A vital role for zoo educators in plant conservation

by Sarah Kneebone

Education Officer, Botanical Gardens Conservation International

Abstract

Plants are a vital part of the world's biodiversity and an essential resource for human well-being. They play a key role in maintaining basic ecosystem functions and are essential for the survival of the world's animal life. Yet, despite our reliance on plants, a crisis point has been reached – it is thought that between 60,000–100,000 plant species are threatened worldwide (Global Strategy for Plant Conservation 2002).

In 2002, a Global Strategy for Plant Conservation (GSPC) was legally adopted by all governments who are signatories to the Convention on Biological Diversity. Using a clear set of targets, it provides a framework for actions to bring about plant conservation, sustainable use, benefit-sharing and capacity building at global, regional, national and local levels with the ultimate goal of halting the loss of plant diversity.

Target 14 of the strategy involves "promoting education and public awareness about plant diversity: the importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes". Botanic Gardens Conservation International (BGCI) is the facilitating partner for Target 14 and has been working on consultations to produce targets and milestones for its achievement. As zoos and zoo educators are one of the major stakeholders within the biodiversity education field, BGCI is anxious to gain their input.

Introduction

The Global Strategy for Plant Conservation (GSPC) outlines a series of targets through which the ultimate aim of halting the current and continuing loss of plant diversity can be achieved.

It was initiated at the Botanical Congress in St Louis, USA, 1999, with a call for plant conservation to be recognised as an urgent international priority. Following this, interested parties met in Gran Canaria, Spain, and produced a declaration. The declaration was presented to the CBD, who then agreed that a specific strategy for plant conservation was needed. The initial production of the Global Strategy was in conjunction with many national and international organisations, such as World Conservation Union (IUCN), International Plant Genetic Resources Institute (IPGRI), United Nations Environment Programme (UNEP), the Food and Agriculture Organisation (FAO), WWF and United Nations Educational, Scientific and Cultural Organisation (UNESCO). Following the GSPC’s adoption, these organisations now act as facilitating partners to arrange a series of consultations to agree on sub-targets, practical measures and milestones for each adopted target.

What are the aims of the GSPC?

The specific aims of the GSPC can be grouped into five main themes:
- understanding and documenting plant diversity through databases, monitoring of populations, research
- conserving plant diversity, with both in-situ and ex-situ programmes, with special attention to conservation of species with direct importance to human societies
- using plant diversity sustainably, involving trafficking controls and supporting the fair and equitable sharing of benefits
- promoting education and awareness about plant diversity
- building capacity for the conservation of plant diversity through networking and enhancing infrastructure and human resources (GSPC 2002).

The strategy outlines the different aspects of these aims in a series of 16 targets. Each of these is explained with terms and technical rationale. It is these outcome-oriented targets, aimed at achieving a series of measurable goals by 2010, and the integration of national and international initiatives specifically related to plant conservation that makes the GSPC unique. This is the first time that such targets have been adopted under the Convention on Biological Diversity (H. Zedan, 2003).

Why would the GSPC be relevant to zoos?

Many of the targets are particularly pertinent to zoos. If your zoo contains any sort of habitat, or runs species-based or ecosystem-based conservation or education programmes, such as the 2001–2002 Rainforest Campaign led by the European Association of Zoos and Aquaria (EAZA), then you are already actively supporting the aims and objectives of the GSPC. Likewise, if your zoo is involved with national plant collections, training of horticulturalists, conservation research, is a member of any conservation network or teaches about indigenous knowledge and local traditions, then you are making a valuable contribution towards the fulfilment of the GSPC.
Summary of targets for the Global Strategy for Plant Conservation

Target 1:  a widely accessible working list of known plant species as a step towards a complete world flora
Target 2:  a preliminary assessment of the conservation status of all known plant species at national, regional and international levels
Target 3:  development of models with protocols for plant conservation and sustainable use
Target 4*: protection of at least 10% of each of the world's ecological regions effectively conserved
Target 5*: protection of 50% of the most important areas for plant diversity assured
Target 6: at least 30% of production lands managed in a way consistent with the conservation of plant diversity
Target 7: 60% of the world's threatened species conserved in situ
Target 8*: 60% of threatened plant species in accessible ex-situ collections, preferably in the country of origin, and 10% of them included in recovery and restoration programmes
Target 9: 70% of the genetic diversity of crops and other major socio-economically valuable plant species conserved and associated indigenous and local knowledge maintained
Target 10*: management plans in place of at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems
Target 11*: no species of wild flora endangered by international trade
Target 12: 30% of plant-based products derived from sources that are sustainably managed
Target 13*: halting the decline of plant resources and associated indigenous and local knowledge, innovations and practices that support sustainable livelihoods, local food security and health care
Target 14*: the importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes.
Target 15*: the number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this strategy
Target 16: networks for plants conservation activities established or strengthened at national, regional and international levels

Which targets are relevant to zoo educators?

