

IV WORLD CONGRESS ON NATIONAL PARKS AND PROTECTED AREAS  
Caracas, Venezuela - February, 1992

*Report on Workshop IV.6*  
**Managing Protected Areas to**  
**Conserve Genetic Resources**

*Agreed upon through workshop consensus 1800 hr, 20 February*

*Chair: Vernon Heywood*

*Organizer: IUCN*

*Rapporteur and Vice-Chairs: G. Brent Ingram, Juan Black, Louis Olivier*

*Date: 19 and 20 February, 1992*

*Number of sessions: 3*

***Workshop Aims***

- 1. To promote the conservation of genetic resources in protected areas and particularly of those species of economic and scientific importance.*
- 2. To consider scientific, planning, management and research aspects of establishing genetic reserves, gene sanctuaries, seed orchards, and gene resource management units in systems of protected areas including marine and freshwater ecosystems.*
- 3. To make this expertise and information more widely available.*
- 4. Explore ways of complementing in situ conservation in protected areas with appropriate ex situ facilities, such as botanic gardens, field gene banks, cold storage, and experience to achieve more efficient genetic resource conservation.*

***Workshop Attendance***

*50+ participants from a wide range of countries, agencies and organisations*

***Workshop Structure***

- The first session was devoted to introductory reviews of the main themes followed by a discussion of draft recommendations.*
- The second session was a series of case studies from different region and situations.*

*· The final session was a discussion and preparation of conclusions.*

***Recommendations***

**Modifications suggested to general Congress resolutions:**

*2, 3, 8, 12, 16, 17, 19*

**Technical Resolutions on**

**Managing Protected Areas to Conserve Genetic Resources**

*· Advantage should be taken of the world's protected area system for the establishment of regional, national and global networks of in situ genetic resource conservation especially in regions of higher levels of biological diversity. Policies should be developed to encourage sustainable and multiple-use concepts for such areas which appreciate the full range of genetic resources.*

*· Protected area managers should be encouraged to include genetic resource conservation in their policy objectives and current management policies. Technical support from experts and institutes, involved with genetic resources, should be expanded and formalized.*

*· Increased resources and funding should be made to protected area systems to allow inventorying, monitoring and conservation of the genetic resources contained therein. Priorities should be for regions with high levels of biological diversity.*

*· Since in most cases, the more significant genetic diversity of the species that occur in protected areas is to be found outside such areas, action needs to be taken to expand and diversify these networks to achieve more comprehensive coverage of genetic variation across districts and regions.*

*· Establish an International Technical Working Group on the in situ conservation of genetic resources in cooperation with IUCN, IPGRI (formerly IBPGR), FAO, BGCI and other international technical agencies.*

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- *The conservation of genetic resources is a complex and costly procedure and governments should allocate substantial resources and encourage an integrated approach that includes in situ, inter situ and ex situ conservation.*
- *Government, financial and technical support should be given to the development of local and national capacity for research and management for maintenance and utilization of genetic resources.*
- *Substantial effort should be made to identify and monitor the more ubiquitous processes and activities of genetic erosion which have or are likely to have adverse impacts on genetic resources in protected areas. Where possible, concerns for genetic erosion should be integrated into broader frameworks of environmental impact assessment. Some examples are pollution, unsustainable harvesting of biological resources, release and spread of alien species, and development, use and release of genetically modified organisms. It is necessary to develop and implement adequate measures and strategies to mitigate the impacts of the above-mentioned processes.*
- *In designing in situ conservation programmes, issues of equity, such as Farmers' Rights, the socio-economic contexts of rural communities, and the aspirations of local people should be fully taken into account.*
- *Special consideration should be given to the particular problems of conservation of genetic resources in mountain ecosystems.*

**Action Plan Tasks**

1. *to ascertain which species with genetic resources occur in current networks of protected areas*
2. *to intensify surveys flora and fauna in protected areas and to start ecogeographical surveying for some selected target species*
3. *to assess, as fully as is feasible, the portions of gene pools (and respective species) which are and which are not presently included and sustained in protected areas as well as longer-term viability*

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4. *identify, access and document the actual status of target species and to analyze long-term viability*

5. *to develop methodologies for faster, cheaper, and "manager-friendly" surveying and genetic diversity assessment*

6. *to promote the standardization of documentation, data bases, geographic information systems and exchange of data and compilation, documentation and dissemination of case studies*

7. *to train managers of protected areas in aspects of inventory of genetic diversity assessment as well as conservation, management and monitoring*

8. *to assist protected area managers in a practical way to set up monitoring programs for genetic resources and associated conservation and management plans*

**Guidelines**

*The proposed technical group will develop guidelines through various exchanges and publications on the following topics as related to the in situ conservation of genetic resources - with an initial emphasis on plants.*

**A. definitions of resources**

*genetic resources*

*gene pools*

*key populations, species and taxa*

*types of species*

*wild*

*weedy*

*cultivated primitive versus modern varieties*

*identified versus potential genetic resources*

**B. priority gene pools / categories of genetic resources**

*crops and other commodities*

*subsistence and local use*

*environmental rehabilitation*

*wood and fuelwood*

*trees species and multi purpose perennials*

*species of scientific and cultural importance*

*primitive cultivars and weedy and forage forms*

*unexploited species in the primary, secondary and tertiary gene pools of*

*commodity groups - wild relatives of crops*

*keystone mutualists*

*sources of information on species, lists*

***C. user and consumer groups***

*subsistence*

*commodity*

*conventional plant breeding*

*biotechnology*

*forestry*

*pharmaceutical enterprises*

*plant practitioners*

*seed distributors*

*nurseries*

***D. surveying and monitoring methods***

*taxonomic verification*

*floristic inventories*

*life forms, life histories and reproductive systems*

*distribution and site data*

*review of systems of protected areas*

*gap analysis*

*analysis of genetic erosion*

*studies of genetic variability - ecogeographical surveying*

*genetic architecture of populations*

*use of spatial data*

*remote sensing and geographic information systems*

*ecological data*

*cultural data*

*access and availability of data*

*quality of data*

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*access for procurement of germplasm  
ethics of surveying and procurement  
ex situ sampling and growing out  
documentation systems*

***E. planning, management and technical guidelines***

*protected populations - numbers of wild populations  
protected populations - sizes of wild populations  
protected populations - sampling and representation of biophysical and  
cultural factors  
management of gene pool flows  
introgression between wild, weedy and cultivated species  
management approaches - laissez-faire versus intensive versus manipulation  
- experimentation - restoration  
supplementary techniques - the role of ex situ methods*

***F. implications of Social and economic issues for research, planning and  
management***

*control of exploitation of populations and procurement of germplasm  
pressures from current and potential user groups  
subsistence versus commodity contexts for conservation  
centralized versus local management and co-management  
distribution of and access to material*

***Conclusions***

*There was almost universal consensus amongst speakers and other  
participants on the following points.*

- inadequacy of current systems of protected areas for genetic  
resource conservation*
- the need for a genetic-resource-oriented approach to expansion,  
design and management of protected areas*
- the need for greatly expanded programmes of inventorying and  
monitoring in current protected areas*
- the need for greatly expanded programmes of ecogeographical*

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*surveys and associated "gap analysis" of current protected areas in terms of long-term viability of target species and genetic variation*

*· the need for exchanges on technical aspects of in situ conservation.*

***Immediate follow-up required***

*A technical group will need to be formalized by the end of 1992 and should involve IUCN in cooperation with the relevant UN technical agencies, the CGIAR centres and other international and national institutes and non-governmental organizations.*