

Effectiveness of forest protected areas

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SUMMARY

When forests are placed in protected areas there is an expectation that this protection will be permanent and effective. However, there is growing recognition that many forest protected areas are not secure and that a significant proportion are being degraded and destroyed. The paper summarises information about the problem including the early results from a World Bank survey of protected areas without effective management (so-called “paper parks”) and protected areas under threat of degradation. It then discusses a range of options for assessing effectiveness of protected area management. Assessment would allow help identify the gaps in a protected area network and particular protected areas at risk; help prioritise conservation effort and funding; and facilitate advocacy to improve management. The work of a World Commission on Protected Areas’ Task Force on this issue is described. The paper then summarises existing experience in assessing protected area effectiveness, including assessment systems for protected areas and other related systems – such as forest certification and ecotourism standards – that could be used within particular protected areas. The need for global co-ordination of assessment systems is identified, and the World Commission on Protected Areas suggested as a possible vehicle.

1. Introduction – the challenge

Investing time and effort in the selection and designation of forest protected areas only makes sense if there is a reasonable chance that such areas can be secured for the foreseeable future. This expectation of permanence is central to the whole concept of protected areas. The World Commission on Protected Areas (WCPA) defines a protected area as: *an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of associated cultural and natural resources, and managed through legal and other effective means* (IUCN 1994). WCPA goes on to state that such areas should be protected *permanently*, for the benefit of present and future generations (Phillips, 1999).

Unfortunately, there is a growing recognition that many of the world’s forest protected areas are not secure and that a significant proportion of these are actually being degraded and destroyed. To begin with, a fair proportion of the national parks, wilderness areas and nature reserves that appear in global surveys of protected areas exist in name only – the so-called *paper parks* phenomenon – and there has never been any real attempt to manage them for conservation. In some cases, the very fact that they have been designated acts as a form of protection, for example against involvement by large corporations interested in timber or minerals. However, more often than not such paper parks are under threat or are already experiencing damage.

Even if forest protected areas do have a management system in place, they may remain under threat: from poaching (of wildlife, fish, timber and other resources), illegal mining, encroachment by settlers, over-use by tourists and from the development of infrastructure such as roads and

dams. Sometimes local opposition to protected areas contributes to their loss; in other cases governments themselves undermine protected areas when they contain valuable resources.

Threats from illegal incursions, poaching and fire are being matched by more subtle impacts from transboundary air pollution and climate change; indeed many serious threats to protected areas cannot by their very nature be stopped by fences or guards. Protected areas are also being affected more generally as a result of pervasive economic changes at a global level, that are reducing state revenues and increasing pressures on natural resources. Several governments have recently undermined their own protected areas in order to open up new areas to extractive industries. Changes in land-use tenure, particularly in the former Soviet Union, present both threats and opportunities for the future. Of course, no protected area can ever be entirely secure, but the level of risk, and of damage, to many protected areas is giving cause for concern.

2. Forest protected areas under threat

In recent years, efforts have been made to assess the effectiveness of protected area systems in several regions. An IUCN study of protected areas in tropical Africa found that a high proportion of protected areas (forest and other) were not effectively protected. A recent survey of protected areas in the Indo-Malayan realm concluded that the enforcement of protection standards were poor to medium in 16 out of 18 countries in the region (World Bank, 1998). In Latin America, The Nature Conservancy launched a program to address the rapid creation of protected areas with no effective protection. Based on their assessment of need, the program covered sixty parks in 18 countries, over a total area (forest and non-forest) of 30 million hectares (Brandon, et. al., 1998). In a scoring of government commitment to forest conservation and management in 14 European countries and Turkey, WWF concluded that (1) government commitment to areas of strict protection was low across the board, (2) ecological representation of strictly protected areas was consistently below optimal levels, and (3) the quality of active management and protection of strictly protected forest areas was good in some countries, but below expectations in others (WWF, 1998).

The World Bank-WWF Alliance is currently carrying out a survey of protected areas in selected Bank client countries. Preliminary results suggest that the majority of protected areas in many countries do not have adequate capacity and a good management structure. Experts estimated that only 0 to 24 per cent of protected areas were “well-managed with a good infrastructure” in the countries assessed, and that 17 to 69 per cent of protected areas in these countries had no management, making them paper parks.

Not all the so-called paper parks are at risk – the fact that they have been designated at all provides some measure of protection and a range of factors, including remoteness, help reduce threats to other protected areas. However, an accompanying literature survey, and the monitoring work carried out by the World Commission on Protected Areas and the World Conservation Monitoring Centre, suggests that many protected areas *are* still being significantly degraded. In some cases protected areas are degazetted altogether or alternatively damage is so severe that they lose the very values that they were set up to preserve.