Many of the targets mentioned above also have relevance to zoo educators through their vital work in raising awareness about conservation issues in the general public. Targets 14, 15 and 16 are all “cross-cutting” – they are achieved as part of all other targets within the strategy. Naturally, however, it is Target 14, the incorporation of the importance of plant diversity into public awareness programmes, which is of greatest interest to educators.

Zoos have an enormous audience of approximately 600 million per year (Dollinger, 2002). By using inspirational stories about plants and by fostering increased interest and understanding about the relevance of plants (both within and outside the zoo collection), zoo educators can, and already do, make an enormous contribution to Target 14.

Targets 4 & 5

Lahore Zoo in Pakistan has an in-situ conservation project for the rescue of stranded Indus River dolphins, involving conservation of habitat. Zoo Ljubljana, Slovenia, is situated within a protected area of national forest, partially managed by the zoo (Kneebone, 2004).

Target 8

Paignton Zoo is funding a member of its science department to undertake a PhD investigating the biology of the meadow thistle – a key species in a rare Devon habitat. In addition, it has a plant collection of 5,000 plants from 1,500 species (Paignton Zoo, 2005). Dublin Zoo holds 20 IUCN Red List plant species, including the Chilean monkey puzzle tree which is rare in its native Chile and Argentina (Dublin Zoo, 2005).

Target 10

Sweden’s Parlien Zoo runs education programmes which talk about the ecological problems caused by the introduction of alien plant species and actions to avoid this danger (Kneebone, 2004).

Target 11

Oakland Zoo in the USA has developed a 4th-grade curriculum, public programmes and docent training on endangered species and the tourist trade (Kneebone, 2004).
Target 13
Indigenous and local knowledge about plants has been included on some interpretation in the new jaguar exhibit at Chester Zoo, UK, while Moscow Zoo in Russia works with the Museum of Biology, collecting folklore items and producing projects and performances based on them (Kneebone, 2004).

Target 14
Dublin Zoo ran an exhibition called “Green Scene” in 2004, which had 40,000 visitors. A repeat in 2005 attracted 71,000 (Butler, 2005, pers. com.).

Yokohama Zoo in Japan runs a lecture for university students on the importance of plants and has a hands-on exhibit in the zoo (Kneebone, 2004).

The Belo Horizonte Zoo and Botanic Garden provides signs, educational activities, talks and plays about the life of plants and animals, highlighting the relationship between humans and nature (Evangelista, 2004).

The education department at San Diego has created several “teaching gardens”, including a butterfly garden and a vegetable garden, which are used for education programmes for visitors from three years old and up (Furry, 2004).

However, you don’t actually need to develop your own garden area within the zoo to help deliver a conservation message about plants. Several zoos have joined forces with other local sites to provide their school groups and visitors with a more holistic experience. One example is that of the very popular five-day ZooBot Camp, run in summer for children around Tucson, USA. Mornings are spent behind-the-scenes with art projects and science experiments at Reid Park Zoo, while in the afternoons participants find botanical inspiration at the Tucson Botanic Gardens.

More information and examples of how zoos are effectively supporting the targets of the GSPC can be found on the BCGI website: http://www.bgci.org/education/what_zoo_doing.html

What are the implications for zoos?
There are many aspects of work for the Global Strategy for Plant Conservation that zoos and zoo educators can become involved with and use to their advantage:

• supporting the development of education programmes to implement Target 14
• developing the capacity of all staff to implement Target 14
• ensuring that educators are represented in workshops concerned with the implementation of other GSPC targets
• becoming involved with stakeholder meetings within their country
• working with CEPA* to implement Target 14 (e.g. publicise the work of zoos, act as an advisory body)

*CEPA is the Communication, Education and Public Awareness programme, created by the CBD to address Article 13, i.e. education about biodiversity. The CEPA portal website address is http://www.biodiv.org/programmes/outreach/cepa/home.shtml

Conclusions
The Global Strategy for Plant Conservation is an ambitious and important agreement with the overall aim of stopping the loss of plant biodiversity. In order to achieve this goal, many organisations and stakeholders need to work together. With their plant collections, existing conservation work, education programmes and huge numbers of visitors, zoos have an important role to play in the implementation of the Global Strategy for Plant Conservation. BGCI is keen for zoos to become more involved in the consultations and stakeholder processes currently taking place and for zoo educators to take the ideas and implications of the GSPC back to their organisations for further consideration and action.

For any more information on the Global Strategy for Plant Conservation contact BGCI:
www.bgci.org
julia.willison@bgci.org
sarah.kneebone@bgci.org
BGCI is a not-for-profit organisation which networks organisations concerned with plant conservation. These include mostly botanic gardens, but we also have a number of zoological gardens including San Diego, Paignton, Chester and Bristol. We provide support, advice, grants, manuals and training courses, allowing members to improve their capacity and work in plant conservation.

References

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This paper is adapted from a presentation given at the International Zoo Educators Congress, Hong Kong, September 2004 and from a paper entitled ‘A vital role for botanic garden educators in plant conservation’, published in Roots 2:1 ‘International Agendas: Implications for botanic garden education’. It can also be found on the BGCI website at http://www.bgci.org/education/IZE_paper.html