, culturel aussi bien que sensoriel et financier. Dépenser tous ces problèmes peut sembler une tâche énorme, mais dans beaucoup de cas des solutions peu onéreuses peuvent être trouvées. L'important est l'engagement pris pour créer un environnement prenant tout le monde en compte.

Beaucoup d'articles de ce numéro montrent un tel engagement. Le Jardin australien qui ouvrira ce mois de Mai dans les Jardins Botaniques Royaux de Cranbourne, a cherché des partenariats avec la communauté locale dès le début du projet et dans toutes les étapes de sa réalisation. Cela ne s'est pas toujours avéré facile, mais comme le disent Sharon Willoughby et Chris Russell, c'est à travers ces relations de long terme qu'ils prévoient d'obtenir un réel impact au sein de la population; c'est-à-dire une meilleure connaissance des plantes, et des jardins familiaux plus «durables».

## Editorial - Español

La mayoría de nosotros suscribe que los jardines botánicos deberían ser accesibles, esto es, abiertos en el amplio sentido de la palabra, al público en general. Ahora bien, tan simple afirmación plantea más problemas de los que parece resolver. Por ejemplo ¿qué entendemos por accesible? Accesible para quien, que y cómo. Estas son las cuestiones de esta edición de *Roots*.

El primer artículo, de Marcus Ormerod y Jane McCleave, proporciona un útil repaso del tema con panorama mundial del tema. Las fronteras y barreras que pormenorizan son las organizativas, físicas, intelectuales, sociales y culturales, así como sensoriales y financieras. Superarlas parece una tarea muy costosa, pero en muchos casos las soluciones de bajo coste son las adecuadas. Lo más importante es el compromiso para crear un jardín que incluya a todas las personas.

Tal compromiso queda patente en muchos artículos de la revista. El Jardín Australiano, que se inaugura en Mayo en el Royal Botanic Gardens de Cranbourne, se ha esforzado en implicar a la comunidad desde el inicio de la planificación y en su desarrollo. No siempre ha sido fácil, pero como dicen Sharon Willoughby y Chris Russell, es justamente esta relación a largo plazo la que permite tener un impacto efectivo en la comunidad y una puesta en valor de las plantas y conseguir jardines domésticos más sostenibles. Sin embargo no todos los jardines tienen el lujo de comenzar de



starting afresh. Many are well established and, over the years, have inadvertently developed an elitist image. Shedding this image to appeal to a broader range of audiences requires a complete analysis of garden visitors. One garden addressing this question is the Royal Botanic Garden Edinburgh, UK. Ian Darwin Edwards explains how the garden has employed a Community Events Coordinator to develop a programme of activities targeted specifically at individuals and communities who previously felt excluded from the garden. Ian believes that botanic gardens need to be active in broadening their audiences, as they 'will only make a real impact in tackling the major environmental issues of our time when the majority of people are convinced that their actions can make a difference'.

The Chicago Botanic Garden, on the other hand, has been working with its diverse neighbourhoods for 25 years. During this time the garden has helped more than 300 school and community groups transform communities with gardens and green spaces. Angela Mason and Patsy Benveniste describe their latest programme: Green Youth Farm. This programme serves predominately African American and Latino communities with low income rates and significant high-school drop out rates. The hands-on experiences in urban horticulture provide students with a strong sense of personal achievement and community pride. The UNAM Botanic Garden, in the heart of Mexico City, is also making its botanical knowledge available to a wider range of audiences. Edelmira

Néanmoins tous les jardins botaniques n'ont pas le loisir de faire du passé table rase. Nombreux sont ceux qui sont bien établis et qui ont involontairement développé au cours des années une image élitiste. Se débarrasser de cette image pour s'ouvrir à un public plus large nécessite une analyse complète des visiteurs du jardin. C'est ce qu'aborde le Jardin Botanique Royal d'Edimbourg. Ian Darwin Edwards explique comment le jardin a employé un Coordinateur des Evénements de la Commune pour développer un programme d'activités dont la cible était des individus ou des communautés qui se sentaient auparavant exclus du jardin. Ian considère que les jardins botaniques doivent s'appliquer à élargir leur audience, car «un impact réel sur les problèmes d'environnement majeurs de notre temps ne sera obtenu que lorsque la majorité des gens sera convaincue que l'action de chacun peut faire la différence.»

Le Jardin Botanique de Chicago, de son côté, travaille depuis 25 ans avec ses divers quartiers. Durant ces années, le jardin a aidé plus de 300 écoles et associations locales à transformer leur environnement en créant des jardins et des espaces verts. Angela Mason et Patsy Benveniste décrivent leur dernier programme : Green Youth Farm. Ce programme s'adresse principalement aux communautés afro-américaines et latino-américaines à revenus faibles et présentant un taux de déscolarisation important. Les expériences «main à la pâte» en horticulture urbaine, donnent aux étudiants un sentiment fort de satisfaction personnelle et une fierté communautaire.

cero. Muchos de los jardines bien establecidos han desarrollado sin querer una imagen elitista de sí mismos. Borrarla requiere una prospección de los visitantes para atraer al gran público como ha hecho el Royal Botanic Garden de Edimburgo en el RU. Ian Darwin Edwards explica cómo el jardín ha creado el puesto de Coordinador de Eventos Comunitarios para desarrollar un programa de actividades dirigidas específicamente a personas y grupos sociales que se sentían excluidos del jardín. Ian afirma que los jardines botánicos tienen que ser activos en ampliar el espectro de público, porque 'solo tendrán impacto real en los problemas ambientales de nuestro tiempo cuando una mayoría de la población esté convencida de que sus acciones marcarán la diferencia'.

El Chicago Botanic Garden, por otro lado, durante 25 años ha trabajado codo con codo con sus convecinos. Durante este tiempo el jardín ha ayudado a más de 300 grupos escolares y sociales en la transformación de jardines comunitarios y espacios verdes. Angela Mason y Patsy Benveniste describen su último programa: Green Youth Farm/ Granja Juvenil. Este programa sirve predominantemente a grupos Afroamericanos y Latinos de bajos ingresos y fracaso escolar importante. Los talleres de horticultura urbana estimulan la autoestima personal y el orgullo del colectivo. El Jardín Botánico de la UNAM, en el corazón de México DF, también consigue que sus conocimientos botánicos lleguen a más y diferentes personas. Edelmira Linares, Teodolinda Balcázar y Robert Bye describen los programas elaborados para rescatar el saber y la sabiduría en torno a los populares 'quelites': verduritas económicas y nutritivas, propias de México. Como resultado de los afanes del Jardín cambian las actitudes y ahora de nuevo se aprecian los deliciosos quelites ¡en muchos restaurantes mejicanos!

En Sudáfrica, donde se hablan oficialmente once lenguas y con turistas de todo el mundo, hacer accesible la biodiversidad es un interesante reto. John Roff coordina el campo de la interpretación para los

Linares, Teodolinda Balcázar and Robert Bye describe the programmes they have run to rescue knowledge and raise awareness about 'quelites': nutritious, cheap, green vegetables, endemic to Mexico. As a direct result of the garden's work, attitudes are changing and the culinary delights of quelites can now be found in many Mexican city restaurants!

In South Africa, where 11 official languages are spoken and where tourists visit from all over the world, making biodiversity knowledge accessible is an interesting challenge. John Roff coordinates interpretation for the eight national botanic gardens within the South African National Biodiversity Institute (SANBI). Through sharing his experiences, he offers valuable insights for designing multi-lingual signs.

In our final article, Cat Heale challenges us to look past 'audiences' in a generic way and think about providing access for individuals. In particular, she urges educators to communicate with teachers before bringing students on a visit, to ensure that the experiences they receive, match their ability. This may involve more preparation, but she argues this will result in an outcome that will be positive for all.

BGCI is also concerned about access and here I'd like to report some success. In September 2006 we are organising the 6th International Congress on Education in Botanic Gardens in collaboration with the University of Oxford Botanic Garden, UK. Thanks to determined fundraising efforts we are delighted to be offering 30 scholarships to delegates from developing countries. Our aim is to make the congress truly international and representative of our members. If you haven't registered yet, it's still not too late. We would very much like you to join us.

Le Jardin Botanique de l'UNAM, au cœur de la ville de Mexico, cherche également à rendre son savoir botanique accessible à un public plus large. Edelmira Linares, Teodolinda Balcázar et Robert Bye décrivent les programmes qu'ils ont lancé pour sauvegarder les savoirs et promouvoir les «quelites» : des légumes verts endémiques à Mexico, nutritifs et bon marché. Les résultats directs du travail du Jardin sont là : les attitudes ont changé et on peut trouver aujourd'hui de délicieux plats de «quelites» dans de nombreux restaurants de la ville de Mexico !

En Afrique du Sud où l'on parle 11 langues officielles et où viennent de nombreux touristes du monde entier, c'est un défi intéressant que d'offrir de façon accessible à tous des connaissances sur la biodiversité. John Roff coordonne l'interprétation dans les huit jardins botaniques du South African National Biodiversity Institute (SANBI). Il nous livre à travers son expérience une réflexion précieuse sur la conception de la signalétique multilingue.

Dans notre dernier article, Cat Heale nous incite à considérer «les publics» d'un point de vue générique, et à penser à l'accès pour l'individu. En particulier, elle invite les éducateurs à communiquer avec les professeurs avant qu'ils amènent leurs élèves en visite, pour s'assurer que l'expérience de visite qu'ils auront soit en adéquation avec leurs capacités. Ceci peut demander plus de préparation mais elle affirme que le résultat est positif pour tout le monde.

Le BGCI est également concerné par «l'accessibilité» et je voudrais ici vous faire part d'un certain succès. En septembre 2006 nous organisons le 6ème Congrès International sur l'Education dans les Jardins Botaniques en collaboration avec le Jardin Botanique de l'Université d'Oxford, (Royaume Uni). Grâce à nos efforts de collecte de fonds, nous sommes heureux de pouvoir offrir 30 bourses pour des délégués de pays en voie de développement. Notre objectif est de rendre ce congrès réellement international et représentatif de nos membres. Si vous n'êtes pas encore inscrits, il n'est pas trop tard; nous serions ravis que vous nous rejoigniez.

ocho jardines botánicos nacionales en el marco del Instituto de Biodiversidad Sudafricano (SANBI). Compartiendo sus experiencias, ofrece una valiosa perspectiva del diseño de los paneles multilingües.

En nuestro artículo final, Cat Heale nos desafía a apreciar de forma genérica el 'público' del pasado y sustituirlo por un pensamiento que permita proporcionar accesibilidad de forma individual. En particular, urge a los educadores de jardines a realmente comunicarse con los maestros antes de la visita con estudiantes para asegurar que la experiencia recibida sea del nivel correspondiente a sus capacidades y habilidades. Esto puede implicar más preparación pero asegura que el resultado es más efectivo y satisfactorio para todas las partes.

Al BGCI también le preocupa el acceso y me gustaría desde aquí comunicar un éxito. En Septiembre 2006 organizamos el 6º Congreso Internacional de Educación en Jardines Botánicos en colaboración con el Jardín Botánico de Oxford del RU. Gracias a los esfuerzos en la obtención de fondos nos congratula ofrecer 30 becas a los delegados de países en desarrollo. Nuestro objetivo es hacer el congreso verdaderamente internacional y representativo de nuestros socios. Si Vd. no se ha inscrito, todavía está a tiempo. Nos encantaría que se una con nosotros.

# Beyond the garden path – an introduction to access and inclusion for people of all abilities

## Introduction – the need for an inclusive approach

Demographic changes combined with increasing levels of awareness and expectations have led to a significant growth in legislation aimed at tackling discrimination and enabling access, for example the UK Disability Discrimination Acts 1995 and 2005, and the US Americans with Disabilities Act 1990. In Britain there are 8.5 million disabled people, which equates to one in seven of the population. Worldwide this figure stands at over one billion. By 2020, half the adult population of the UK will be over 50 years old, while 20% of the inhabitants of the United States and 25% of those of Japan will be over 65.

Legislation differs from country to country and it is beyond the possible scope of this article to review current legislation across the world. However, it is clearly important that all botanic gardens identify and comply with any relevant legislation in their country in order to meet minimum standards.

However, whether or not legislation exists, many will be keen to achieve 'best practice' and the authors advocate an inclusive approach to environment design which will help botanic gardens to consider and value people's diversity, remove unnecessary barriers and work towards equality of experience for all staff and visitors.

## An inclusive approach

Inclusive design is a way of designing products and environments so that they are useable and appealing to everyone regardless of age, ability or circumstance (Ormerod & Newton, 2005).

An inclusive environment will be:

- easily used by as many people as possible without undue effort,

special treatment or separation

- able to offer people the freedom to choose how they access and use it, and allow them to participate equally in all activities it may host
- able to embrace diversity and difference
- safe
- legible and predictable
- of high quality

(Disability Rights Commission, 2003)

**Summary** Against a backdrop of demographic changes and increasing levels of awareness and expectations, an inclusive approach to environment design is advocated to help botanic gardens provide access, learning and enjoyment to everyone. Inclusive design is a way of designing environments so that they are useable and appealing to everyone, regardless of age, ability or circumstance. There are many benefits in adopting this approach.

The access audit is used to identify and record existing barriers to access and takes a journey approach from pre-visit information, through the full visit to departure. Barriers identified can be removed by changing practices, providing auxiliary aids or making physical changes to the environment. It is important to involve users during this process.

Plants and flowers can offer sensory, beneficial and pleasurable experiences to many people and therefore botanic gardens are well placed to be able to create a fully inclusive environment offering equality of experience for all.

Below: Tree bark can provide a very interesting tactile experience for visitors





Above:  
Accessible  
transport  
system using  
rear tailgate  
ramp

Historically, disabled people have often felt patronised or dehumanised and experienced segregation rather than inclusion. The separate sensory garden designed specifically for visually impaired visitors is a common example of segregation (English Heritage, 2005). An inclusive approach might map out a sensory trail drawing on areas throughout the site to be enjoyed by all visitors.

There are many benefits in taking an inclusive approach, including: increased numbers of visitors, better quality of experience for everyone, greater staff satisfaction through improved service delivery, greater diversity of visitors and staff, effective use of resources in getting accessibility right first time, and; the promotion of a positive image regarding disability and inclusion issues.

### How to achieve an inclusive environment

An inclusive design strategy should consider:

- Internal spaces (including both the public and employee areas of buildings)
- External spaces (including all areas of the gardens and transport methods)
- Non-physical aspects (communication and consultation)

(Ormerod & Newton, 2005)

Inclusive design is not a fixed set of design criteria, but a constantly evolving philosophy (DRC, 2003). It is

best championed at the most senior level in the organisation by being part of the organisation's mission statement so that an inclusive approach becomes an integral part of the organisation's culture.