As the above would indicate, many forest protected areas and the systems they comprise are in serious trouble. This is most acute in the case of the many unique and important forest ecoregions which, without immediate and effective action, could disappear within the next few decades. There is an urgent need to achieve effective protected area systems for conserving the biodiversity of these and other forest ecoregions. Future work on systems should be based on protected area assessments and firmly founded in a landscape or bioregional approaches to

conservation (Miller, 1994; Potter et. al., 1998). They should seek to conserve and protect all components of biodiversity, including genetic, populations and species, and communities and ecosystems (Redford, et. al., 1998). They should be politically effective at all levels (White et. al., 1998), and not compromised by activities originating in other sectors of the economy. In almost all cases, achieving these systems will require both establishment of new areas, as well as conversion of paper parks to effective management. All stakeholders are encouraged to work together to set target and achieve targets for attaining effective protected area management (Potter, et. al., 1998).

3. The need to assess protected area management effectiveness

It will be important to measure the performance of efforts to achieve effective management of protected areas and systems. Performance accountability is increasingly being demanded across all sectors of society, and conservation management is no exception. Traditionally, concerns focused on issues of financial and managerial probity but this has now expanded to include concerns for management effectiveness. At present, the IUCN Categories are assigned according to the management *objectives*, but conservation organisations and other stakeholders are equally concerned with the *effectiveness* of this management. The need for some systematic approach to evaluating the effectiveness of protected area management has long been recognised; with those wishing to have information on effectiveness ranging from senior management, government and funding agencies through to NGOs, local communities and the wider community.

But, devising such a system is not as easy as it appears at first sight. Although gross damage to protected areas is usually fairly obvious, by the time such problems are noticed it is often too late to do much about it. Identification of paper parks, for example, may be relatively easy, but not all paper parks are under immediate threat and not all threatened protected areas are paper parks. Identifying the most threatened areas – and importantly also the areas in which further funding or management intervention could make a real difference – is therefore quite a complex procedure.

There is therefore growing interest in finding ways to measure the *effectiveness of management* in protected areas. Such information could be used in a number of ways:

- to identify the *gaps* in a protected area network;
- to identifying protected areas at *risk*;
- to help *prioritise* conservation effort and funding;
- to facilitate *advocacy* to improve management;
- as a means of putting *pressure* on institutions that are degrading protected areas;
- to help protected area managers to learn from their own and others' past successes and mistakes.
- to monitor performance in achieving conservation targets

Any assessment system must be democratic and fully participatory at a local level. It could work with an existing institution or through its own dedicated organisation. Assessment is needed at varying levels, including:

- projects with protected areas;
- individual protected areas;
- national protected area systems;
- international protected area systems; and
- local, national and international institutions responsible for protected areas.

Such systems should include analysis of, at least: institutional capacity; biological effectiveness; social effectiveness (benefits obtained or social systems involved); financial sustainability; and legal status. Assessment should be sensitive to issues of national sovereignty and the rights of local and indigenous peoples, and should have the support *and involvement* of local and indigenous peoples and local protected area officials. Local knowledge and perceptions should be incorporated into the assessment systems. Assessments will, in the long term, only be effective if they are accepted by and welcomed by the organisations and individuals involved.

A number of different *methodological* options are available. Quick survey methods, relying mainly on published information, GIS systems etc, can be used to assess whether biodiversity needs are being met and protected areas are really being protected. Such schemes may be useful to international and national organisations, to give an approximate picture of national or regional progress. Rapid ground survey methods could allow protected area managers, governments, funding agencies, aid organisations and local NGOs to carry out an assessment of protected areas from ecological, social and economic perspectives. In-depth, participatory methods could provide a detailed assessment of the environmental and social aspects of a protected area, for use in management planning, targeting aid projects and assessing progress.

There is also a range of *institutional* frameworks to choose from. One option would be to measure the effectiveness of management in protected areas systems through some kind of national evaluation framework. An alternative or additional system could be an international system, under the auspices of an existing vehicle such as the World Commission on Protected Areas (WCPA) or the World Heritage Convention. Another possibly is to act through a new body that could set criteria and indicators for national or regional assessment systems.

4. A proposed framework from the World Commission on Protected Areas

A World Commission on Protected Areas Task Force has been investigating the evaluation of management effectiveness of protected areas. The group highlighted the two primary questions that arise concerning the effectiveness of protected areas meeting conservation objectives. These relate to the adequacy of:

- the design of the protected area system (does the protected area network include adequate and appropriate areas of land/sea?); and
- the management of the system (are areas effectively managed?).

