

## Action Proposals

### 10.1 The conservation of cycad habitats

**Objective:** *To establish effective protection for remaining cycad populations and habitat, especially in Asia and the New World.*

#### 10.1.1 Develop links with organisations focusing on biodiversity hotspots

Cycad conservation is very strongly linked to habitat conservation, especially in Asia and the New World. These areas are often congruent with areas of general plant diversity (e.g., Mexico, China, Vietnam) which means that conservation organisations focusing on global hotspots will be trying to conserve some of the same habitats. We must therefore ensure that cycad conservation actions complement other actions to save threatened habitats. Cycads could be effectively used as flagship species in some areas.

##### Activities and responsibility

- Designate a member of the Cycad Specialist Group to liaise with organisations such as Conservation International, WWF, and the IUCN Species Survival Commission.  
*Responsibility:* Cycad Specialist Group.  
*Timeframe:* should take place when group is reconstituted for the 2001–2004 period.
- Circulate a list of cycads associated with designated biodiversity hotspots.  
*Responsibility:* Cycad Specialist Group.  
*Timeframe:* 2003–2004.
- Develop profiles on cycad species that could be used by Conservation International, WWF, or IUCN as flagship species for specific biodiversity hotspots. Animal and bird species have been used in this way and cycads could be used to highlight problems in specific hotspots.  
*Responsibility:* Cycad Specialist Group, together with CI, WWF, and IUCN.  
*Timeframe:* 2003–2004.

#### 10.1.2 Evaluate and promote cycad nurseries linked to wild populations

The prime reason for promoting local cycad nurseries is that they provide an incentive for local communities to preserve cycad habitat. Existing nurseries have shown that involving local people does have benefits, but there are several key activities that are required to promote this activity.

##### Activities and responsibility

- Critically evaluate the successes and failures of pilot projects in Mexico and South Africa to determine whether nurseries do offer sustainable benefits to local communities.  
*Responsibility:* development agencies and conservation organisations such as GTZ, Fauna and Flora International, CONABIO, and Mpumalanga Parks Board (South Africa) who have invested in the development of nurseries, with collaboration by the Cycad Specialist Group.  
*Timeframe:* 2004.
- Identify cycad taxa that are suitable for community nurseries based on ease of propagation, market demand, and potential supply rates.  
*Responsibility:* Cycad Specialist Group together with cycad societies and the nursery industry.  
*Timeframe:* 2003.
- Develop criteria for the accreditation of cycad nurseries. The criteria should be based on the extent to which nursery activities benefit wild cycad populations and should form part of a marketing strategy for plants from sustainable use nurseries.  
*Responsibility:* Cycad Specialist Group together with development and conservation agencies.  
*Timeframe:* 2004.
- Develop a marketing strategy for community nurseries. This is one of the weaknesses in the current nursery programme where nurseries linked to wild populations have to compete with nurseries elsewhere.  
*Responsibility:* conservation and development agencies involved with local nurseries.  
*Timeframe:* ongoing.
- Develop additional nurseries based on the analysis of suitable taxa and the outcomes of the evaluation of existing nurseries.  
*Responsibility:* Cycad Specialist Group together with development agencies and local communities.  
*Timeframe:* 2003–2010.

### 10.2 *Ex situ* conservation

**Objective:** *To develop and promote a network of botanical gardens that (i) will ensure that all Critically Endangered cycad taxa are represented in genebanks within 3 years and all Endangered taxa within 5 years, and (ii) can provide the expertise and plant material required to support community nurseries and reintroduction programmes.*

### 10.2.1 Obtain more comprehensive coverage of cycad taxa in genebanks

Although the few gardens now involved have built up collections of many threatened species, there are still species that are not in genebanks and there are inadequate backup collections. Such backup collections are crucial to deal with natural disasters and mishaps. Additional gardens need to be encouraged to develop genebanks, even if they focus on only one or a few species. There is a special need to develop genebanks within cycad range states because it will be easier to maintain mutualisms in these collections and they can form part of local conservation programmes. The facilities and expertise that exist in the current network of gardens involved in cycad conservation can form the framework for a broader network of gardens.

#### Activities and responsibility

- Set up genebanks for priority taxa. The emphasis for developing additional collections should be given to priority taxa (*Chigua*, *Ceratozamia* and *Microcycas*) and the Critically Endangered and Endangered species that are not represented in genebanks.  
*Responsibility:* botanical gardens together with the Cycad Specialist Group.  
*Timeframe:* 2003–2005.
- Develop a protocol for duplicate collections and exchange of material between gardens housing cycad genebanks.  
*Responsibility:* botanical gardens together with the Cycad Specialist Group.  
*Timeframe:* 2003.
- Expand the number of gardens involved in cycad conservation by identifying gaps and communicating with botanical gardens, especially in range states.  
*Responsibility:* Cycad Specialist Group together with Botanic Gardens Conservation International.  
*Timeframe:* 2005.