### The access audit

An access audit is a tool used to identify and record existing barriers to access. Fewer than 5% of disabled people in the UK are wheelchair users and it is a common mistake to focus an audit predominantly on wheelchair users' physical needs. Rather, the audit should consider the barriers experienced by the broad range of users including physical, sensory and intellectual barriers for everyone including older people, disabled people, carers and families with young children.

Barriers to a botanic garden site might include:

#### Organisational:

- Lack of staff or volunteers to support sites
- Negative or uninformed staff attitudes

#### Physical:

- Lack of parking and accessible transport to, or around, the site
- Lack of accessible signage, information, education and interpretation materials
- Narrow paths and entrances, loose or uneven path surfaces, steep slopes and long distances
- Lack of seating and shelter
- Lack of accessible toilets, baby feeding, and baby/adult changing facilities

#### Intellectual:

- Complex information
- Text-only information

#### Sensory:

- Limited options to touch, smell and hear plants
- Visitors not aware of sensory highlights
- Absence of visual and tactile warnings

#### Social and cultural:

- Publicity does not promote inclusivity
- Inaccessible website

#### Financial:

- Cost of travelling to and from a site
- Entrance fees

(adapted from English Heritage, 2005)

Of those listed above, the new auditor is often less familiar with intellectual and sensory barriers. Intellectual barriers can exclude many people such as those with dyslexia, a mental impairment or limited literacy skills. Easy-to-read information supported by clear illustrations can help many people. People with a sight or hearing impairment will often not have a fully inclusive experience when visiting a botanic garden. Volunteer or audio guides and the thoughtful positioning of heavily-scented and tactile plants close to the path (or building a path near existing mature trees and plants of sensory interest) will enrich the experience of visually-impaired visitors. Safety is always a priority and tactile warnings can help enormously. For example, tactile paving to indicate a road crossing point will help visually-impaired people arrive safely at the garden entrance. Providing a qualified sign language interpreter to accompany the garden guide for some scheduled tours will make the garden more inclusive for deaf visitors, and portable induction loops are now available the size of a clipboard and are beneficial for people who use hearing aids.

The access audit process should begin with clarification of the objectives and boundaries for the audit. A journey approach, examining all aspects relating to the environment from pre-visit access information, through the full visit experience, to the departure,



Right: Building a gently sloping ramp provides a more inclusive alternative to steps

provides a useful framework for ensuring that all aspects are included. A comprehensive audit should investigate:

1. External approaches to the site, including public transport and car parking
2. Entrance and reception areas
3. Horizontal circulation – e.g. do gates open freely, is there room to circulate?
4. Vertical circulation – e.g. how are slopes and changes in level dealt with?
5. Toilets
6. Auxiliary aids such as display systems and interactive exhibits
7. Information provision and signs
8. Lighting
9. Acoustics in any indoor spaces
10. Emergency exits and fire alarms
11. Policies and procedures
12. Management and staff attitudes and training

All facilities provided and services offered should be examined taking into account both visitor and staff experiences. It is often not possible to follow the journey through sequentially. For example, it is better to audit the café at a meal time when people are using it.

It is good practice, when identifying barriers during an audit, to start considering possible solutions for achieving inclusion at the same time while on site. For example, at the main entrance one of the objectives may be to make it accessible. The audit might identify a raised step and narrow gateway as physical barriers because they present a trip hazard, prevent entry for wheelchair users and make entry for parents with prams or pushchairs more difficult. A possible solution is to make physical adjustments to remove the step and enlarge the gateway so that the ground is level and the gate is wide enough to allow easy passage, whilst not becoming too heavy to open.

### Removing barriers

It is important to consider other possibilities as alternatives or supplements to physical adjustments when exploring how best to remove a barrier. In many cases a simple low-

cost solution can be found. The UK Disability Rights Commission (DRC) identifies 'reasonable adjustments' as falling into one of three main areas:

1. Change practices, policies and procedures
2. Provide auxiliary aids and services
3. Overcome a physical feature by removing the feature, or altering it, or avoiding it, or providing services by alternative methods.

(DRC, 2002)

Some examples relevant to botanic gardens in each area could include:

#### 1. Policies and procedures

- Develop an access strategy and appoint an access champion
- Put in place disability awareness training for staff and volunteers
- Offer reduced entrance fees for visitors and their companions where appropriate

#### 2. Auxiliary aids

- Make wheelchairs and self-drive mobility buggies available near the entrance for visitors to borrow
- Install hearing loops at the information desk

#### 3. Physical

- Provide ramps as an alternative to steps
- Repair uneven path surfaces
- Provide clear signage to help visitors to navigate the site

The only set of regulatory standards in the UK that address accessible design is the Building Regulations *Approved Document Part M – Access to and Use of Buildings* (Office of the Deputy Prime Minister, 2004). These standards provide some useful guidance helpful for botanic gardens, especially relating to specific areas such as car parking, ramps, gradients and toilet facilities. Other useful sources of best practice are listed at the end of this article.

### User involvement and consultation

An inclusive approach involves as many different users as possible in identifying barriers and ways of overcoming them. Methods of consultation can include inclusive



consultation meetings, site visits and surveys. It is important to try to involve a wide range of people early on in the process.

Many users, such as those with impairments, will have a great deal of experience and knowledge to bring to the process as they are likely to have experienced similar barriers elsewhere. Also, it is worthwhile contacting people who do not currently come to the site to find out why this is the case. Users, including carers, will also be able to suggest ways of enhancing provision, for example including horticultural therapy sessions could expand a botanic garden's education programme to a wider audience.

### Conclusion - the inclusive experience

It is worth reiterating that creating a fully inclusive environment goes beyond physical access requirements with the aim of enabling equality of experience for everyone.

Plants and flowers can offer some of the most sensory, beneficial and pleasurable experiences available to

Above: Visitors of all ages enjoy scented plants. They need to be positioned close to the path and can form part of a sensory trail through the garden

Right: Clearly-marked dedicated parking spaces, close to the entrance, enable disabled visitors to access the gardens more easily



many people. Through inclusive design botanic gardens are in the unique position of being able to harness their wealth of rich plant resources to create a powerful and fully inclusive environment, achieving their aims while offering true equality of experience for all.

### Useful websites (UK based)

www.accesscode.info  
 www.cae.org.uk  
 www.drc-gb.org  
 www.inclusive-design.it  
 www.openspace.eca.ac.uk  
 www.rnib.org.uk  
 www.rnid.org.uk  
 www.sensorytrust.org.uk  
 www.thrive.org.uk

For more useful information on access – please see the resources section

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Right: Paths with even non-slip surfaces, free from overhanging plants, reduce hazards. Visitors will enjoy the gentle sounds created when the bamboos bordering the path blow in the breeze

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### Résumé

Sur fond de changements démographiques et de renforcement des prises de consciences et des attentes, une approche complète de l'étude de l'environnement est préconisée, pour aider les Jardins Botaniques à proposer l'accès, l'apprentissage et le plaisir pour tous.

L'étude complète est une méthode (permettant de profiler des environnements de manière pratique et attractive pour tous, en dépit de l'âge des visiteurs, de leurs capacités ou des circonstances. Cette approche génère de nombreux avantages.

Un audit de l'accès est réalisé pour identifier et relever les difficultés existantes concernant les systèmes d'accès, en adoptant une approche du parcours depuis la pré-visite, à la visite proprement dite et au moment du départ. Les obstacles identifiés peuvent être éliminés en changeant certaines pratiques, en introduisant des aides auxiliaires ou en modifiant physiquement l'environnement. Il est important d'impliquer et d'intégrer les utilisateurs durant ce processus.

Les plantes et les fleurs peuvent apporter des expériences plaisantes, enrichissantes et sensorielles à nombre



de visiteurs. Par conséquent les Jardins Botaniques sont bien placés pour créer un environnement complet, permettant à tous de vivre une expérience sur le même pied d'égalité.

### Resumen

Contrario a tendencias de cambios demográficos e incremento en los niveles de conciencia y expectativas, una aproximación del diseño integral ambiental esta dedicado a ayudar a proporcionar en el jardín botánico acceso, aprendizaje y entretenimiento para todos. Diseño integral es una forma de diseñar ambientes de manera que estos sean útiles y atractivos, independientemente de la edad, habilidad o circunstancia, y hay muchos beneficios cuando este enfoque se adopta.

La asistencia auditada es utilizada para identificar y registrar barreras existentes, para acceder y tener una idea de la jornada a partir de la informacion pre-visita, durante la visita completa y la salida. Las barreras identificadas pueden ser removidas cambiando las prácticas, proporcionando ayuda adicional o haciendo cambios físicos al ambiente en particular. Es importante involucrar a los usuarios durante este proceso.

Las plantas y flores pueden ofrecer experiencias sensoriales, benéficas y placenteras para mucha gente y por lo tanto los jardines botánicos estan bien posicionados para crear un ambiente totalmente integrado al ambiente, ofreciendo una experiencia equitativa para todos.

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# Planning with the community

## - problems and solutions

**Summary** The Australian Garden is an exciting new botanic garden, which opens in May 2006, at the Royal Botanic Gardens Cranbourne. The Australian Garden will be a place where visitors can immerse themselves in the colours and textures of Australian landscapes. It will be a garden that showcases the unique character and beauty of Australian plants in new and surprising ways. In opening this new garden and creating a suite of public programmes our aim is to explore the connections that exist between landscape, culture, people and plants. We want to inspire visitors to view Australian plants in a new light and to convert that inspiration into the use, enjoyment and conservation of Australian plants back in their home gardens.

Creating a new botanic garden is obviously an enormous undertaking - quite literally a once in a lifetime event for most of us involved in this project. The opportunities the Australian Garden provides to us, for engaging our visitors and wider community, are really exciting. In order to capitalise on this amazing new resource, and to help match our vision with the reality of our resources, we have undertaken a strategic planning process to develop a master plan for community engagement for the Australian Garden. It is envisaged that by creating a master plan we make the best use of our resources and create the most impact within our community.

### Background

The Royal Botanic Gardens Cranbourne (RBGC) is a division of the Royal Botanic Gardens Melbourne and is dedicated to the research and conservation of, and public education about, Australian plants and ecosystems. The Australian Garden will be located within the Cranbourne gardens in a 26-hectare site, which is

being reclaimed from a former sand mine. The RBGC is located 50 km from the centre of Melbourne in one of Australia's fastest growing outer urban regions. In total, the RBGC has an area of 363 hectares, two thirds of which is covered with remnant vegetation of high conservation value. We expect that over the next 20 years the agricultural land adjacent to the RBGC site will become fully taken up



by housing development. It is easy to see that in these circumstances the green space of the RBGC and Australian Garden will be an increasingly valuable community resource.

While modern Australia shares the same passionate gardening tradition as the United Kingdom, it would be fair to say that we Australians have not yet fully embraced our native flora for use in the home garden (Elliot, 2002). This has a number of potentially important consequences when we consider that gardeners are "one of the most important groups of land managers in this country, since between us we manage more than 50% of all urban land in Australia, that is, the land that carries 80% of the population" (Seddan, 1997).

The principle that home gardens and gardeners could benefit through the use of Australian native plants is founded in the following ideas. There are many Australian plants that are adapted to dry conditions. With a continuing drought in much of eastern

Above: Friend of the RBGC and volunteer, Max Officer, leads one of the first tours through the Australian Garden

Australia, the need to conserve water at home is increasingly important. Some exotic species traditionally used in Australian home gardens have escaped into bushland and have become serious environmental weeds. Using Australian plants at home in the right ways can contribute to the conservation of local biodiversity. Encouraging the use of Australian native plants in private and public gardens can also help build on the sense of place, what is unique about Australian plants, landscapes and cultures.

We hope that the Australian Garden will have a powerful influence on the way in which our local community views and uses Australian plants. We hope that this interest in Australian plants can foster a greater appreciation and protection of the remnant collections at RBGC and elsewhere and create more sustainable home gardens.

### The master planning process

#### Getting started - researching

To begin our planning process, we looked for examples of how other similar organisations had planned their programmes. Three resources that our team found particularly useful has been the BGCI website notes on starting an education programme, John A. Veverka's textbook 'Interpretive Master

Planning' and the web publication 'A Sense of Place – An Interpretive Planning Handbook' edited by James Carter. These references were very useful in helping us to develop a framework for our planning.

Early in the process we decided to follow a thematic planning approach to master planning. This approach required early definition of the key messages that we wanted to convey to our audience, which had the benefit of acting as a filter to the myriad of stories and information that we potentially could provide as part of the visitor experience. At the organisational level we are also working to create a whole-of-organisation approach to education. By focusing and co-ordinating all our communication outside the organisation around themes we hope to better achieve the objectives of our engagement with our community.

#### Who should be involved?

We felt that involving members of our local community in the planning process would be a good way to foster a community sense of ownership of the Australian Garden. One of the first ways that we tried to involve our community was to invite them to attend focus group meetings, with the aim of receiving their perspectives on what was important in programmes

they might attend. Invitations went out to both teachers and interested members of the public to attend either a community or schools forum. This approach was spectacularly unsuccessful – no one came! It seems that so early in the project when awareness of the Australian Garden was low it was difficult for people to see why they might want to become involved.

The approach that we are now taking is to create a number of community partnerships – that is, long-term relationships with a small number of local schools and particular segments of our community, such as our local Indigenous community. It is envisaged that through these long-term relationships we might create ongoing input to our programme development. For example, we have assisted our local secondary school in the development of their school grounds master plan. In return, Cranbourne Secondary College teachers will review the programmes that we develop for secondary school children and Cranbourne College students will road test our programmes before opening.

In order to engage with our local indigenous community we have secured external funding to employ an Aboriginal Community Liaison Officer who will work to insure that

Right:  
Escarpment wall  
sculpture within  
the newly  
constructed  
rockpool  
waterway



interpretation and education in relation to indigenous culture is authentic and appropriate. This position will also ensure that the indigenous community has access to the Australian Garden and future opportunities for employment and cultural self-expression.

In short, involving the community in a meaningful way in our planning process has taken much more time and resources than was initially planned. A much more successful approach has been to involve the community in helping to plant out the Australian Garden. In hindsight, this was probably a more realistic place to start, and has provided us with a rich source of informal input into programme development.

At another more formal level we are in the process of establishing a Schools Education Service Reference Group for the whole of the organisation, covering both the Melbourne and Cranbourne sites. This reference group will input expert and academic expertise into the development of schools' education programmes. Engagement of the community at this level will help to ensure that our programmes are up-to-date with the very best research on student learning but also ensure that our programmes are keeping pace with government directions in education.