Management of protected areas can be monitored through a process of observation, and can be evaluated by assessing achievement against some predetermined criteria. Performance monitoring is concerned with the routine collection of data by an organisation to assess its management programmes and the achievement of associated goals and objectives. Programme evaluations are periodic or one-off exercises aimed as drawing conclusions about some aspects of the worth of a management programme or activity.

The WCPA Working Group proposed a framework for evaluation, which draws on elements from all the various approaches to evaluating conservation management and seeks to combine these elements to produce an integrated approach that can be flexibly applied to meet the needs of protected areas in different circumstances (Hockings, 1997). The framework aims to be strongly linked to the concerns and interests of managers so that it will provide a basis for management improvement while also providing for the accountability needs of other stakeholders.

The framework suggests the division of evaluation into five areas: design, input/process and output/outcome.

- ***Design evaluation***

Design evaluations assess the likely effectiveness of a project or programme based on assessment of the details of the proposal for the project/programme. In the context of protected areas an important element of assessing effectiveness is the question of adequacy of the network.

- ***Input evaluation***

Input evaluation seeks to answer the questions: are sufficient resources being devoted to managing the protected area/system; and how are resources being applied across the various areas of management? The key resources to be assessed are funds, staff, equipment and infrastructure.

- ***Process evaluation***

The assessment of management processes focuses on the way in which management of a protected area or system is conducted. The objective of process evaluation is to assess the standards of the management system and the processes and functions used in administering the area. This is a largely qualitative rather than quantitative process. The starting point for process evaluation is to establish standards for the conduct of management that can be used as a basis for assessing performance.

- ***Output evaluation***

One way of assessing management effectiveness is to look at the outputs derived from management activity. This type of evaluation is most useful where pre-existing plans, targets or standards have been established against which achievements can be measured. Two principal questions are involved: firstly, what products and services have been delivered and secondly have the managers carried out their planned work programme?

- ***Outcome evaluation***

Outcome indicators are important because they measure the real impacts of management action by assessing the extent to which management objectives are being achieved. As such they need to be based upon a clear understanding of what it is that managers want to accomplish. The process of establishing an outcome-based monitoring and evaluation programme is likely to highlight areas where objectives are unclear and/or lack specificity.

For practical reasons it is not possible to measure all the attributes that relate to protected area management and it is therefore necessary to use a limited number of indicators that are representative or indicative of management effectiveness. For example, the management of large protected areas with multiple objectives and usually with limited resources, means that monitoring efforts must be targeted to high priority areas, using a limited number of indicators in each case.

Because indicators are selected to reflect the achievement of management objectives, the extent to which a common set of indicators can be developed depends upon the level of commonality amongst objectives. One task to be undertaken in preparing guidelines on assessing management effectiveness is to develop a set of indicators that reflect protected area objectives which can be fine-tuned to match the particular environmental, social and managerial characteristics of a particular protected area or system.

This suggests the need for a basic set of *principles and criteria* that different assessment systems can adapt to particular conditions or objectives. For example, someone assessing an IUCN category I protected area in the Congo Basin will need to adopt a different approach to someone looking at a Category V national park in Europe; but both should be embedded in the same basic philosophy and have the same minimum standards. Similarly, systems for assessing protected areas from the perspective of recreational facilities will have some different priorities to those looking purely at biodiversity conservation. Agreeing such principles and criteria would require a thorough and participatory process of consensus building.

The framework suggested above could be applied at different scales from an individual protected area to an agency and even national scale. At the larger scales, the assessment of management effectiveness should focus on both the effectiveness with which sites within the system are managed and also agency or system-wide issues that affect the overall operation of the protected area network.

5. Existing experience with respect to assessing protected areas

The WCPA proposals are a first attempt to provide an international framework for evaluation of effectiveness. However, there are also other several similar systems devised by different organisations, some of which have already been field-tested. These provide a ready-made set of examples to help build international consensus on approaches to this issue. Some examples are given below – the categories may not be precise.

