

Protected Areas Management Effectiveness Information Module

Methodology Description

Other reports, studies and methods

The authors have reviewed a number of other useful reports and methods which are not covered in detail in this report. Brief summaries are provided below, and further information can be found in the references given here.

1.1 Central Africa Republic – evaluation of ‘conservation potential’ of protected areas

Blom, A., Yamindou, J. and Prins, H. H. T. (2004) Status of the protected areas of the Central African Republic. *Biological Conservation* **118**, 479-487.

A study of the protected areas of the Central African Republic by Blom *et al.* (2004) examined the status of the protected areas of the Central African Republic in light of their potential for long-term protection of biodiversity. It assessed conservation potential as the overall potential for conservation of biodiversity in the mid (10 years) to long-term (50 years). Four groups of factors were evaluated to estimate ‘conservation potential’:

- threats (7 types of threat rated from none to high);
- biodiversity significance (ecosystem representation);
- integrity (destruction, degradation and fragmentation); and
- management (level of law enforcement staff, financial support and community participation).

Existing information from international organisations and the CAR Government were used, combined with other sources including the authors’ experiences and field visits, government sources and interviews.

The data was used to draw some conclusions and make recommendations about the state of the protected area system, to evaluate the ‘conservation potential’ of individual protected areas, and to look at the correlation of the factors.

1.2 African Rainforest Protected Areas

Struhsaker, T. T., Struhsaker, P. J. and Siex, K. S. (2005) Conserving Africa's rain forests: Problems in protected areas and possible solutions. *Biological Conservation* **123**, 45-54.

A study was conducted by Struhsaker *et al.* (2005) to identify the problems facing Africa’s rain forest protected areas (PAs) and identify which variables best correlate with their conservation status. The methodology is based on obtaining information to build 32 variables from a number of sources:

- a questionnaire sent to 36 colleagues working in African forest protected areas,
- analysis of vegetation maps, satellite imagery,
- published and unpublished accounts, and
- direct observations by T. T. Struhsaker from 1966 to 2000.

The information ranged from quantitative data (e.g. human population densities, protected area size and degree of ecological isolation) to qualitative impressions (e.g., conservation status of the PA, effectiveness of law enforcement, and public attitudes).

The study then reported on the state of the protected areas, examined how various factors were correlated with conservation success, and made recommendations for improving protected area effectiveness.

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1.3 Threat analysis in Uganda

Mugisha, A. R. and Jacobson, S. K. (2004) Threat reduction assessment of conventional and community-based conservation approaches to managing protected areas in Uganda. *Environmental Conservation* 31, 233-241.

A study was conducted by Mugisha and Jacobson (2004) in 16 protected areas in Uganda using the 'threat reduction methodology' of Salafsky and Margoluis (1999) to assess the effectiveness of the community-based approach. The method used on-site discussion groups with representatives of community, protected area staff, NGOs and other experts where possible. The discussion groups listed and ranked threats to the protected areas' habitat integrity, quality and ecosystem functioning, by considering the speed at which the threats could harm the PA, their intensity of destruction and the area they could affect. A ranking scale of 1 (minimum) to 5 (maximum) was used. The groups then evaluated the extent to which the threats were being addressed by protected area management, rating the effectiveness from zero to 100%. Threat indices were compared between community-managed and conventional protected areas and an additional index was calculated to consider factors beyond the control of management, such as hydroelectric power dams or guerrilla activities.

The groups also discussed general topics related to community development, natural resource management and environmental concerns to provide a context for the TRA results.

Additional data sources used in the study included document reviews, interviews with government official and questionnaire surveys of protected area wardens.

1.4 Parks Canada

Information on Parks Canada's system monitoring ecological integrity of their parks is set out in two manuals (Parks Canada Agency 2005; 2007)

Parks Canada's approach to monitoring and evaluation is based around two primary elements: monitoring of ecological integrity of parks and periodic State of the Parks Reporting.

The ecological integrity monitoring program is designed to:

- to assess the effectiveness management actions;
- to increase understanding of ecosystem change;
- to find areas where further research is needed, and;
- to serve as an 'ecological baseline' against which general landscape change can be compared.

The structure of the ecological integrity monitoring program is based on the following framework

| Assessing Ecological Integrity | | | |
|--|--|---|---|
| Biodiversity (characteristic of region) | Ecosystem (resilient, potential) | Functions evolutionary | Stressors (unimpaired system) |
| Species richness - change in species richness - numbers and extent of exotics | Succession/ retrogression - disturbance frequencies and size (fire, insects, flooding) - vegetation age class | Human land-use patterns - land use maps, roads densities, population densities. | Habitat fragmentation - patch size, inter-patch distance, |
| Population dynamics | | | |

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| <ul style="list-style-type: none">- mortality/nativity rates of indicator species- Immigration/ emigration of indicator species- population viability of indicator species <p>Trophic structure</p> <ul style="list-style-type: none">- size class distribution of all taxa- predation levels | <p>distributions</p> <p>Productivity</p> <ul style="list-style-type: none">- Remote or by site <p>Decomposition</p> <ul style="list-style-type: none">-by site <p>Nutrient retention</p> <ul style="list-style-type: none">- Ca, N par site | <p>forest interior*</p> <p>Pollutants</p> <ul style="list-style-type: none">- sewage, petrochemicals etc.- long-range transport of toxics <p>Climate</p> <ul style="list-style-type: none">- weather data- frequency of extreme events <p>Other</p> <ul style="list-style-type: none">- park specific issues |
|---|--|---|

Information on management performance is also captured in periodic State of the Parks reports. These reports are based on staff assessments of management and are being increasingly informed by the results of the ecological integrity monitoring.

http://www.pc.gc.ca/progs/np-pn/eco/eco3_e.asp