#### **Who is our audience now and into the future?**

"Who are we planning education programs for?" has been one of the most important questions in this planning process so far. If we want to create real change in our local community, especially in how people garden at home, it is obvious that concentrating all our effort on our schools audience will not create change very quickly. Delivering schools education is an important part of our role as a botanic garden, however if we have only limited resources it is important that we continually review where and how that effort is applied to achieve the most impact.

Visitor research at RBG Cranbourne and local demographic information suggests that families will be one of our largest visitor segments in the

Australian Garden. With this audience in mind and our goal to change the way that people garden at home we know that we need to create programmes that will inspire our family audience to use Australian plants at home.

In better defining target audiences, we have also had the benefit of identifying communication opportunities for the whole of the organisation. As a diverse organisation covering multiple sites, it is easy for a situation to arise where we send out a mixed range of messages to the community. While they may all be worthwhile and accord with the organisation's charter, it is likely that the greater the diversity of messages, the more diluted the result. Undertaking a thematic master planning process has allowed us to integrate and co-ordinate the engagement effort right across the organisation, which we are confident will assist in the achievement of a more effectively engaged community.

#### **In what ways do people learn – what sort of education programs should we develop?**

Now that we know who we are communicating with and what changes we are seeking to create, we have begun to research how our target audiences learn in a botanic garden setting, as this will impact on the kinds of programmes we create. The way we have always done things may not always be the most effective way and research into how people learn is always moving on. There are a number of resources we have found very useful during this phase of our planning. The CD Rom created by the American Association of Botanical Gardens and Arboreta, *Reaching Out to the Garden Visitor*, contains some very useful information on planning programmes in botanic gardens. There is also research undertaken by organisations in Australia such as museums, which look at how groups such as families or school children learn in cultural settings (David, 2005).

#### **Count down to opening**

The Australian Garden opens in May 2006 and we are confident we will be able to offer a range of opportunities to our visitors. This is due to the fact that



we have developed a Master Plan that has incorporated current thinking on the way people learn and developed specific themes for target audiences. We look forward to those first evaluations and the feedback on our programmes but most importantly we look forward to the opening day when we first see visitors moving through, using and enjoying the Australian Garden.

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Above: Involving the community in planting out the Australian Garden

Below and right:  
The Australian  
Garden will be a  
place where  
visitors can  
immerse  
themselves in  
the colours and  
textures of  
Australian  
landscapes



- ➔ Arnstein, S., 1969. The Ladder of citizen participation, *Journal of the Institute of American Planners*, 35,4, 216-24. Can be downloaded on the web from many different sites including [www.partnerships.org.uk/part/am](http://www.partnerships.org.uk/part/am) also of interest is the UNICEF Ladder of Children's Participation based on this paper. The Ladder is a useful tool for thinking about what kind of community participation you are looking to create.
- ➔ The Victoria Government has just released a new blueprint for education, which will alter the way in which teachers, and schools deliver the Victorian Schools Curriculum. Of interest to cultural organisations in Victoria the blueprint is seeking to create opportunities for a greater depth of experience for school children. Institutions such as botanic gardens are well placed to meet the objectives of the blueprint because of our ability to offer student centre, immersion experiences in the natural environment. For more information see [www.vels.vcaa.vic.edu.au/links/victorian\\_links](http://www.vels.vcaa.vic.edu.au/links/victorian_links)
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### Résumé

Le Jardin Australien est un nouveau jardin botanique, qui sera ouvert en mai 2006 au jardin botanique royal de Cranbourne. Notre but est de créer une suite de programmes publics qui explorent les relations qui existent entre le paysage, la culture, les peuples et les plantes. Nous voulons offrir aux visiteurs l'occasion de voir les plantes australiennes sous un autre jour et faire en sorte que cette inspiration se traduise ensuite concrètement dans l'utilisation, le plaisir de cultiver et de conserver des plantes australiennes lorsqu'ils sont de retour dans leurs propres jardins. Les opportunités fournies par le Jardin Australien pour impliquer nos visiteurs, et plus largement la communauté, sont réellement excitantes. Pour capitaliser ces ressources et nous aider à avoir une vision juste de la réalité de nos ressources, nous entreprenons un processus de planification stratégique ordonné afin de réaliser un plan détaillé pour favoriser un engagement communautaire pour le Jardin Australien. Nous prévoyons que, par la création de ce plan détaillé, nous ferons une meilleure utilisation de nos ressources et nous aurons plus d'impact auprès de nos communautés.

### Resumen

El Jardín Botánico Australiano es un nuevo jardín botánico, que abrirá sus puertas en Mayo del 2006 en el Real Jardín Botánico de Cranbourne. Nuestra intención es crear un programa público atractivo que explore la conexión que existe entre el paisaje, la cultura, la gente y las plantas. Nosotros queremos inspirar al visitante a ver las plantas de Australia de una manera nueva y transformar esa inspiración para el uso, disfrute y conservación de las plantas australianas en el propio jardín de tu casa. Las oportunidades que el Jardín Australiano provee para captar a nuestros visitantes y una comunidad mas amplia son realmente excitantes. Con el propósito de capitalizar estos recursos, y ayudar a compatilizar nuestra visión con la realidad de nuestros recursos, estamos desarrollando un proceso de planeamiento estratégico para desarrollar un Plan Maestro para la participación de la comunidad en el Jardín Australiano. Creemos que creando el Plan Maestro hacemos el mejor uso de nuestros recursos y creamos el mayor impacto dentro de nuestra comunidad.

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# Social for all Integration

**Summary** Social inclusion and environmental justice are high on the political agenda in the newly devolved nation of Scotland. Response from Edinburgh focus groups shows that people perceive the Royal Botanic Garden as 'too stuffy and middle-classed' and this is a barrier preventing many people, including parents with young families, from visiting. In order to encourage a broader social spectrum of visitors we have embarked upon a programme of audience development. This combines focused visitor research with a wide range of activities designed to appeal to people of all ages and backgrounds. Storytelling, in various guises, practical art activities and outreach projects that go into poorer or remote communities have all been used successfully to reach new audiences and make the Garden more inclusive. Giving people, especially children, the opportunity to hands-on experience with plants, soil and natural materials, has proved especially important in a world increasingly dominated by electronic media.

During the latter part of the nineteenth century a battle raged in Edinburgh over whether the Royal Botanic Garden Edinburgh (RBGE) should open on Sundays. On one side was the Sabbath Alliance, Presbyterians who believed in keeping activities on Sunday, the Lord's Day, limited to those directly related to religious observance. Their opponents were an equally determined group representing the 'working men of Edinburgh', who toiled six days a week and were only able to visit the Garden on Sundays. For more than 25 years they fought over the issue with petitions and counter-petitions signed by ten of thousands of Edinburgh folk. The matter was even debated in Parliament

in Westminster, London. Sunday opening was finally conceded in April 1889 so that 'working men and their families were best able to take advantage of the humanising, innocent and elevating pleasure of strolling through a Botanic Garden' (Scotsman newspaper). This was considered a great victory for the working classes and possibly the first direct example of a social inclusion policy being introduced in Scotland. During the first four Sundays the Garden remained open over 27,000 ordinary people took advantage of the new privilege. Sunday remains our most popular day for family visits but how are we doing, more than 100 years later, at providing access for people of all social classes?

Recent research conducted by market research specialists Ballantyne MacKay and Scotinform suggests that RBGE audiences remain essentially middleclass and that the perception of the Garden among people in some socially deprived parts of the city is that 'it is not for people like us'. However, the Scottish Parliament (our principle funders) recently produced Choosing Our Future: Scotland's Sustainable Development Strategy, with social and environmental justice high on their list of priorities for the newly devolved nation. Clearly it is time for a change and RBGE is actively seeking ways of casting off its stuffy, middleclass image and becoming more socially inclusive by appealing to a broader range of audiences.

Visitor surveys confirm that 84% of our visitors come from socio-economic groups A, B and C1 – the professional or white collar jobs – with only 16% belonging to socio-economic groups C2, D and E. This statistic confirms what we have felt for some time, the Garden only attracts a subset of people from the surrounding catchment area, with the wealthier communities much better represented, especially among the regular visitors, than those from poorer areas. The same middle class bias is reflected in the Friends of the Garden and among our volunteers. School visits show a broader spectrum of social strata although there is still an over-representation from the Edinburgh private schools who are eager to make good use of the excellent facilities on offer.

Right: Hands-on activities for students during the Edinburgh International Science Festival



RBGE actually sits on the boundary between the middleclass districts of New Town and Stockbridge to the south and local government housing schemes, officially categorised as social inclusion partnership (SIP) areas, to the north. Both districts are equally accessible by foot or by public transport but the majority of people who visit the Garden on a regular basis and attend events come from the more affluent areas. To try and get a clearer picture of why people from the SIP areas didn't visit the Garden we asked Scotinform to carry out a number of focus groups with non-visitors, including those with and without small children. It soon became clear from these groups that there was a common perception that the Garden was not somewhere they would feel comfortable bringing children, fearing they would be watched and that they would have to be on their best behaviour at all times. A few based this on experiences they had had themselves as children during an era when some of our security staff could be considered officious at times. However, when they saw images of

recent events, including festival shows, people relaxing on the lawns and hands-on activities for children they became much more interested in what we had to offer. At the conclusion of the focus groups some non-visitors, especially young parents, were responding positively to our ambitious plans for developing visitor facilities and events and had universally agreed to give visiting the Garden a try.

Elsewhere with Scotland, Scottish Natural Heritage has also commissioned work to determine a baseline to attitudes to biodiversity. The initial research showed the population could be divided into three groups with respect to their concern and involvement in natural heritage issues. These were the 'carers', 'carers and doers' and 'non-carers and non-doers'. Age, education and socio-economic background seemed to be the principle factors determining which group people were most likely to be found in. The people who were neither concerned nor involved with environmental issues tended to have a younger profile, higher level of

unemployment and lower proportion of the ABC1 demographic. This was important evidence to support our campaign to broaden audiences in order to get our message across to people who are currently inactive and apparently unconcerned about biodiversity.

These unsettling results from research have encouraged us to embark on a programme of social inclusion. With financial support from the Royal Bank of Scotland we have recently employed our first Community Events Coordinator who has been given the task of broadening the audiences visiting the Garden and attending events. In the short time she has been part of RBGE she has already made links with different communities within reach of Garden and is seeking their ideas on ways in which we can meet particular needs. A programme of activities targeted specifically at individuals and communities who previously felt excluded from events needs to be built on the experience of previously successful projects. For RBGE there have been four areas that

have contributed in a significant way to broadening and extending audiences: storytelling, hands-on activities (including practical gardening), art projects and outreach work. A brief summary of successes in these four areas is given below. In the future we hope to expand and develop these areas to widen our appeal to people who currently don't visit the Garden and do not get involved in action for the environment.

Storytelling has proved a particularly powerful means of engaging with audiences, especially families. The Garden's storytelling programme uses professional storytellers and trained volunteers and has worked in partnership with others including the Scottish Storytelling Centre, who run performance and training programmes, and the charity Children First, who have used storytelling and story-making successfully with vulnerable children from areas of social deprivation. The wonderful evocative settings provided by the Garden can help stimulate the imagination. But the most exciting aspect of this project is the way that the 'make believe' aspect of working with stories and the 'safe but open' environment of the Garden, often combine to help young people open up and share their own personal experiences good and bad.

In many traditional societies storytelling is frequently supported by practical activities forming critical elements in indigenous education of the young. Hands-on activities involving plants or other natural materials (wood, wool, clay, etc) have also been important aspects of our informal education programme for a number of years. Long before we had encountered the term Nature Deficit Disorder we had discovered how direct contact with plants and small animals in our children's garden project can have a beneficial effect on children with social or behavioural problems. Because numbers are small there are few statistics to back this up but anecdotal evidence has accumulated that suggests regular exposure to nature and direct involvement in nurturing plants reduces incidents of tantrums or aggressive behaviour. Offering any kind of direct nature experience is becoming an increasing challenge in a

world where concerns over children's safety are continually increasing. However, the 'safe but open' environment of botanic gardens, already mentioned, has proved to be important in this respect.

In addition to its scientific displays RBGE is home to an art gallery with an international reputation and receives an annual grant from the Scottish Arts Council for displaying and interpreting art. Interestingly SAC sees the location of the gallery in the centre of a public garden as key to its policy of introducing contemporary art to new audiences, in this case families or adults who visit gardens but would not normally step inside an art exhibition. RBGE also feels the presence of the gallery increases its audiences, especially young adults in the 16 – 30 age range who are generally under-represented among garden visitors. The gallery also provides opportunities to carry out art projects in response to exhibitions and target these at particular sectors of the community. A recent exhibition by Alan Farquhar that included popular music and teenage fashion icons among the exhibits was used as a stimulus for workshops with young gay men and lesbians who feel excluded from mainstream society. The work these young people produced was considered by the Curator sufficiently creative and original to be displayed in the education space alongside work by the artist. This was a considerable source of pride to the teenagers and their families. In this particular case the connection with the natural environment was not strong but in other exhibition-related art workshops the Garden has provided an important inspiration or unique backdrop for work that has been produced.

Going out to the community, rather than groups visiting the Garden, loses the crucial aspect of the 'safe but open' space which has been critical in the success of much of the above. However, outreach programmes always prove popular and extend activity in to new areas, including remote rural locations as well as poorer parts of Scottish cities. The best result would be a follow up visit by the school or community group to the Garden and this does often happen. In remote

areas of Scotland, like the Hebrides and the Northern Isle, a visit by an outreach team can bring new ideas or experiences, taking a show about woods and forests to the treeless islands of Shetland for example. Outreach programmes provide us with new insights and we know not to assume that poverty is an exclusively urban problem or that children growing up in the county necessarily have a better understanding of their natural environment than those growing up in towns.

Are the problems and solutions I have offered above only of relevance to the UK? After all we all know the British are obsessed by the issue of class! However, my experience of visiting or working in botanic gardens in other parts of the world – India, Australia the United States – suggests that the need to broaden the social spectrum of visitors, especially those

Below: Art projects appeal to a broad range of audiences



Right: Storytelling is a particularly powerful means of engaging audiences

who engage in activities and events is widespread. The majority of botanic gardens are urban and it is not uncommon for them to be situated adjacent to socially deprived communities who feel no sense of ownership or involvement. What's more botanic gardens could sometimes be accused of wanting to maintain this elitist air, with hidden fears about what would happen to their manicured landscapes and precious collections if they became too popular. A good example is the slowness with which many botanic gardens have been prepared to adopt local names on labels, persisting with the exclusive use of scientific names in arcane languages derived from, Latin and Ancient Greek, generally associated with the privileged, privately educated classes.