- **Assessment of protected areas: WWF Central America**, in association with the research centre **CATIE**, has devised and tested assessment guidelines for protected areas over the past 8 years; including field tests in Costa Rica, Mexico and the Galapagos Islands (Valery, undated). Researchers in Mexico have developed a protected area assessment system in connection with **Mexico's National Biodiversity Strategy** (Perez, *pers comm.*). IUCN has also collaborated on a project to look at management effectiveness in **UNESCO biosphere reserves** (Corbett, 1995).
- **Rapid assessment of management effectiveness**: WWF has produced a short study on rapid assessment methods for the **WWF/World Bank Alliance**, which may be used in assessment of the effectiveness of the protected area management in projects supported by the alliance (Dudley, 1998).
- **A database of effectiveness**: The **World Conservation Monitoring Centre** (WCMC) is developing a monitoring system for use with its protected area database.
- **Scorecard systems**: The **Nature Conservancy**, an NGO in the USA with a large international conservation programme, has a scorecard system for testing management effectiveness in protected areas that it used for its Parks in Peril Program. **WWF-Canada's** Endangered Spaces Campaign has a system of annual support cards that assess government progress in completing the national system. **WWF Australia** and other national and state environment groups have a similar annual report card which assesses the performance of government in five key areas. **WWF Brazil** also has a scorecard system in operation and published a survey of effectiveness of protected areas in Brazil in March 1999.

- **Rating systems:** The **WWF European Forest Team** is developing some criteria for rating quality of protected areas in association with its Pan Parks project, which aims to link protected areas in different countries. The same office has published a detailed set of forest scorecards for Europe that includes protected areas (Sollander 1998). Several **IUCN** offices use their own system of rating protected areas.
- **Remote sensing:** **Conservation International** has developed a system for assessing degree of damage to protected areas, through a GIS system.
- **Criteria and guidelines:** Private protected areas are increasingly establishing networks with agreed criteria for membership, and extractive reserves in Brazil have guidelines for their creation and legalisation from the government agency IBAMA that are in effect a set of criteria for the reserve (Murrieta and Rueda, 1995).

6. Related criteria and indicator guidelines

In addition to systems being developed specifically for protected areas, several other guidelines, principles and criteria and certification systems have relevance to protected area management, particularly with respect to IUCN categories V and VI. Whilst schemes such as these are not suitable for evaluating a protected area on their own, they suggest techniques which verification systems might *draw upon* for evaluating specific issues within or close to a protected area. Some examples are given below.

- **Forest Management:** Principles and criteria for sustainable forest management, such as those of the **Montreal and Helsinki Processes**, the **Tarapoto Declaration** and the **Forest Stewardship Council** (including certification for non-timber forest products (Viana *et al*, 1996)).
- **Sustainable Agriculture:** Such as those developed for organic farming schemes which meet national standards under the auspices of the **International Federation of Organic Agriculture Movements** (IFOAM, 1996).
- **Sustainable use of marine resources:** Including the Marine Stewardship Council and the Marine Aquarium Council – relevant in a forest context with respect to mangroves and their importance to marine fisheries.
- **Fair Trade:** Such as the guidelines for coffee, tea etc
- **Mining:** Guidelines for mining in protected areas, currently being drawn up by the **World Commission on Protected Areas**.
- **Social Rights:** A range of guidelines and charters relating to the treatment of people, including those of the **International Labour Organisation**, **UN Human Rights Commission** and **WWF** principles for working with indigenous peoples in protected areas.
- **Tourism:** Guidelines for ecotourism developments. There are currently many national and regional examples of ecotourism guidelines.
- **Climate Change Mitigation:** Various guidelines (apparently at least ten are under development) for application of **Joint Implementation** or **Clean Development Mechanism**

payments to forest management, under the Kyoto Protocol of the Framework Convention on Climate Change. Whilst this could, in theory, benefit conservation in the future, this is not possible under current proposals. Some environmental NGOs also reject this option because it to some extent replaces reduction of pollutants at source.

There is, therefore, already considerable work in progress. However, many of these schemes are new and relatively untested. Methods that just measure biological integrity are perhaps the easiest to implement, but without some understanding of human interactions, opinions and problems, can give little indication of likely developments in the future.

7. Would certification provide a useful option?

During discussions about the paper parks problem, the question of certification has been raised several times. Development of independent certification of forest management has recently played a key role in the debate about forest management. Under this system, forest owners or managers can agree to meet a set of management guidelines that are supposed to ensure social and environmental standards. All such certification schemes should meet the *principles and criteria* of the Forest Stewardship Council and be inspected by accredited personnel. The wood products from certified forests gain market access and, sometimes, a price premium.

There is a growing, grassroots consensus amongst many environmental NGOs that some kind of official verification or certification system for protected areas is also needed. However, the parallels with forest management are not exact. Whereas a forest owner can expect to get some commercial return from the costs incurred in certification, governments may see little incentive for opening their protected areas up for criticism. There have been considerable problems in promoting forest certification to forest companies and these could expect to be magnified in the case of protected areas.

