

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.