However, a change is occurring and I believe it is led by a general appreciation among botanic garden people that we will only make a real impact in tackling the major environmental issues of our time when the majority of people are convinced that their actions can make a difference. This majority means peasant farmers in the fields and the workers in factories, as well as the well-educated middle classes in their offices. Botanic gardens need to be active in broadening audiences, to include people from all levels of society, not simply to comply with government policies on social inclusion but because we all share environmental responsibility for the planet we live on. Maybe it is not simply that the meek will inherit the Earth but that we will all need to drop some of our arrogance if we want an Earth for future generations to inherit.

## Résumé

L'intégration sociale et la justice environnementale sont des priorités politiques pour la nation écossaise, nouvellement dotée de pouvoirs décentralisés. A Edimbourg, les travaux des groupes de réflexion ont montré que les gens perçoivent le Royal Botanic Garden comme « ennuyeux et bourgeois ». Cette image est un obstacle à la venue du public en particulier des familles avec de jeunes enfants. Pour encourager des visiteurs



de tous milieux sociaux, nous avons entrepris un projet de développement du public. Celui-ci associe des études spécifiques sur les visiteurs et diverses activités conçues pour plaire à des personnes de tout âge et de toute origine. Des contes, sous différentes formes, des activités artistiques et pratiques et des programmèmes sociaux en direction des plus démunis et des plus isolés ont été utilisés avec succès pour toucher un nouveau public et rendre le jardin accessible à tous.

Il est d'autant plus important de permettre aux gens et surtout aux enfants de vivre des expériences directes avec les plantes, le sol et les éléments naturels que notre monde est de plus en plus dominé par les médias électroniques.

## Resumen

Integración social y justicia ambiental están incluidas como prioridades en la agenda política de la desarrollada nación de Escocia. Respuesta de grupos particulares demuestra que la gente percibe el jardín botánico real como 'demasiado encerrado y para clase media' y esta es una barrera para que mucha gente incluyendo padres con familias jóvenes lo visite. Con el fin de promover un amplio espectro de

visitantes nos hemos embarcado en un programa de desarrollo de audiencia. Esto combina la visita enfocada a la búsqueda con un amplio rango de actividades y orígenes.

Lectura de historias en varios temas, actividades artísticas prácticas y proyectos que van desde pobres y remotas comunidades han sido usados exitosamente para alcanzar nuevas audiencias y hacer el jardín más completo. Proporcionando a la gente, especialmente a niños, la oportunidad de tener práctica experiencia con las plantas, el suelo y materiales naturales, ha probado ser especialmente importante en un mundo que está siendo dominado por medios electrónicos.

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# Growing **young people** from the ground up

**Summary** Nature, gardens and growing things for pleasure are unfamiliar concepts that hold very little attraction for young people growing up in the North Lawndale community of Chicago. By providing students with hands on experiences in the practice of urban horticulture, the Chicago Botanic Garden's Green Youth Farm has introduced young people to a whole undiscovered dimension of physical space and activity that is possible within their community; of relationships with individuals they otherwise would never meet or know; of possibilities for personal achievement that had been laying dormant like a seed in winter. In turn the Green Youth Farm students have energized and inspired adults and institutions within North Lawndale and captivated the imagination of media, politicians, and philanthropists.

## Introduction

Nature, gardens and growing things for pleasure are unfamiliar concepts that hold very little attraction for young people growing up in the North Lawndale community of Chicago. When asked what would be most challenging about working on an urban farming project, one prospective participant replied "I don't really like chickens, and I don't know how to milk a cow". There were lots of misconceptions to clear up and basic information to communicate. Through providing students with work experiences in urban horticulture,

Green Youth Farm, run by Chicago Botanic Garden, has opened up new dimensions for young practitioners to explore within their community: relationships with individuals they would otherwise never meet or know and possibilities for personal achievement. In turn Green Youth Farm students have energized and inspired adults and institutions

within North Lawndale and captivated the imagination of media, politicians, and philanthropists.

The Chicago Botanic Garden has a long tradition of supporting community and school gardens throughout the Chicago area. In its 25-year history of working in Chicago's diverse neighbourhoods, the Garden's community gardening programme has



Left: Students develop a sense of empowerment and community pride through sustainable gardening. Here, they are receiving their instructions for the day's activities

helped more than 300 school and community groups transform their localities with gardens and green spaces. The Garden's education division uses many tools to accomplish its outreach programme, including on-site summer education/work experiences for city high school students, school field trips, teacher workshops, and more. The physical

Right: Students working on succession plantings at the North Chicago site

existence of the Green Youth Farm is also thanks to the support of the Community Gardening Department within CBG.

While the promotion of plant awareness and appreciation has remained the core goal of the Chicago Botanic Garden's community gardening programmes, the means to achieving this mission have evolved as funders and community needs have changed. Lessons learned from earlier programmes, managed by the Community Gardening Department, have also helped to mold more relevant and responsive versions of those programmes.

The Green Youth Farm programme represents the newest generation of programming. It began as a large field



Right: Chef Ricky Moore and students Dexter Sullivan and Teresa King prepare a meal for the Green Youth Farm open House event



in a north suburban forest preserve in the community of Waukegan where 12 students from a local high school were recruited to maintain and harvest crops. This was the core of the 'green careers' apprenticeship. Their experience helped shape the evolution of the programme. Today there are two sites. In the 2005 growing season, 35 young people farmed a total of one and a half acres and produced more than 10 tons of sustainably grown vegetables, two tons of which were donated to a local food pantry.

While the two programme sites are physically very different, the communities they serve have striking similarities: low-income rates of 50%-98%, a predominant minority

population of African Americans 70%-99.7% and Latinos, and high school drop out rates exceeding 27%. Programme participants are recruited through a fairly rigorous application and interview process. Some of them struggle to articulate the reasons why they feel attracted to the programme. When asked why they are applying to be part of the programme, most of the answers are a version of "because it is something different". The students are very sceptical in the beginning, but quickly develop a 'can do' attitude. In the first couple of weeks they are asked to try many new tasks and there are a lot of 'I can't do that'. By the end of the summer, they are proudly giving tours of the farm, talking about different varieties of crops and even

offering tastes to wary visitors. They can also describe many of the different growing techniques used. They learn about crop sciences, but more importantly, they learn about themselves. Dexter, a first year participant, was quoted as saying "I thought Angie was crazy when she told us we were going to grow food here. This lot used to be an old laundromat." He also comments "The most challenging thing for me was the planting, but we worked hard and now look, our garden is amazing!"

An interdisciplinary approach is used to make the most of the diverse interests, learning styles, and talents of the students. The various cooking classes, art workshops, music sessions and leadership development programmes all offer opportunities for the students to shine in some aspect. The culinary component has added a new dimension. Both the young men and women of the programme have developed an appreciation of where their food comes from and what goes into the food they are eating. Most importantly, they have found a way to help those less fortunate than themselves. Their work with food has given them a greater awareness of economic issues and driven them to a much greater awareness of the injustice of food policies. Teresa, a first year participant, has teamed up with three others in an effort to get better, healthier meals served at the local

shelter for the homeless; Kenya wants to focus product development on organic baby food; Courtney has joined the campaign to help reform school lunches; and Taverous has become an activist in the North Lawndale community for the Green Youth Farm. Students are also developing a business plan with the intention of providing produce shares to the local senior-assisted living homes. They have become philanthropists in their own way. The Chicago Botanic Garden has provided these youth with a chance to develop a sense of empowerment and community pride through sustainable gardening.

The community gardening department is fortunate to have relationships with funders who recognize the importance of community outreach by large museums and botanic gardens. The Green Youth Farm programme is made possible by generous contributions from a diverse group of philanthropic organizations. The Steans Family Foundation, Grace A. Bersted Foundation and Elizabeth Morse Genius Charitable Trust provide private foundation support, corporate funding comes from Kraft Foods, Inc. and Harris Bank Foundation, and the Institute of Museum and Library Services provides governmental support. The Green Youth Farm is supported institutionally through fundraising efforts by the Guild of the Chicago Botanic Garden.



## Résumé

Pour les adolescents qui grandissent dans le quartier de North Lawndale à Chicago, la nature, les jardins et le principe de faire pousser des choses pour le plaisir sont des idées inhabituelles et peu attrayantes. En offrant aux étudiants l'occasion d'avoir une expérience pratique en horticulture urbaine, la ferme Green Youth Farm du Jardin Botanique de Chicago a permis aux jeunes de pénétrer dans une dimension jusqu'alors inconnue de lieux concrets et d'activités réalisables au sein de leur quartier, de relations avec des individus qu'ils n'auraient jamais connus autrement, et d'opportunités de réveiller leurs capacités personnelles en dormance comme des graines en hiver. A leur tour, les étudiants de Green Youth Farm ont stimulé et inspiré les adultes et les institutions au sein du quartier de North Lawndale et ont captivé l'imagination des médias, des politiques et des philanthropes.

## Resumen

Para los jóvenes creciendo en la comunidad de North Lawndale en Chicago, naturaleza, jardines y la idea de cultivar cosas por placer son ideas no familiares y con muy poco atractivo. El proporcionar a los estudiantes experiencias prácticas en horticultura urbana en la Granja verde juvenil del

Jardin Botánico de Chicago ha introducido la gente joven a una nueva dimensión de espacio físico y actividad que es posible dentro de su comunidad; de relaciones con individuos que de otra manera nunca se encontrarían o conocerían; de posibilidades y alcance de logros personales que han estado dormidos como semillas en el invierno. La granja verde juvenil ha activado e inspirado adultos e instituciones en North Lawndale y cautivado la imaginación de media, políticos y filántropos.

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Left: The Green Youth Farm project demonstrates that even the most unpromising urban landscape can be transformed

Far left: Dexter Sullivan and Paris Wright hold up a picture to show how the site was before the accomplishments of the Green Youth Farm project

# Las verduras mexicanas silvestres los 'quelites'

... Antiguos compañeros hoy casi olvidados

**Resumen** Se analiza la importancia histórica que han tenido las verduras tiernas comestibles conocidas en México como **quelites** (del término náhuatl quiltilt) que en general son plantas más nutritivas y de menor precio.

Se documentó el olvido de los quelites en las ciudades debido a:  
1) Dificil accesibilidad; 2) Desconocimiento de las formas de preparación;  
3) Poco tiempo del que disponen actualmente las amas de casa para cocinar y 4) Considerarlos comida de un estrato social bajo.  
Después de haber analizado esta problemática, se diseñó un proyecto educativo a largo plazo con el apoyo de múltiples instituciones: gubernamentales, educativas y ONG, con los objetivos de mitigar el desconocimiento de los quelites por nuestros compatriotas, rescatarlos y promoverlos, para así beneficiar a la nutrición de los mexicanos. Hasta la fecha después de 16 años varios grupos han incluido en sus programas el rescate del conocimiento y el uso de los quelites y en los restaurantes ciudadanos se pueden degustar platillos elaborados con quelites.

a 1590 a documentar: la Historia de las Cosas de la Nueva España (1979); otro ejemplo importante es la obra de Francisco Hernández, el protomédico del Rey Felipe II de España, quien realizó una estancia en Nueva España de 1570 a 1577 documentando su Historia Natural (1959); y las Relaciones Geográficas realizadas a partir de 1577, donde se asentaron 50 preguntas, entre las que incluyen varias relacionadas con las plantas. Estas debían ser contestadas por personas prominentes y de confianza

Derecho:  
Exposición de  
plantas  
comestibles  
dirigidas a  
estudiantes  
de nivel  
bachillerato.  
Organizada por  
el Profesor  
Daniel Nieto,  
alumno de los  
cursos de  
actualización en  
el Jardín  
Botánico

## Introducción

Las verduras tiernas comestibles conocidas en México como quelites (del término náhuatl quiltilt) han sido parte significativa de la dieta del mexicano desde la época prehispánica. Ejemplos importantes que evidenciaron su uso son los trabajos: del Fraile franciscano Bernardino de Sahagún, quien dedicó su vida a lo largo de 59 años de 1529



en las Indias pertenecientes a los dominios españoles. La pregunta No. 24 menciona a los granos y semillas, y otras hortalizas y verduras, que sirven o han servido de sustento a los naturales (Acuña, 1986). Solamente la obra de Sahagún documentó 56 verduras tiernas comestibles agrupadas en el capítulo dedicado a quelites.

Ante esta riqueza cultural documentada en nuestro territorio desde el siglo XVI y siendo México uno de los cinco primeros países de Megadiversidad, se pensaría que los quelites abundarían en nuestro país y que serían verduras muy populares como antaño, ya que muchos de ellos siempre han crecido espontáneamente en los campos de cultivo y en especial en las milpas (áreas tradicionales de cultivo del maíz). Para nuestra sorpresa hemos encontrado que estas plantas se siguen empleando cotidianamente en las áreas rurales. Inclusive ahí, algunas personas que se consideran vanguardistas prefieren a las verduras introducidas como las lechugas, las coles, o las espinacas, por considerarlas culturalmente más aceptadas, ya que éstas son reconocidas con un mayor estatus social. En ciertas áreas de México cuando hemos llevado a cabo estudios etnobotánicos para documentar el uso de estas plantas, nos hemos percatado que algunas personas de campo se avergüenzan de consumirlas y en algunas regiones, incluso, las mencionan como plantas para “cuchi”, término despectivo, que significa plantas para alimentar animales como los puercos.

Con estos antecedentes iniciamos un programa en el año de 1985 para llamar la atención sobre la importancia de apreciar y usar a estas verduras conocidas como quelites, y al mismo tiempo promover una mejor nutrición con plantas económicamente más accesibles para la población, ya que los quelites en su mayoría son plantas más nutritivas que las plantas introducidas. Antiguamente se recolectaban, pero actualmente se cultivan para cubrir la demanda de ciertos platillos tradicionales asociados con fiestas religiosas como son los romeritos (Suaeda torreyana), los cuales se consumen durante la



cuaresma y la Navidad. En general, los quelites son más baratos que las plantas introducidas por requerir de menos insumos para su cultivo y por ser complemento/componente a los cultivos principales como el maíz.

### ¿Dónde y cuándo empezar?

Con base en diferentes encuestas realizadas durante cinco talleres impartidos por E. Linares sobre el rescate de los quelites en la Federación Mexicana de Clubes de Jardinería y Arreglo Floral (FMCJAF) detectamos varios problemas: Las amas de casa de la Ciudad de México encuestadas (n = 100), generalmente, conocen entre 2 y 5 quelites y los asocian con sus visitas realizadas al campo, a la provincia, o con las personas que les ayudan a la limpieza de las casas procedentes de las áreas rurales; pero generalmente no los compran ni los consumen.