### 10.2.2 Develop species recovery programmes linked to *ex situ* collections

The *ex situ* genebanks housed in botanical gardens represent the best material for restoring extinct populations or those that are collapsing. The gardens involved need to develop proper species recovery programmes that identify and deal with the main threatening processes, as well as the obstacles associated with restoring plants to the wild.

#### Activities and responsibility

- Review the data on past attempts to reintroduce cycads to identify successful methods.  
*Responsibility:* botanical gardens and Cycad Specialist Group.  
*Timeframe:* 2005.

- Set up experiments to test the success of different reintroduction methods.  
*Responsibility:* botanical gardens, restoration ecologists, Cycad Specialist Group, IUCN Reintroduction Specialist Group.  
*Timeframe:* 2003–2008.

## 10.3 Trade monitoring and control

**Objective:** *To reduce the destructive collection of wild plants by promoting and facilitating trade in artificially propagated plants and the sustainable harvest of seeds from wild populations.*

### 10.3.1 Review current trade and its impact on wild populations

A CITES trade review is required to establish which species are being traded internationally on a regular basis and whether this trade poses any threat to wild populations. There are several key elements to this review process. First, we need to acknowledge that data on legal trade in cycads provides only a limited perspective because there is a substantial illegal trade. A comprehensive review must therefore include an assessment of the illegal trade. This is not going to be easy but there should be data on illegal shipments entering importing countries. In addition, Range States (countries of origin), or cycad biologists, will often know which populations are being targeted by collectors and the levels of harvesting can be compared with levels of trade recorded by CITES. Second, it is imperative to assess all cycads on CITES Appendix I and Appendix II and not simply those on Appendix II. The most threatened cycads are those on Appendix I and it is only by looking at these species that we can evaluate the effectiveness of CITES and the impact of trade on cycads species that are threatened by trade. The current listings of cycads on the CITES appendices have been in place for nearly thirty years with only a few minor changes. The initial listings took place when the state of cycad taxonomy was far more muddled than it is now and there is a clear need to review the species listed on the CITES appendices. Specific attention needs to be paid to *Stangeria*, which is currently listed on Appendix I despite apparently low levels of international trade, and *Encephalartos* where all species are listed on Appendix I.

#### Activities and responsibility

- CITES Significant Trade review. The 10th meeting of the Plants Committee agreed to review the trade in cycads and this needs to be initiated as soon as possible.  
*Responsibility:* CITES Secretariat with support from the Cycad Specialist Group.  
*Timeframe:* 2003.
- Revision of CITES listing for cycads. The Significant

Trade review will almost certainly show that the current listings do not reflect the degree of threat through international trade. The appendices should therefore be modified accordingly.

*Responsibility:* CITES Secretariat, Cycad Specialist Group, and Range States.

*Timeframe:* submission to the COP in 2005.

### 10.3.2 Facilitate sustainable trade in cycad seeds

Propagation of cycads from seeds represents one way of reducing the threat to wild populations. Restrictions on trade in seeds can therefore end up jeopardising attempts to conserve cycads in the wild. One of the necessary actions is to facilitate trade in seeds. For species listed on CITES Appendix I, Management Authorities often require a non-detriment finding from their Scientific Authority, even for exports from non-range states. It is essential that this process does not impede legitimate trade in cycad seeds. Information needs to be disseminated to Management and Scientific Authorities in the main trading countries so that they are aware of the latest information and can make decisions quickly.

#### Activities and responsibility

- Review current research data on the impacts of seed harvesting on cycad population dynamics.

*Responsibility:* Cycad Specialist Group.

*Timeframe:* 2003.

- Evaluate extent of trade in seeds of wild origin, especially for CR and EN taxa. This should form part of the CITES Significant Trade review.

*Responsibility:* CITES Secretariat, Cycad Specialist Group, exporting and importing countries.

*Timeframe:* 2004.

- Undertake research on seed production and recruitment in cycad populations, focusing on species with representative life histories.

*Responsibility:* population biologists, Cycad Specialist Group.

*Timeframe:* 2003–2008.

### 10.3.3 Develop a conservation culture among cycad collectors

The global community of cycad enthusiasts represents a considerable potential resource for conservation. At present, collectors are one of the major threats and their impact needs to be reduced. At the same time, the interests of enthusiasts could be channelled in a positive way.

#### Activities and responsibility

- Encourage the major cycad societies to appoint a conservation officer and to develop conservation programmes.

*Responsibility:* International Cycad Society, Cycad Society of South Africa, Palm and Cycad Society of Australia together with Cycad Specialist Group.

*Timeframe:* 2003.

- Elect a representative of the cycad societies on to the Cycad Specialist Group.

*Responsibility:* Cycad Specialist Group and cycad societies.

*Timeframe:* elected for the 2001–2004 period.

- Promote conservation projects through the society journals.

