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Protected areas and CWR conservation

Conservation actions at various levels, including the reserve level and the species/population level are necessary actions to appropriately control, mitigate or eliminate the threats to CWR.

What is a protected area?

According to the International Union for Conservation of Nature (IUCN), a protected area (PA) is: '*a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values*' [1].

Protected areas include at least 114,000 sites and occupy more than 19 million km^2, representing 12.9% of the earth's land surface. They vary immensely in size and exhibit a great degree of diversity in terms of their conservation objectives, the degree of human activity permitted within them and the extent of stakeholder involvement.

1 - Dudley, N. (ed.) (2009) *Guidelines for Applying Protected Area Management Categories*, International Union for Conservation of Nature (IUCN), Gland, Switzerland.

CWR and PA management

Those engaged in targeted *in situ* species conservation must be aware of the main issues involved when seeking to cooperate with PA managers on management interventions for target species. The quality and effectiveness of management varies considerably and challenges include land encroachment, illegal logging, unsustainable agricultural practices in buffer zones and lack of proper management mechanisms and institutional capacity.

Most PAs do not include genetic management as a objective. The management needs of the populations of the CWR target species are quite specific and separate from the management of the protected area itself. In order to undertake the targeted management of CWR within PAs, an assessment will need to be made to determine the required changes to existing management plans in favour of the maintenance of healthy populations of CWR, as well as what needs to be done to allow implementation of specific interventions to ensure the survival target populations.

THE ROLE OF PAs IN CWR CONSERVATION

The conservation strategies of most countries are underpinned by a system of protected areas; however, the anticipated impacts of climate change on CWR suggest that protected areas may not be the most appropriate or effective tool for in situ conservation CWR in the long-term.

The Global Strategy for Plant Conservation (GPSC) includes relevant targets for protected areas:

Target 4: At least 10% of each of the world's ecological regions effectively conserved. Effective conservation refers to the areas being managed in such a way that the favorable conservation status for plant species and communities is achieved.

Target 5: Protection of 50% of the most important areas for plant conservation. Areas are defined by criteria like endemism, species richness, uniqueness of habitats and taking into account the provision of ecosystem services.

MANAGEMENT RESPONSES TO THREATS FACING PAs

Regeneration: the recovery of natural integrity following disturbance/degradation. Minimum human intervention.

Restoration: returning existing habitats to a known past state or natural condition by repairing degradation, removing introduced species, or by reinstatement.

Reinstatement: reintroduction of species or elements of habitat known to have existed at a previous time.

Enhancement: the introduction of additional individuals of species or elements of habitat naturally existing in the area.

Modification: altering a location to suit proposed uses compatible with its natural state.

Protection: management of impacts to ensure that natural significance is retained.

Maintenance: continuous protective care of biological diversity and geodiversity.

Sources:

IUCN (2002) IUCN Technical Guidelines on the Management of Ex-situ populations for Conservation, approved at the 14th Meeting of the Programme Committee of IUCN Council, Gland, Switzerland, 10 Dec. 2002, International Union for Conservation of Nature (IUCN).

Chape, S., Spalding, M. and Jenkins, M. (eds) (2008) The World's Protected Areas. UNEP World Conservation Centre, University of California Press, Berkeley.

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IUCN Protected Area Management Categories

- **CATEGORY Ia:** *Strict nature reserve*
  A strictly protected area set aside to secure biodiversity and geological/geomorphological features; human visitation, use and impacts are heavily controlled.

- **CATEGORY Ib:** *Wilderness area*
  A large, usually unmodified protected area, retaining natural character and influence, without permanent or significant human habitation.

- **CATEGORY II:** *National park*
  A large protected area which is natural or near natural and has been set aside to protect large-scale ecological processes, along with species and ecosystems. Education, recreation and conservation are promoted.

- **CATEGORY III:** *Natural monument or feature*
  A protected area designed to protect a specific natural monument (a landform, submarine cavern, geological feature, etc.). The area is generally quite small, but with high visitor value.

- **CATEGORY IV:** *Habitat/species management area*
  A protected area seeking to protect a particular species or habitats. Many Category IV protected areas need regular, active interventions to address the requirements of particular species or to maintain habitats.

- **CATEGORY V:** *Protected landscape/seascape*
  A protected area where the interaction of people and nature has produced an area of distinct character with significant ecological, biological, cultural and scenic value.

- **CATEGORY VI:** *Protected area with sustainable use of natural resources*
  A large protected area that conserves ecosystems and habitats, together with associated cultural values and traditional natural resource management systems.