Los ciudadanos de la Ciudad de México mencionan que raramente los consumen debido a varias razones: a) Dificil accesibilidad; b) Desconocimiento de las formas de preparación; c) Poco tiempo del que

disponen actualmente las amas de casa para cocinar, (ya que la preparación de los platillos con quelites es más laboriosa que la de los platillos con plantas de hojas de mayor tamaño), y d) Considerarlos comida de un estrato social bajo.

### Estrategia educativa... ¡la unión hace la fuerza!

Estas encuestas nos ayudaron a desarrollar una estrategia educativa que incluyera varias vertientes: Solicitamos el apoyo del Instituto Nacional de la Nutrición “Salvador Zubirán” (1990) para la realización de un certamen culinario y un programa de concienciación dirigido a las amas de casa sobre la importancia de los quelites.

Ofrecimos múltiples conferencias en foros académicos, educativos, gubernamentales y de la industria privada (Linares, 1996 y Linares y Bye, 1998).

También nos asociamos con las ONG: Culinaria A.C. y Slow Food (2001 a la fecha) para organizar diferentes programmas de actualización y

Arriba: Durante el Primer Congreso Mexicano de Gastronomía, el jardín botánico organizó talleres didácticos dirigidos a diferentes públicos

Derecho: Taller sobre plantas comestibles realizado en el IV Congreso Internacional de Educación para Jardines Botánicos en Brooklyn, EEUU

capacitación dirigidos a un grupo de Profesionistas de la comida, encabezado por entusiastas chefs muy interesados en promover las plantas mexicanas en los menús de reconocidos restaurantes.

Ofrecimos cursos de actualización para profesores de la Escuela Nacional Preparatoria donde incluimos el tema de plantas comestibles y plantas de los Supermercados del Distrito Federal (1999 a la fecha) y organizamos varios talleres en diferentes escuelas rurales del país y en el mismo Jardín Botánico intensificándolos durante el año del 2005.

### Proyecto educativo multifacético

Para la planeación de este proyecto a largo plazo tomamos en cuenta el desconocimiento de los quelites por nuestros compatriotas y la urgente necesidad de rescatarlos y promoverlos para beneficiar a la nutrición de los mexicanos. Para lograr estos objetivos decidimos implementar un programa basado en: 1) Estudios etnobotánicos realizados por nosotros mismos y por otros colegas etnobotánicos en diferentes regiones de México, 2) Análisis nutricionales realizados por el Instituto Nacional de la Nutrición "Salvador Zubirán", 3) Estudios históricos disponibles y los realizados por nosotros mismos, especialmente de las fuentes históricas

antes mencionadas y 4) Acciones Educativas ininterrumpidas, dirigidas a varios niveles de público a lo largo del tiempo (hasta ahora 16 años).

### Algunos productos y acciones

Concretos resultantes de este proyecto A dieciséis años de distancia de haber iniciado este proyecto incluimos aquí algunos de los resultados más exitosos:

- 1) Organización del Certamen Culinario sobre Quelites (1990) dirigido a todo público y realizado en colaboración con el Instituto Nacional de la Nutrición (Linares, 1994). Las recetas recabadas se publicaron en el recetario titulado. "Los quelites un tesoro culinario" (1992) donde cada receta además de haber sido probada y rectificada, incluye su valor nutricional.
- 2) Presentación en diferentes foros académicos de talleres de plantas comestibles de México con énfasis en los quelites. Ejemplos de estos son los de los congresos: II Internacional en Educación en Jardines Botánicos llevado a cabo en La Gran Canaria en 1994 y en el III Internacional de Educación llevado a cabo en Brooklyn en 1996.
- 3); Tendencias Alimentarias 2005, Primer Congreso Mexicano de Gastronomía, llevado a cabo en la



Ciudad de México. Así como múltiples talleres didácticos dirigidos a diferentes públicos organizados en el jardín botánico?

- 3) Inclusión del tema "Las plantas comestibles de México y las plantas de los Supers (Supermercados)" en los cursos de actualización ofrecidos por el Jardín Botánico IB UNAM a la Escuela Nacional Preparatoria de la UNAM, los cuales fueron realizados en el Jardín Botánico del Instituto de Biología de la Universidad Nacional Autónoma de México (1999-2000). Programa anual de pláticas sobre plantas comestibles dirigidas a estudiantes de nivel Bachillerato, de la Escuela Nacional Preparatoria (1990 a la fecha).
- 4) Programas de televisión sobre la importancia de los quelites en la cultura de México (1988- 1990).
- 5) Con el apoyo del Proyecto de investigación de la Fundación McKnight (1994 al 2002) dirigido en México por R. Bye y con la participación de varios investigadores del mismo Jardín Botánico (Miguel Ángel Martínez Alfaro, Cristina Mapes, Francisco Basurto, Virginia Evangelista, Delia Castro y Luz María Mera) se llevaron a cabo varios certámenes culinarios locales en diferentes poblaciones de la Sierra Norte del Estado de Puebla y el Estado de México. Así como programas de radio en varias lenguas (tonoloca, popoloca, náhuatl y español) y varios talleres dirigidos a escuelas rurales. De los cuales resultaron un juego de lotería (Basurto, *et al*, 2005), un juego de memoria (McKnight, 2005), un cuento para niños (Mera, 2005) y un recetario regional (Castro *et al*, 2005).

Derecho: Degustación de platillos de quelites en el Jardín Botánico IB UNAM





- 6) Capacitación y actualización de profesionales de la alimentación, dirigida a Chefs y restauranteros (2000 a la fecha). Para este grupo ofertamos clases teórico-prácticas que forman parte de un diplomado organizado en colaboración con el Programa Universitario de Alimentos y Culinaria A.C., que tiene una duración de un semestre. En este caso cada clase incluye una degustación con platillos del tema abordado, los cuales son preparados por los mismos chefs participantes y basados en su propia investigación. Entre los temas incluidos están: La milpa (lugar donde se cultiva el maíz), para ubicar a los quelites en su entorno vegetal; Los recursos comestibles de la época prehispánica, donde los quelites fueron de gran importancia, y Los quelites de México (Fig.9).

- 7) Inclusión del tema: "El rescate de los quelites" en el curso semestral (2004 a la fecha), organizado por la FMCJAF, donde asisten cada semestre personas interesadas en la horticultura, floricultura y utilización de las plantas en la vida cotidiana.

### A manera de conclusión

A lo largo de este tiempo, hemos constatado que para motivar a nuestros conciudadanos no basta con un programa aislado. Se deben sostener múltiples programas a lo largo de varios años. Estos deben estar dirigidos a varios tipos de público, sobre todo cuando se aborda el tema de plantas comestibles, que muchas veces no se consumieron desde la infancia y generan cierta desconfianza (lo que no hemos constatado en el caso de programas de plantas medicinales, en los cuales las personas

están más abiertas al uso de plantas desconocidas). No todos los programas alcanzan el éxito anticipado, pero no hay que desanimarse y continuar explorando nuevas alianzas, técnicas, foros y acciones.

Hemos aprendido que tenemos que efectuar paralelamente varios programas educativos que sean atractivos, enfocados a diferentes edades, estratos sociales, dirigidos a diferentes profesionales, áreas geográficas, etc. Que motiven y realmente generen un cambio de actitud hacia el consumo de este tipo de plantas.

Hemos podido constatar que nuestros programas implementados adecuadamente tanto en las ciudades como en las áreas rurales de nuestro país motivan a las personas al consumo de estas plantas silvestres y en especial si se incluyen actividades prácticas como: una degustación y una demostración de cómo cocinarlas.

Para lograr abordar e impactar a un mayor número de personas es necesario asociarnos con diferentes grupos que compartan el mismo interés, para así poder multiplicar y mantener esfuerzos sostenidos durante un tiempo más largo.

Debido a este esfuerzo sostenido y a la incansable labor realizada por el Jardín Botánico del IB UNAM, actualmente se pueden visitar varios restaurantes de reconocido prestigio en la Ciudad de México y consumir desde un humilde taco "resucitado" de quelites con requesón, hasta una pechuga de pollo rellena de quintoniles (*Amaranthus* spp.), ¡lo que nos hace sentir muy satisfechos!



### ¿Solamente se puede en México?

Creemos que lo aquí ejemplificado para México es aplicable para otros países como el nuestro, donde aún existen las plantas silvestres comestibles y que probablemente estén en peligro de ser olvidadas, sustituyendo su uso por especies de moda, introducidas, que en la mayoría de los casos son menos nutritivas. Nos preocupa que esta sustitución acarree cambios alimenticios en detrimento de la nutrición de los consumidores.

Sentimos que es nuestra responsabilidad, como educadores de las plantas, mantener y fomentar el uso tradicional vigente de las especies vegetales promisorias, para las generaciones venideras.

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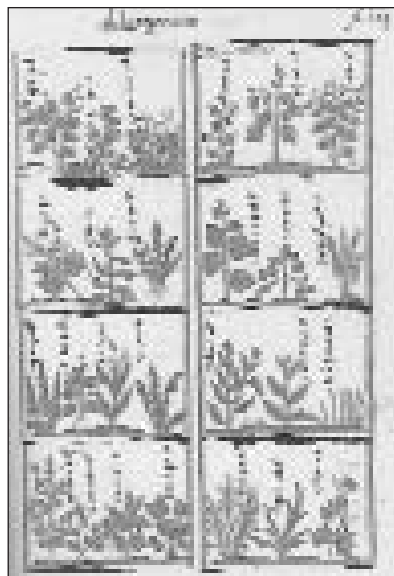
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### Summary

Mexican vegetables known as 'quelites' are highly nutritious and cost less than other vegetables. Regretably, documented information about quelitos has been forgotten in cities due to: a difficulty of access to these vegetables, a lack of knowledge about preparation, a lack of time available to housewives for cooking and, the fact that they are considered food of low social status.

Following the analysis of this problem, staff at the UNAM Botanic Garden, Mexico City, designed a long-term educational project with the support of many institutions including governmental, educational and NGOs. The objectives of the project were to increase awareness about quelitos and to rescue them and promote them for the nutritional benefit of Mexicans. For 16 years various groups have been involved in the programmes and as a direct result, in city restaurants you can now taste of dishes that include quelites.

### Résumé

En étudiant l'importance historique de la plante comestible connue au Mexique sous le nom de « quelites », on découvre qu'elle est très nutritive et peu chère comparée à d'autres légumes. Dans les villes toutefois, les quelites ont été oubliés car ils sont difficiles à obtenir, on connaît mal leur

préparation, les femmes au foyer ont peu de temps pour la cuisine et ils sont considérés comme une nourriture de pauvres.

Suite à l'analyse de ce problème, nous avons conçu un projet éducatif à long terme avec le soutien de nombreuses institutions dont des organisations gouvernementales, éducatives et non gouvernementales. Les objectifs du projet étaient de faire connaître les quelites à nos compatriotes, de sauver et de promouvoir ce légume dans l'intérêt des mexicains. Pendant 16 ans, différents groupes ont été impliqués dans notre programme pour la sauvegarde et l'utilisation de quelites. Le résultat direct est qu'il est maintenant possible de déguster des plats avec des quelites dans les restaurants des villes.

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# Making biodiversity accessible for all –

## using different languages in interpreting South Africa's National Botanical Gardens

**Summary** This article outlines some of the experiences of the South African National Biodiversity Institute in trying to make biodiversity accessible through developing interpretive signs in three languages. Important considerations, challenges and creative solutions are outlined, and readers can gauge their response to a range of sign examples from some of South Africa's eight National Botanical Gardens. Important points to consider when designing multi-lingual signs:

**Good** multi-lingual signs tend to have:

- Not too much text
- Clear illustrations that repeat the message of the sign
- Large clear titles in different languages – these act as 'cues' to draw readers to text in their language
- Manageable text chunks that look appealing and can be read quickly

**Bad** signs tend to have:

- Too much text
- Few illustrations
- No differentiation between languages

Readers are encouraged to share their ideas and experiences with the author.

French, Japanese and Korean. Others, such as the Natal and Free State Gardens, receive visits primarily from local people. In each case, our challenge as interpreters is to make biodiversity as accessible as possible to as many visitors as possible.

In this article, I explain some of the ways we have tried to do this. Working with several languages is challenging, expensive and very time-consuming, so there needs to be good reasons for doing it. We have tried, and continue to try, different ways of working with languages in our interpretive work. Any comments and suggestions are welcome.

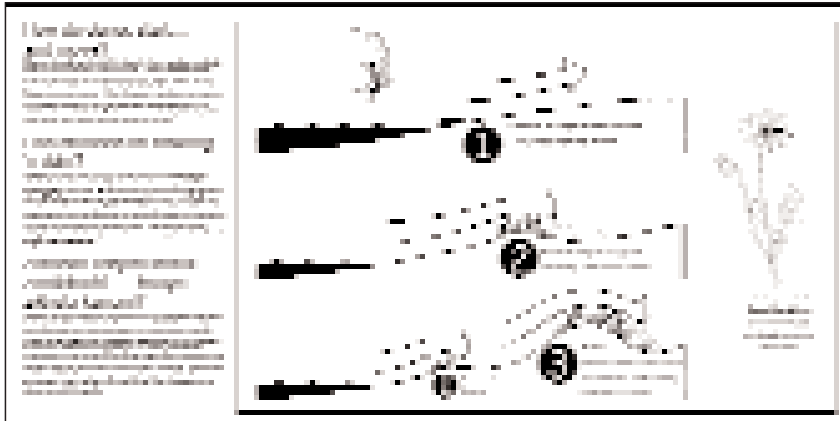
Below: SANBI's gardens receive tourists from all over the world. By keeping in touch with the tourist authority they are able to respond to changing tourism trends

### Introduction

South Africa is a very rich country – rich in biodiversity, rich in people groups, rich with possibilities. This richness gives rise to many opportunities for the South African National Biodiversity Institute (SANBI) to make biodiversity as accessible as possible for all people.