*Responsibility:* Cycad Specialist Group, local conservationists, cycad societies.

*Timeframe:* ongoing.

## 10.4 Research

*Objective:* To develop and promote a research programme that provides a better basic understanding of cycad diversity, distribution, threats, and recovery.

### 10.4.1 Survey cycad populations in poorly known areas

In general, taxa that are poorly known come from areas that have been poorly surveyed. Experience has shown that good fieldwork results in many new species and more accurate assessments of threatened status. Field surveys of cycads in poorly studied regions are therefore an essential activity. The priority areas are parts of the New World, Asia, and Central Africa.

#### Activities and responsibility

- Identify priority areas and organise field surveys.

*Responsibility:* Cycad Specialist Group, cycad biologists, conservation agencies.

*Timeframe:* 2003–2010.

- Encourage cycad enthusiasts to record and submit data on cycad distributions and cycad numbers.

*Responsibility:* cycad societies, Cycad Specialist Group, conservation agencies.

*Timeframe:* 2003–2010.

### 10.4.2 Develop a consistent taxonomy for cycads

Cycad taxonomy has been confused and there has been considerable debate about the exact identity of certain taxa. This has resulted in problems for determining the threatened status. It is therefore important to resolve these problems as soon as possible.

#### Activities and responsibility

- Hold a workshop to develop principles and

recommendations for a consistent, practical, and informative taxonomy of the living cycads.

*Responsibility:* Montgomery Botanical Centre, cycad taxonomists.

*Timeframe:* 2003.

### 10.4.3 Promote horticultural research to increase the availability of artificially propagated plants

It is clear that when demand for plants exceeds the supply from cultivated sources, there is more pressure to remove plants from the wild. Recent research has shown that it is possible to improve germination, increase growth rates of seedlings, and develop plants from tissue culture for species with low seed set, which all contribute to more plants in cultivation. These research activities need to be continued, especially for species under threat in the wild, and the results need to be more widely applied by specialist growers and conservation agencies.

#### Activities and responsibility

- Identify the best methods for the propagation and cultivation of species that are threatened by trade.

*Responsibility:* research community.

*Timeframe:* 2003–2010.

- Disseminate the results of existing and future research work on cycad propagation and cultivation to enthusiasts, growers, botanic gardens, and conservation agencies.

*Responsibility:* cycad societies, Cycad Specialist Group.

*Timeframe:* 2003–2005.

### 10.4.4 Study the persistence of small populations and identify the key factors influencing decline and recovery

Many cycads now exist as small isolated populations but we have very little understanding of how this affects their survival. Population studies are required to determine whether these populations are doomed to die out or whether cycads are adapted to survive as small populations.

#### Activities and responsibility

- Determine whether cycad populations are limited by the local extinction of pollinators.

*Responsibility:* research community, Cycad Specialist Group.

*Timeframe:* 2003–2005.

- Determine whether insect pollinators can be reintroduced to cycad populations.

*Responsibility:* research community, Cycad Specialist Group.

*Timeframe:* 2003–2005.

- Determine whether small populations are capable of natural recovery and determine the threshold below which recovery is unlikely to occur.

*Responsibility:* research community, Cycad Specialist Group.

*Timeframe:* 2003–2005.

## 10.5 Provision of information

**Objective:** to make information on cycads and their conservation accessible to policy makers, conservationists, and enthusiasts.

### 10.5.1 Update and disseminate information on cycads

This Action Plan brings together information that may not previously have been accessible. The value of the current information will depend on how effectively it reaches the people who make decisions that affect cycads in the wild. It is therefore essential to package this information in various ways so that it reaches a wide range of decision makers. At the same time, the information provided here will soon be out-of-date and plans must be put in place to provide regular updates.

#### Activities and responsibility

- Provide an up-to-date taxonomy of cycads. The electronic media has made it possible to disseminate an up-to-date list of recognised cycad species. A list has been set up at <http://PlantNet.rbg Syd.gov.au> which will provide the latest information on cycad species.

*Responsibility:* Ken Hill, Royal Botanic Gardens, Sydney.

*Timeframe:* ongoing.

- Revise and publish the results of the Red List assessments of all cycad species. The Cycad SG has accepted responsibility to act as the Red List Authority for cycads. This means that the SG will need to undertake regular revisions of the threatened status of cycads which will be included in revisions to the IUCN Red List.

*Responsibility:* Cycad Specialist Group.

*Timeframe:* ongoing.

- Compile and publish a Top 50 booklet and website as part of the SSC Top 50 series. The series is to be used as a campaigning and marketing tool to raise awareness on plant conservation issues. The cycad Top 50 booklet should be a compilation of 50 seriously threatened species for which good stories (with illustrations) are available so that they can be used as an effective PR product targeted by the media at the general public and decision-makers.

*Responsibility:* Cycad Specialist Group and SSC Plant Programme Officer.

*Timeframe:* 2003.