Source - Dudley, N. (ed.) (2009) *Guidelines for Applying Protected Area Management Categories*, International Union for Conservation of Nature (IUCN), Gland, Switzerland.

When applying the categories system, the first step is to determine whether or not the site meets the IUCN definition of a PA and then to decide on the most suitable category. Categories I and II are likely to be the most appropriate for CWR conservation, but CWR occur in all types of protected areas. In practice, many countries use different categories and definitions such as state reserves, jungle corridors, sanctuaries, refuges and buffer zones.

A small number of protected areas are also specifically tailored for the genetic conservation of target species such as genetic reserves, gene management zones, *in situ* gene conservation forests, gene parks, genetic resources management units.

Source:

Heywood, V.H. and Dulloo, M.E. [2006 (2005)] '*In situ Conservation of Wild Plant Species – a Critical Global Review of Good Practices*,' IPGRI Technical Bulletin, no 11, FAO and IPGRI, International Plant Genetic Resources Institute (IPGRI), Rome, Italy

Iriondo, J.M., Maxted, N. and Dulloo, M.E. (eds) (2008) *Conserving Plant Diversity in Protected Areas*, CAB International, Wallingford, UK.

TRANSBOUNDARY PAs

A transboundary PA is defined by the IUCN as: '*an area of land and/or sea that straddles one or more borders between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limit of national sovereignty or jurisdiction, whose constituent parts are especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed cooperatively through legal or other effective means*'.

In such areas, interests and concerns of different countries or administrations may be taken into account through representation on steering or management committees.

SACRED GROVES, FORESTS AND SITES

Traditional nature conservation is often practiced as part of a religion-based conservation ethos and includes the protection of small areas of forest as sacred groves or of particular tree specimens as sacred trees. If the management objectives of such sites meet the IUCN definition of a PA and the requirements of a particular category, and if the local religious group desires, sacred natural sites can be formally included in national PA systems.

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PA OWNERSHIP AND GOVERNANCE

Protected areas vary greatly in how they are governed; management structures may change significantly over time. The main types of governance of include[2]:

- **Government** (National; state or province; local; delegated to another government agency; delegated to statutory authority; or delegated to local government or community group)

- **Co-management** (Collaborative; Joint)

- **Private** (Individual; Not-for-profit organization; or Commercial organization)

- **Community** (Indigenous; Local)

2 - Chape, S., Spalding, M. and Jenkins, M. (eds) (2008) *The World's Protected Areas*. Prepared by the UNEP World Conservation Centre, University of California Press, Berkeley.

CASE STUDY: Ankodida - a scared forest

Ankodida is a newly established, community-managed Category V protected area in south-eastern Madagascar; it protects a sacred forest, the former home of a pre-colonial Tandroy king. The forest also plays an important role in the spiritual life of the Tandroy tribe and provides income for local populations.

Six of the protected area's seven zones are composed of traditional village territories, regulated by management contracts. The area also includes a priority conservation zone covering the sacred forest managed by local communities according to traditional regulations. Management focuses on the legal empowerment of area's traditional guardians[3].

3 - Gardner, C.J., Ferguson,B., Rebara, F. and Ratsifandrihama, A.N. (2008) 'Integrating traditional values and management regimes into Madagascar's expanded protected area system: the case of Ankodida'. In: Mallarach, J.-M. (ed.) Protected Landscapes and Cultural and Spiritual Values. Volume 2 in the series Values of Protected Landscapes and Seascapes, IUCN, GTZ and Obra Social de Caixa Catalunya. Kasparek Verlag, Heidelberg.

Activities involved in establishing and maintaining a network of Pas

- Preparation of information and publicity material
- Scientific studies to identify and designate sites
- Consultation, public meetings, liaison with landowners, complaints
- Preparation and review of management plans and strategies
- Establishment and running costs of management bodies
- Provision of staff (wardens, project officers), buildings and equipment
- Consultation – public meetings, liaison with landowners
- Management planning and administration
- Conservation management measures
- Management schemes and agreements with land owners
- Fire prevention and control
- Research monitoring and survey
- Training and education
- Ongoing' management actions
- Restoration or improvement of habitat or status of species
- Land purchase, including consolidation
- Infrastructure for public access, interpretation works, etc.
- Habitat type survey and GIS

Source - Natura 2000

Good governance

IUCN has identified the following principles of good governance in regards to PA management[4]:

- Legitimacy and voice
- Subsidiarity
- Fairness
- Do no harm
- Direction
- Performance
- Accountability
- Transparency
- Human rights

4 - Dudley, N. (ed.) (2009) Guidelines for Applying Protected Area Management Categories, International Union for Conservation of Nature (IUCN), Gland, Switzerland.