Interpretation in SANBI's eight National Botanical Gardens (NBG's) is primarily in two forms – guided tours, and interpretive signs. Brochures are used occasionally. Each of the eight gardens has a very different range of visitors. Some, like Kirstenbosch, receive large numbers of foreign tourists who speak languages such as German,

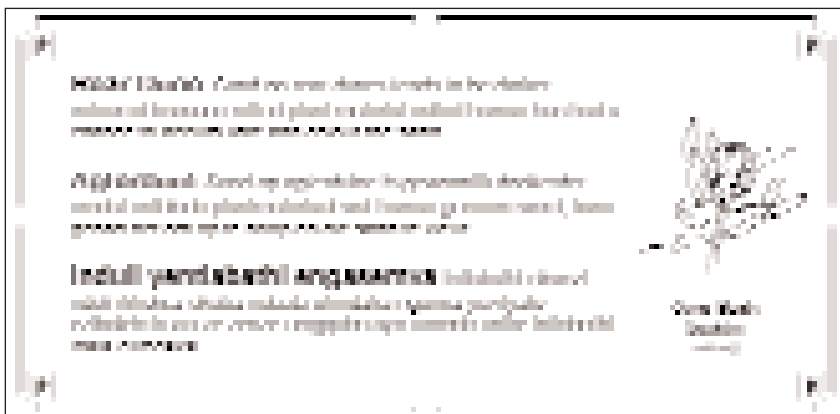




Right: Sign 1,  
Harold Porter  
National Botanic  
Garden



Right: Sign 2,  
Pretoria  
National Botanic  
Garden



Right: Sign 3,  
Harold Porter  
National Botanic  
Garden

language/s is/are most appropriate. In addition, general brochures in certain European languages are available at the busiest garden – Kirstenbosch. In this article, the three language situation is the one we have been dealing with, so our solutions and examples have that in mind.

**Signs that seem to work**

I say ‘seem to work’, because most of these signs have proved popular with visitors in the gardens where they have been placed. These layouts may not work in your situation – try them out as temporary signs first.

Try the eye test – Test signs 1 and 2 by letting your eyes quickly browse each one. ‘Observe’ your eye movement. What did you notice first? Which signs seem most effective?

1. HP dune storyboard. This sign was developed in a situation where most visitors are English-speaking. The clear, effective graphics re-tell the message graphically and powerfully, and help to tell the story for those may not be able to read. Having titles in the three languages helps readers quickly identify ‘their’ section of a sign.

2. Pretoria medicinal garden. This sign is text-heavy, but is redeemed by the illustration. Most people will be able to figure out the message without reading the text. A sign with large amounts of text is hard work, in any language.

3. HP Dune labels. This is a simple example of using three languages on a small label. Because the text order is the same for every label, visitors can predict where their language will be on subsequent labels. Also, the text is very short and thus non-threatening.

4. Kirstenbosch Fynbos sign. Illustrations clarify the message here, and subtitles in the three languages break up the text into manageable chunks.

**Important considerations**

**Who visits a garden?**

As with all interpretation, it is essential to ascertain who is actually reading the signs. This means spending time in the garden watching what people are

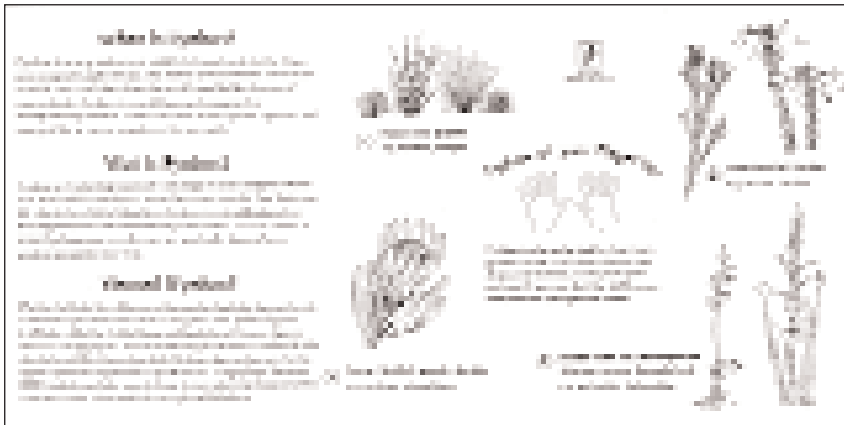
**Some important background details**

**Language range**

In addition to South Africa’s 11 official languages, we have many tourists from other countries, who speak a wide range of languages, including French, German, Mandarin, Korean, Hindi, Japanese, Dutch and many others.

**Policy**

In order to stay sane in the face of our language challenge, we (SANBI) settled on a policy decision that permanent (aluminium, A4 or larger) signs include three languages – English, Afrikaans, and the most widely spoken African language in that particular garden. Temporary signs, being more flexible and short term, can be in whatever



**Quick summary of important points when designing multi-lingual signs.**

**Good** signs tend to have:

1. Not too much text
2. Clear illustrations that repeat the message of the sign
3. Large clear titles in different languages - these act as 'cues' to draw readers to text in their language
4. Manageable text chunks that look appealing and can be read quickly
5. Predictable location of the languages on all signs at one site, so visitors know where to consistently find information they will understand

**Bad** signs tend to have:

1. Too much text
2. Few illustrations
3. No differentiation between languages

doing. You may find that only 3% of visitors actually read the text of certain languages. Then again, providing multi-lingual signs may increase visitor numbers from previously marginalized groups who feel more accommodated once their language is used on signs.

**Staying responsive**  
Gardens need to respond to changing tourism patterns to remain accessible. Make friends with your nearest tourism authority, and find out what the latest tourist trends are. Visitor groups change over time, so your multi-lingual signs from five years ago may not be effective for today's visitor profiles.

**Sensitivity**  
South Africa's unique history means languages have deep and powerful meanings in our nation. Some people see certain languages as colonial or oppressive, others may see the same languages as a symbol of nationhood and identity. Leaving languages off signs in national gardens may thus be seen by some as being insulting or even threatening to their culture. In one case, one of our gardens received a series of pleading letters when a local newspaper erroneously reported that a particular language would no longer be used in the garden. This despite the fact that about 5%, if that, of garden visitors actually read that language, and nearly all of those would be able to, read English. So, when designing interpretive materials, this kind of issue needs to be considered.

**Non-technical is also a language**  
Science has a language of its own – often inaccessible to many people. Since we are trying to make biodiversity as accessible as possible, we should deliberately use language that is understandable, steering clear of such delightful sentences as 'This monopodial *Tridactyle bicaudata* reproduces annually by means of numerous inflorescences borne on two spikes which project at approximately 90 degrees from the stem.' A translation (for that is what it is) might be: 'Look closely. This orchid has two sets of flowers on its stem.'

**Challenges**  
**Text volume**  
One of the challenges with multi-lingual signs is the volume of text. Most visitors don't want to read a huge

volume of text, and if two thirds of that text is in a language they don't know, they won't bother to wade through it looking for a few sentences they do understand. So the design of the sign has to be attractive, yet informative.

**Translation**  
In terms of African languages, the language 'on the ground', spoken by most people, is often very different from the 'official' translations. Plant names, in particular, are almost impossible to translate, as the same plant may have five or six different names, depending on where it occurs and what it is used for.

**Mistakes**  
We tried separate signs in different languages at one site. This was ineffective because people do not seem to have the time or interest to check each sign to see if it is one they will understand. We had three different languages represented, so, for the visitor the chances of finding something to read, was one in three. Hardly anyone bothered to read these signs. We also found that signs where the three languages were undifferentiated were less popular – it was hard for people to tell at a glance what they would understand. People's eyes quickly scan a sign, looking for something they recognise. If their initial scan is confusing, they will probably give up before finding information in their language.

**Creative solutions**  
**Temporary signs**  
Cheap temporary signs, made of laminated paper, can be produced quickly, in any language or language combination. When working with



Left: Kirstenbosch National Botanic Garden

Left: Father and son read a sign, written in English, Africans and Xhosa, in the useful plants garden at Kirstenbosch

multiple languages, it is especially important to test out your signs with the public. Temporary signs allow you to do this easily.

### Text and Captions

Use a main chunk of text to communicate the key facts or messages on your sign. Use illustrations and captions in the most popular language to fill in the details.

### Illustration

Good illustrations can be effective at communicating a message and help bypass the need to use multiple languages all the time. In fact, people who cannot read at all may be able to understand a well-illustrated sign. Find people who have the skill of telling a story or message using pictures, which is something very different to doing scientifically accurate plant illustrations.

### Brochures

In some cases, we have signs in one language, and brochures with the same information in other languages.

### Audio guide system at Kirstenbosch

This popular form of self-guided interpretation with an audio handset is great for visitors who come on their own. At the moment, it is available in English or German – we have many German tourists at Kirstenbosch. Recently, visitors have requested other languages.

### Conclusion

Working with multiple languages in a botanical garden is challenging, yet carries substantial rewards in terms of

increased visitor understanding and satisfaction, and in terms of acceptance of a garden by the local people. I would encourage you to try different ideas, and test them out in your garden. Please feel free to contact me with ideas, comments and suggestions on multiple-language interpretation – I would love to hear from you.

### Résumé

Cet article décrit quelques expériences de l'Institut National de la Biodiversité d'Afrique du Sud dans ses efforts pour rendre la biodiversité accessible grâce au développement de ses panneaux d'interprétation en 3 langues. D'importantes considérations, des défis et des solutions créatives sont esquissées et les lecteurs peuvent également tester leurs réactions à une série d'exemples de panneaux parmi les 8 Jardins Botaniques Nationaux d'Afrique du Sud.

Quelques points importants à prendre en compte lors de la conception de panneaux multilingues :

- Les **bons** panneaux multilingues tendent à avoir :
1. Peu de textes
  2. Des illustrations claires qui reprennent le message du panneau
  3. De gros titres clairs écrits en différentes langues – ils servent d'appels pour guider les lecteurs vers le texte dans leur langue.
  4. Des tronçons de textes abordables qui soient attirants et pouvant être lus rapidement.

Les **mauvais** panneaux tendent à avoir :

1. Trop de textes
2. Peu d'illustrations
3. Pas de distinction entre les différentes langues.

Les lecteurs sont encouragés à partager leurs idées et leurs expériences avec l'auteur.

### Resumen

Este artículo destaca algunas de las experiencias del Instituto Nacional de Biodiversidad en Sudáfrica, en sus intentos para hacer biodiversidad accesible a través del desarrollo de letreros interpretativos en tres idiomas. Se resaltan consideraciones importantes, retos y soluciones creativas, y los lectores pueden probar su respuesta a un rango de ejemplos de letreros de algunos de los ocho jardines botánicos nacionales. Importantes puntos a considerar cuando se diseña letreros en varios idiomas:

Un buen letrero multilingüe tiende a tener:

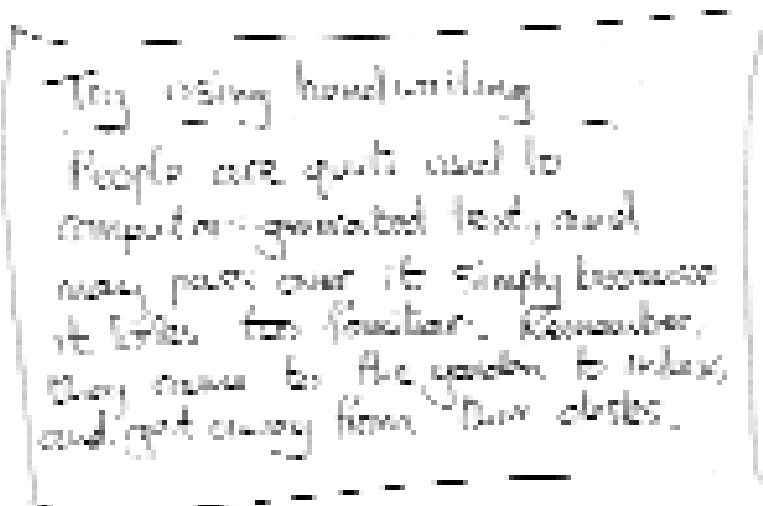
1. No mucho texto
2. Ilustraciones claras que repitan el mensaje del letrero
3. Títulos claros y grandes en diferentes idiomas – estos actúan como “pistas” a situar lectores al texto en su idioma.
4. Textos cortos manejables que aparezcan atractivos y puedan ser leídos rápidamente.

Malos letreros tienden a tener:

1. Demasiado texto.
2. Pocas ilustraciones.
3. No diferenciación entre idiomas.

Los lectores son motivados a compartir sus ideas y experiencias con el autor.

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# Positive visits for all through differentiation

**Summary** All students learn in different ways. By ensuring activities are differentiated, that is by offering a variety of ways in which children can achieve the same educational goal, the experience of a visit to a botanic garden will be enhanced for all and in particular for those with special needs.

The main considerations should be of forward planning, physical access, structuring of the visit, providing novelty and excitement, especially at the beginning of the visit and the provision of a multi-sensory experience. This might include activities to embrace and enhance the senses of sight, sound, smell, taste and touch. A positive and inclusive visit is then guaranteed for all children.

## Introduction

All students learn in different ways and if great care and thought can be put into practice, when thinking about children with special educational needs, the outcome of their visit to a botanic garden will be greatly enhanced.

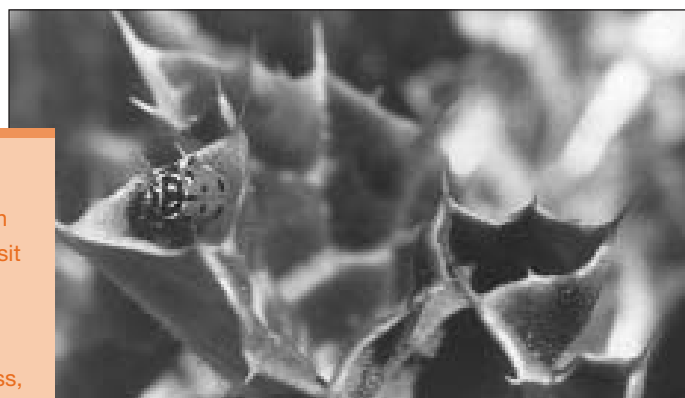
No two children with special educational needs will share the same profile and all special needs are on a continuum from mild to severe. Some children may have a physical difference, for example they may have lost a limb or been born with no sight or hearing, while other children may have specific learning difficulties, such as dyslexia (a learning difficulty which impacts on a learner's ability to read, write and count) or dyspraxia (a learning difficulty which impacts on a

learner's ability to think out, plan and carry out sensory/motor tasks). The most important thing to remember is that it is very often these learning differences that have provided them with their greatest traits of appreciation, sensitivity, artistic gifts and unique view of the world. By introducing any new experience in a novel, structured, well thought out and multi-sensory way, these children can gain just as much as anybody else.

When children go on any excursion, it is always best to prepare the child for the situation and situation for the child. On the physical side, for example, botanic gardens need to consider whether they can provide suitable access for children who rely on wheelchairs and whether facilities, such as cloakrooms, can be accessed by everyone. Ideally, before a visit to a

botanic garden, the education officer should discuss with the teachers or parents the special needs of the children who are visiting and what the botanic garden has to offer. Equally the children should be prepared for their visit; maybe showing and explaining a map, giving them an idea of some of the things they might expect to see and do, and how plants need to be loved and respected. It is important to remember, that if a botanic garden educator is unable to have prior contact with a teacher bringing children to the garden, it is difficult for him or her to prepare a well integrated visit for all children, particularly for those with special needs.

At the beginning of any visit, as with any good teaching practice, it is important to use novelty and excitement to engage the children's imagination and attention. This is particularly important for children with special needs. First stop might be to an extraordinary or fantastical plant that is in the botanic garden's possession; a plant that only flowers



Above: Botanic gardens are the perfect places to engage all children

Right: All children learn in different ways. It is good practice to introduce new experiences in a novel, structured and multi-sensory way



every 10 years, a passion flower where the reason for its naming could be explained, giant water-lilies or an early-morning 'dew garden'.

If worksheets or quizzes are going to be offered then consideration should be made as to whether the activities involved are truly multi-sensory; there might be different sections of plants to look for, noises to listen to, edible plants to taste, special plants to smell, tactile plants to touch, fallen leaves to collect and directions to an area where they can actually garden themselves. Depending on the group, if some children find it difficult, for any reason, to write, other methods such as using a tape recorder, a camera or collecting box, could be used to record their visit. Worksheets of differing ability could also be available. The more structured and well organised a visit, the more likely is the chance of a successful and memorable day.

A tour of some of the fragrant plants could be a wonderful introduction to botanic gardens or if it is not possible to take children to the plants then maybe a row of potted fragrant plants might be more accessible, some children would even enjoy being asked to close their eyes and guess the smells of plants. The same ideas of course could be applied to the sense of taste and touch. When it comes to appreciating the noises to be heard in a botanic garden, thought could be given to the addition of various kinds

of wind chimes, a water feature, exotic sounding birds and even the sound of wind in ornamental grasses.

The end of a trip to the botanic gardens could include the experience of 'real' gardening, there is nothing as therapeutic as getting one's hands dirty and covered in earth. There could be a small garden laid out, in raised beds, with continuing projects for the children to work on, or if that is not feasible, then the children could plant their own seeds or bulb in a pot to take away with them. The importance of using all our senses cannot be underestimated. The educationist, Edgar Dale, through his research developed the cone of learning and this illustrated that we only remember 10% of what we read, 20% of what we hear and 30% of what we see, but we remember 90% of what we say and do!

Botanic gardens are the perfect places to engage children in the wonderful world of plants and as can be seen, by these simple suggestions; a few accommodations, a little advanced thought and detailed planning, can lead to a positive experience for all children, not just those with special needs.

## Reference

- ➔ Dale, E., 1969. *Audio-Visual Methods in Teaching* (3rd Edn.), Holt, Rinehart, and Winston, Orlando, Florida, U.S.A.

## Résumé

Chaque étudiant apprend d'une manière différente. En s'assurant que les activités sont variées, c'est-à-dire en offrant aux enfants différentes façons d'atteindre le même objectif pédagogique, la visite d'un jardin botanique sera améliorée pour tous et en particulier pour ceux qui ont des besoins spécifiques.

Les préoccupations principales doivent être la préparation, l'accès physique et l'organisation de la visite qui doit offrir nouveauté et sensations, surtout au début de la visite, et qui doit apporter une expérience multi-sensorielle. Celle-ci peut inclure des activités qui développent le sens de la vue, de l'ouïe, de l'odorat, du goût et du toucher. Une visite positive et généreuse est alors garantie pour tous les enfants.

## Resumen

Todos los estudiantes aprenden en diferentes formas. Para asegurar que las actividades sean diferenciadas, se tiene que ofrecer una diversidad de vías en las cuales los niños pueden alcanzar los mismos objetivos educativos, la experiencia de una visita al jardín botánico será realizada por todos y en particular para todos aquellos con necesidades especiales.

Las consideraciones principales deberían ser de planeación futura, acceso físico, estructuración de la visita, proveyendo novedad y motivación, especialmente en el principio de la visita y la proporción de una experiencia mutisensorial. Esta podría incluir actividades para abarcar y resaltar los sentidos de la vista, oído, olor, sabor y tacto. Una visita positiva e inclusive es entonces garantizado para todos los niños.

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# Resources

## Resources

### English Heritage (2005) Easy Access to Historic Landscapes, English Heritage, UK.

These guidelines provide practical advice on how to increase or improve access to a site in an inclusive and integrated way. Produced by The Sensory Trust, a UK access charity, the guide introduces the principles of access, the process of creating an access plan and how to identify and solve access issues. Although some of the information specifically relates to UK legislation, most of the key concerns will be similar for any site. Case studies provide useful examples of improving access.



## Disponible

### English Heritage (2005) Easy Access to Historic Landscapes, English Heritage, UK.

Ces fiches pratiques apportent des conseils sur la manière d'accroître ou d'améliorer l'accès à un site, sous une forme intégrée et tenant compte de tous les éléments. Élaboré par The Sensory Trust, une organisation sans but lucratif travaillant sur l'accès et basée au Royaume-Uni, ce guide présente les principes de l'accès, la démarche de création d'un plan d'accessibilité ainsi que les méthodes pour identifier et résoudre des problématiques relatives à l'accès. Même si une partie des informations a trait à la législation britannique en particulier, la plupart des questions clés se retrouveront pour chaque site. Plusieurs études de cas présentent des exemples pratiques pour améliorer l'accès.

À télécharger en PDF sur [www.sensorytrust.org.uk/resources/EA\\_HL.pdf](http://www.sensorytrust.org.uk/resources/EA_HL.pdf), ou à commander gratuitement au English Heritage Customer Services, au + 44 (0)870 333 1181

### Research Councils UK (2005) Evaluation: Practical Guidelines

Un guide clair et facile à utiliser, présentant certaines des techniques et méthodes d'évaluation. Cette publication analyse les stratégies d'évaluation, le recueil et le traitement de données. Elle est conçue notamment pour les personnes menant

## Recursos

### English Heritage (2005) Easy Access to Historic Landscapes Acceso facil a los paisajes historicos, English Heritage, UK.

Esta guía proporciona consejos prácticos para facilitar el acceso de una manera inclusiva e integrada a las localidades deseadas. Editada por el Sensory Trust, una sociedad sin ánimo de lucro del Reino Unido, la guía introduce los principios del acceso, del proceso de creación de un plan de acceso, y de como identificar y solucionar los temas relacionados con el acceso. Aunque alguna de la información se refiere específicamente a la legislación británica, la mayoría de los temas claves son comunes a muchas localidades. Se dan ejemplos prácticos y tiles sobre la facilitación de acceso.

El PDF está disponible en [www.sensorytrust.org.uk/resources/EA\\_HL.pdf](http://www.sensorytrust.org.uk/resources/EA_HL.pdf), se será enviado gratis por los servicios al consumidor de English Heritage en el teléfono + 44 (0)870 333 1181

### Research Councils UK (2005) Evaluation: Practical Guidelines Guía práctica de la evaluación

Una guía sobre métodos para la evaluación clara y fácil de utilizar que trata sobre la estrategia, la colección y la manipulación de datos. Está diseñada específicamente para aquellas personas que organizan charlas, actividades prácticas y

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**Research Councils UK (2005)  
Evaluation: Practical Guidelines**

A clear and easy to use guide to some of the techniques and methods for evaluation. This publication discusses evaluation strategy, data collection and data handling. It is designed specifically for people who run activities such as talks, hands on events and exhibitions, so is directly relevant to botanic garden educators. The guidelines provide a simple, practical introduction to evaluation approaches. Examples of evaluation questions and questionnaires and the excellent further reading recommendations are particularly useful.

Downloadable from website [www.rcuk.ac.uk/documents/evaluationguide.pdf](http://www.rcuk.ac.uk/documents/evaluationguide.pdf) and also as a black and white printer friendly version [www.rcuk.ac.uk/documents/evaluationguide\\_print.pdf](http://www.rcuk.ac.uk/documents/evaluationguide_print.pdf)  
For a hard copy, contact [info@rcuk.ac.uk](mailto:info@rcuk.ac.uk)

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**Australian Research Institute in Education for Sustainability (ARIES) (2005) – A National Review of Environmental Education and its Contribution to Sustainability**

This review assesses current environmental education practice in Australia and identifies the needs across the various sectors: school, community, business and industry and further and higher education. Based on research undertaken by ARIES, this review is relevant to all those involved in the design and delivery of environmental education. The five volumes, which make up the review, highlight opportunities to improve policy, practice and research. Volume one, in particular, will be useful for botanic garden educators as it provides the conceptual basis for understanding environmental education's contribution to sustainability and identifies the various approaches to learning for sustainability.

des activités telles que des débats, des ateliers pratiques et des expositions, et concerne donc directement les éducateurs des jardins botaniques. Ces fiches-conseils proposent une introduction simple et pratique aux démarches d'évaluation. Les exemples de questions et de questionnaires d'évaluation, de même que les excellentes recommandations d'ouvrages complémentaires, sont particulièrement utiles.

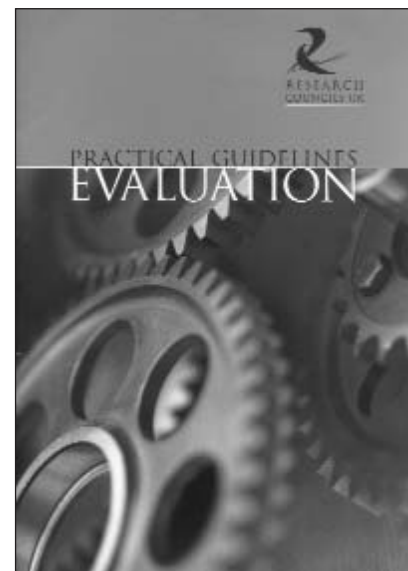
Téléchargeable sur le site [www.rcuk.ac.uk/documents/evaluationguide.pdf](http://www.rcuk.ac.uk/documents/evaluationguide.pdf), également dans une version en noir et blanc préservant votre imprimante [www.rcuk.ac.uk/documents/evaluationguide\\_print.pdf](http://www.rcuk.ac.uk/documents/evaluationguide_print.pdf). Pour un exemplaire relié, contactez [info@rcuk.ac.uk](mailto:info@rcuk.ac.uk)

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**Australian Research Institute in Education for Sustainability (ARIES) (2005) – A National Review of Environmental Education and its Contribution to Sustainability**

Cette publication évalue les pratiques d'éducation à l'environnement actuelles en Australie et identifie les besoins provenant de différents secteurs : l'école, la communauté, le secteur industriel et des affaires, la formation continue et l'enseignement supérieur. Se basant sur les recherches effectuées par ARIES, ce bilan concerne toute personne investie dans la conception et la mise en application de programmes d'éducation à l'environnement. Les cinq volumes constituant cette publication soulignent les possibilités d'amélioration des politiques, des pratiques et des recherches. Le premier volume est particulièrement utile aux éducateurs des jardins botaniques, car il présente la base conceptuelle pour comprendre la contribution apportée par l'éducation à l'environnement à la question de développement durable, et identifie les différentes démarches d'apprentissage en faveur du développement durable.

À télécharger sur [www.aries.mq.edu.au/project.htm](http://www.aries.mq.edu.au/project.htm) ou, pour des exemplaires reliés, contactez le coordinateur de ARIES [ariescoordinator@gse.mq.edu.au](mailto:ariescoordinator@gse.mq.edu.au)



exposiciones, así que es directamente relevante a los educadores en los jardines botánicos. La guía proporciona una introducción simple y práctica a la evaluación. Los ejemplos de preguntas y cuestionarios y una excelente bibliografía son de particular utilidad.

Está disponible en [www.rcuk.ac.uk/documents/evaluationguide.pdf](http://www.rcuk.ac.uk/documents/evaluationguide.pdf) y en versión en blanco y negro para rápida impresión en [www.rcuk.ac.uk/documents/evaluationguide\\_print.pdf](http://www.rcuk.ac.uk/documents/evaluationguide_print.pdf). Para una versión imprimida contacte [info@rcuk.ac.uk](mailto:info@rcuk.ac.uk)

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**Australian Research Institute in Education for Sustainability (ARIES) (2005) – A National Review of Environmental Education and its Contribution to Sustainability Una revisión nacional de la educación medio ambiental y su contribución a la sostenibilidad.**

Este trabajo revisa los métodos utilizados actualmente en la educación medio ambiental australiana e identifica los requisitos de los diferentes sectores: los colegios, la comunidad, las empresas e industrias y la educación secundaria y terciaria. Partiendo de las investigaciones del propio instituto ARIES, esta revisión es directamente relevante a todos aquellos que preparan y ejecutan la educación medio ambiental. Los cinco volúmenes de este trabajo destacan las oportunidades que existen para mejorar la política, la práctica y la investigación. El primer volumen será especialmente útil para los educadores en jardines botánicos ya que proporciona una base que permite comprender la contribución que hace la educación medio





Download from [www.aries.mq.edu.au/project.htm](http://www.aries.mq.edu.au/project.htm) or for hard copies, contact the ARIES coordinator at [ariescoordinator@gse.mq.edu.au](mailto:ariescoordinator@gse.mq.edu.au)

### Resource Audits

Lists of available environmental education resources can be invaluable for practitioners trying to find help, advice or ideas. The following examples from the UK and South Africa provide excellent models.

#### Conservation education resource materials available in the cape floristic region

Ally Ashwell, 2005. C.A.P.E. (Cape Action for People and the Environment) Conservation Education Program.

This comprehensive list describes resource materials, such as books, worksheets, and posters, for use by environmental educators. Each resource reference includes details of its target audience, language, availability and how it can be used. The materials are ordered thematically to cover the main ecosystems (fynbos, marine, montane etc), living organisms (plants, mammals, invertebrates) and environmental topics (urban greening, erosion, environmental policy).

Download from <http://campus.ru.ac.za/download.php?actionarg=5022> or request via e-mail to [ccep@ru.ac.za](mailto:ccep@ru.ac.za)

### Recensement des ressources

Dresser des listes de ressources disponibles relatives à l'éducation à l'environnement peut avoir une valeur inestimable pour les professionnels de terrain, recherchant une assistance, des conseils ou des idées. Les exemples suivants, provenant du Royaume-Uni et d'Afrique du Sud présentent d'excellents modèles.

#### Conservation education resource materials available in the cape floristic region

Ally Ashwell (ed.) (2005), ENVIROEDS, Cape Town, South Africa for the C.A.P.E. (Cape Action for People and the Environment) Conservation Education Program.

Cette liste complète détaille les ressources disponibles, telles que les ouvrages, les documents de travail, et les posters, à l'usage des éducateurs en environnement. Chacune des références de ressources comprend des précisions quant au public visé, la langue, la disponibilité et la manière de l'utiliser. Ces outils sont classés par thèmes, couvrant ainsi les principaux écosystèmes (fynbos, monde marin, montagne, etc.), organismes vivants (végétaux, mammifères, invertébrés) et sujets environnementaux (verdissement urbain, érosion, politiques environnementales).

À télécharger sur <http://campus.ru.ac.za/download.php?actionarg=5022> ou à demander par email à l'adresse [ccep@ru.ac.za](mailto:ccep@ru.ac.za)

#### Botanic Gardens Education Network (BGEN) Resources Directory (2005)

L'annuaire du BGEN a été écrit et élaboré par les membres du réseau. Il se focalise sur les ressources, les fournisseurs, et les spécificités des législations s'appliquant directement aux éducateurs des jardins botaniques au Royaume-Uni. Outre ces informations, cet annuaire comprend également des indications sur les compétences et expériences personnelles des membres qui sont prêts à les partager, contribuant ainsi au renforcement des liens au sein du réseau.

ambiental a la sostenibilidad e identifica las diferentes avenidas a seguir para conseguir tal comprensión. Disponible en [www.aries.mq.edu.au/project.htm](http://www.aries.mq.edu.au/project.htm) o para una versión imprimida, contacten la coordinación de ARIES en [ariescoordinator@gse.mq.edu.au](mailto:ariescoordinator@gse.mq.edu.au)

### Auditoria de recursos

Las listas de los recursos medio ambientales disponibles pueden ser muy útiles para los practicantes que buscan ayuda, consejos o ideas. Los ejemplos que siguen, del Reino Unido y Sudáfrica son modelos excelentes de tales listados.

#### Conservation education resource materials available in the cape floristic region

Recursos para la educación conservacionista disponibles en la región florística del cabo. Ally Ashwell, 2005. C.A.P.E. (Cape Action for People and the Environment) Conservation Education Program.

Esta amplia lista define los recursos, como los libros, hojas de trabajo, y carteles para los educadores medio ambientales. Cada recurso es definido con detalles sobre el público apropiado, el idioma, la disponibilidad, y recomienda la mejor manera de utilizarlo. Las materias están ordenadas por temas refiriéndose a los principales ecosistemas (fynbos, marinos, montañosos, etc), seres vivos (plantas, mamíferos, invertebrados) y temas medio ambientales (zonas verdes urbanas, la erosión, política medio ambiental).

Disponible en <http://campus.ru.ac.za/download.php?actionarg=5022> o pídale por correo electrónico de [ccep@ru.ac.za](mailto:ccep@ru.ac.za)

#### Botanic Gardens Education Network (BGEN) Resources Directory (2005)

El directorio de la BGEN (Red de Educación en los Jardines Botánicos) fue escrito y recopilado por miembros de la red. Se concentra en los recursos, los proveedores, y los detalles de la legislación directamente relevante a los educadores en los

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### **Botanic Gardens Education Network (BGEN) Resources Directory (2005)**

The BGEN directory was written and compiled by the network members. It concentrates on resources, suppliers, and specifics of legislation that directly apply to botanic garden educators in the UK. As well as information, the directory also includes details of members' personal skills and experiences that are available to share; thereby helping to strengthen connections within the network.

*Limited number available through BGCI – contact sarah.kneebone@bgci.org*

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### **Earth: A graphic look at the state of the Planet** (Wall Chart)

This detailed and colourful wall chart has been produced by The Global Education Project, a Canadian NGO. It provides a graphical summary of a wide range of environmental issues; from climate change and species extinctions to debt, population, and food supply. The poster uses information from the United Nations, official government agencies, academic sources, and NGOs. The huge amount of data it contains could be the basis for many education sessions. Use the website to preview the charts and written descriptions of some of the topics covered.

*ISBN 0-9731864-2-9. The Global Education Project, PO Box 241 Mansons Landing, BC, V0P 1K0, Canada or through their website [www.theglobaleducationproject.org](http://www.theglobaleducationproject.org) [www.theglobaleducationproject.org](http://www.theglobaleducationproject.org). The wall chart is 67.5cm X 90cm in size and is available folded (US\$15.95) or laminated (US\$29.50) plus postage and packing.*

### **Websites**

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**National Center on Accessibility**  
[www.ncaonline.org](http://www.ncaonline.org)

The National Center on Accessibility is a collaborative programme between Indiana University and the USA National Park Service. It is designed to promote access for people with disabilities in recreational activities. The NCA offers distance learning courses on improving access,

*Quantité limitée, disponible auprès du BGCI – contactez [sarah.kneebone@bgci.org](mailto:sarah.kneebone@bgci.org)*

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### **Earth: A graphic look at the state of the Planet** (Carte murale)

Cette carte murale détaillée et en couleur a été réalisée par The Global Education Project, une ONG canadienne. Elle présente, sous la forme de résumés graphiques, un grand nombre de problématiques liées à l'environnement : des changements climatiques à l'extinction des espèces jusqu'aux problèmes de la dette, de la démographie, et des ressources alimentaires. Ce poster se base sur des informations issues des Nations Unies, des agences gouvernementales, de sources universitaires, et d'ONG. La grande quantité de données qu'il contient pourrait servir de base à de nombreuses séances pédagogiques. Consultez le site Internet afin d'obtenir un aperçu des cartes et des descriptions de certains des sujets traités.

*À commander auprès de The Global Education Project, PO Box 241 Mansons Landing, BC, V0P 1K0, Canada ou sur le site [www.theglobaleducationproject.org](http://www.theglobaleducationproject.org). La carte murale de 68,58 cm x 91,44 cm est disponible pliée (15,95 \$US) ou laminée (29,50 \$US), frais d'emballage et de port non compris.*

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### **Sites Internet**

**National Center on Accessibility**  
[www.ncaonline.org](http://www.ncaonline.org)

Le National Center on Accessibility est un programme issu de la collaboration entre l'Université d'Indiana et le USA National Park Service. Il a été conçu pour promouvoir l'accès aux activités récréatives pour les personnes présentant des handicaps ou des difficultés. Le NCA propose des cours par correspondance sur l'amélioration de l'accès, effectue des recherches liées aux problématiques d'accès, et apporte des conseils techniques. Son site Internet contient des résultats de recherches, des renseignements sur la formation, des études de cas sur les bonnes pratiques ainsi qu'une lettre d'information gratuite. Une liste de distribution a été établie afin de

jardines botánicas del Reino Unido. Además de esta información, el directorio contiene detalles sobre las habilidades y la experiencia que los miembros de la red pueden compartir, ayudando así a reforzar la conexión entre estos.

*Un numero limitado disponibles a través del BGCI – contacten a [sarah.kneebone@bgci.org](mailto:sarah.kneebone@bgci.org)*

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### **Earth: A graphic look at the state of the Planet** La Tierra: una ilustración gráfica del estado del planeta (cartel)

Este cartel detallado y a todo color está producido por el Global Education Project (proyecto global de educación), una ONG canadiense. Facilita un resumen gráfico de muchos temas medio ambientales; desde el cambio climático y la extinción de las especies a la deuda, la población y la alimentación del planeta. El cartel utiliza información de las Naciones Unidas, agencias gubernamentales, fuentes académicas, y ONGs. La gran cantidad de datos que contiene puede ser la base de muchas sesiones educativas. Utilizen la página web para revisar el cartel y las descripciones de algunos de los temas que contiene.

*ISBN 0-9731864-2-9. The Global Education Project, PO Box 241 Mansons Landing, BC, V0P 1K0, Canadá o a través de su página web [www.theglobaleducationproject.org](http://www.theglobaleducationproject.org). El cartel mide 67.5cm X 90cm y se puede conseguir doblado (US\$15.95) o plastificado (US\$29.50) mas gastos postales.*

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### **Páginas Web**

**National Center on Accessibility**  
[www.ncaonline.org](http://www.ncaonline.org)

El National Center on Accessibility (Centro Nacional para la Accesibilidad) es un programa de colaboración entre a Universidad de Indiana y el National Park Service (Servicio de Parques Nacionales) de Estados Unidos. Está diseñado para facilitar el acceso de las personas discapacitadas a las actividades recreativas. El NCA ofrece cursos de enseñanza a distancia sobre el problema, investiga temas de acceso y ofrece consejos técnicos. La página web contiene los resultados de

undertakes research into access issues and provides technical advice. Its website contains research findings, information about training, best practice case studies and a free newsletter. A list serve has been set up to keep members up to date with news on access developments.

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#### **European Environmental Toolkit for Citizens**

[http://europa.eu.int/comm/environment/toolkits/index\\_en.htm](http://europa.eu.int/comm/environment/toolkits/index_en.htm)

This site is part of the European Union's Environmental Portal. It provides access to two resources. The first is 'Jiffy's Eco-quiz', an information-packed ecological-awareness quiz that could be used with students to explore their understanding of sustainable living. The second is the European Environmental Toolkit, a database of education and communication resources (such as books, games, websites, and activities) that aims to encourage environmentally-friendly behaviour. The database is searchable by country, language, audience, resource type and topic. The website can be accessed in almost all European languages.

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#### **IUCN Commission on Education and Communication**

E-newsletter

Subscribe via the website

<http://www.iucn.org/themes/cec/newsletter/suscribe.htm>

**The Commission on Education and Communication (CEC)** is one of IUCN's six Commissions; formal knowledge networks comprising expert volunteers entrusted to develop and advance the institutional knowledge, experience and objectives of IUCN. This new monthly newsletter provides details about CEC meetings, initiatives and reports. Available to everyone, the newsletter is intended to keep readers informed about international environmental education policy.

maintenir les membres au courant des nouveautés concernant les évolutions en terme d'accès.

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#### **Kit Européen d'Outils Environnementaux pour les Citoyens**

[http://europa.eu.int/comm/environment/toolkits/index\\_fr.htm](http://europa.eu.int/comm/environment/toolkits/index_fr.htm)

Ce site fait partie du Portail Environnemental de l'Union européenne. Il propose l'accès à deux ressources. La première est le « Jiffy's Eco-quiz », un quiz regorgeant d'informations sur la sensibilisation à l'écologie, exploitable avec des étudiants pour explorer leur compréhension d'un mode de vie durable. La seconde est le Kit Européen d'Outils Environnementaux, une base de données de ressources pédagogiques et de communication (telles que des ouvrages, des jeux, des sites Internet, et des activités) visant à encourager un comportement en faveur de l'environnement. Il est possible d'effectuer des recherches dans cette base de données, par pays, par langue, par public, par type de ressource et par thème. Le site Internet est accessible dans pratiquement toutes les langues européennes.

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#### **Commission de l'Éducation et de la Communication (CEC) de l'IUCN**

Lettre d'information électronique

Y souscrire sur le site web

<http://www.iucn.org/themes/cec/newsletter/suscribe.htm>

**La Commission de l'Éducation et de la Communication (CEC)** est l'une des six commissions de l'IUCN, réseaux de connaissances formelles comprenant des bénévoles experts chargés de développer et de faire avancer les connaissances, l'expérience et les objectifs institutionnels de l'IUCN. Cette nouvelle lettre d'information mensuelle apporte des détails des réunions, des initiatives et des rapports de la CEC. Ouverte à tous, la lettre d'information a pour but de maintenir les lecteurs informés des politiques internationales en matière d'éducation à l'environnement.

la investigación, información sobre la enseñanza, ejemplos de casos de mejores prácticas y un boletín informativo gratis. Se ha establecido una lista de servicio para que los socios se mantengan al día con las novedades del tema.

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#### **European Environmental Toolkit for Citizens**

Caja de herramientas medio ambiental para el ciudadano

[http://europa.eu.int/comm/environment/toolkits/index\\_en.htm](http://europa.eu.int/comm/environment/toolkits/index_en.htm)

Estas páginas forman parte del portal de medio ambiente de la Unión Europea. Permite el acceso a dos recursos. El primero es 'Jiffy's Eco-quiz', preguntas cargadas de información sobre la conciencia medio ambiental que pueden ser utilizadas para investigar el nivel de comprensión de los estudiantes de la vida sostenible. El segundo es la caja de herramientas medio ambiental, una base de datos de recursos educativos y de comunicación (tal como los libros, juegos, páginas web y actividades), con la intención de fomentar un comportamiento positivo para el medio ambiente. El banco de datos se puede acceder por país, idioma, público, tipo de recurso y tema. Las páginas web son asequibles en la gran mayoría de los idiomas europeos.

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#### **IUCN Commission on Education and Communication (Comisión de Educación y Comunicación de la IUCN)**

Boletín electrónico.

Suscribe a través de la página web

<http://www.iucn.org/themes/cec/newsletter/suscribe.htm>

**La Commission on Education and Communication (CEC) (Comisión de Educación y Comunicación)** es una de las seis comisiones de la IUCN; redes oficiales de conocimiento que consisten de un voluntariado experto dedicado a desarrollar y avanzar el conocimiento institucional, la experiencia, y los objetivos de la IUCN. Este nuevo boletín mensual facilita detalles sobre las reuniones de la CEC, sus iniciativas y sus informes. Asequible a todos, el boletín intenta mantener al lector informado sobre la política internacional de educación medio ambiental.

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# New website design for BGCI

**www.bgci.org** has been upgraded to incorporate a range of new features and content. The new system allows us to display more information in more languages and from more sources, making the site richer and more dynamic. We have a new design to tie in with our publications, and we have updated the structure so it's easier to navigate.

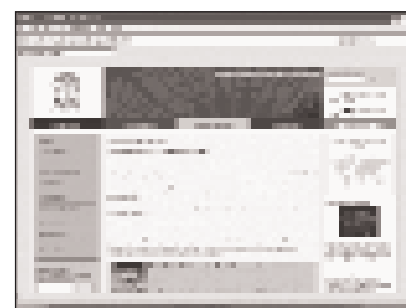
New features include:

- **Improved Garden Pages editing** - login and update your garden's pages on [www.bgci.org](http://www.bgci.org) - add pictures and an introductory text, tell us about your activities and link to relevant articles from our archives;
- **Improved site, garden and plant searches** - we've improved the technology behind our search engines so it's easier to find the content you are looking for;
- **Journal archives** - we are indexing back issues of *BGJournal*, *Roots* and our email bulletin *Cultivate* in a year-by-year archive of journals;
- **Improved language support** - we have more features than ever before in more languages - including 'Translate this page' links and a home page greeting in multiple languages;



- **Improved accessibility** - the site has been built and tested to work in more browsers and a text-only version of the site is made available through Loband;
- **Dynamic content** - allowing us to instantly update pages throughout the site with the latest information and news;

...and much more. All our key resources are still there for download and we are continually developing and improving the site. We always welcome your feedback



Visit [www.bgci.org](http://www.bgci.org) and find out everything you need to know about botanic gardens and education.