Nonetheless, there are signs that such systems may be coming into more general use. Some organisations are already acting unilaterally to measure management effectiveness in protected areas that they manage, own or fund. Non-governmental organisations are also starting to do the same from the perspective of putting pressure on governments to improve systems of protected areas. Aid agencies might want to link funding for protected area management with proof that the area is being managed effectively – for example there is already discussion about this option within the World Bank.

8. Verification of protected area management – proposal for development

It seems clear that such systems will continue and will probably proliferate. However, most people involved agree that some system of standardisation, and the agreement of minimum standards, is required. Failure to introduce such an approach would risk, for example, the development of “standards” and systems that provide no real test of effectiveness – a public relations exercise involving unsubstantiated claims for good environmental management of a type that has become known as “greenwash”.

At present, many protected areas are protected in name only. There seems to be little point in spending time expanding a protected area network without first addressing questions of implementation. Indeed, in some cases, there may be opportunity costs in expanding the size or number of protected areas, because conservation resources will have to be spread more thinly, with a consequent decline in the intensity and quality of management. There may be cases where it is more important to *optimise* the location and size of components of the protected areas system

rather than automatically trying to *maximise* the network. Assessment systems will play a vital role in the development of a more strategic policy towards forest protected area networks.

A project is currently investigating the options for a more international approach, including the agreement of *principles and criteria* of good management and perhaps eventually of accreditation of assessment systems. It is being developed jointly by the World Commission on Protected Areas, IUCN The World Conservation Union and WWF The World Wide Fund for Nature, with active and financial support from the World Bank – WWF Forest Alliance.

- ◆ **PROPOSAL: All stakeholders should collaborate with WCPA in the development of a uniform approach to assessing protected area effectiveness.** This approach would embody a set of principles and criteria that parallel or complement those developed by the IFF for forest management. A target for achieving this could be, for example, that such an approach be developed and launched by March 15, 2000, one year following this meeting.

Box: Some definitions

Accreditation: "A procedure by which an authoritative body gives a formal recognition that a body of person is competent to carry out specific tasks" (ISO, 1996; IFOAM 1996b).

Assessment: "the combination of monitoring, evaluation and diagnosis" (IUCN, 1997).

Certification: "Procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements" (ISO, 1996). In relation to forestry: "A process which results in a written certification being produced by an independent third party attesting to the location and management structure of the forest in which the timber originated" (Elliott, 1997).

Evaluation: "Ascertain amount of; appraise; assess" (*The Concise Oxford English Dictionary*)

Inspection: "conformity evaluation by observation and judgement, accompanied as appropriate by measurement, testing or gauging" (ISO, 1996).

Verification: "Establishment of the truth or correctness of, by examination or demonstration" (*The Concise Oxford English Dictionary*)

References

Corbett, Miel R (1995); *An Evaluation of the Coverage and Management Effectiveness of Biosphere Reserves*, prepared for the International Conference on Biosphere Reserves, Sevilla, Spain, March 1995, IUCN, Gland

Dudley, Nigel and Sue Stolton (1999); *A Questionnaire for the Rapid Assessment of Protected Area Status*, developed for a project carried out for the World Bank by IUCN and WWF

Elliott, C A (1997); *WWF Guide to Forest Certification 1997*, WWF International, Gland, Switzerland

Hockings, Marc (1997); *Evaluating management Effectiveness: A Framework for Evaluating Management of Protected Areas*, Draft discussion paper, IUCN/WCPA

IFOAM (1996); *Basic Standards for Organic Agriculture and Processing and Guidelines for Coffee, Cocoa and Tea; Evaluation of Inputs*, International Federation of Organic Agriculture Movements, Tholey-Theley, Germany

ISO (1996); *ISO/IEC Guide 2: 1996, Standardisation and Related Activities – General Vocabulary*

IUCN (1994); *Guidelines for Protected Area Management Categories*, Commission on National Parks and Protected Areas with the assistance of WCMC, IUCN, Gland, Switzerland

IUCN (1997); Overview: Approach, Methods, Tools and Field Experience, in *An Approach to Assessing Progress Towards Sustainability: Tools and Training Series*, IUCN – IDRC International Assessment Team, Gland, Switzerland

Miller, Kenton R. (1994); *Balancing the Scales: Guidelines for increasing biodiversity's chances through bioregional management*, World Resources Institute, Washington DC

Murrieta, Julio Ruiz and Rafael Pinzón Rueda (1995); *Extractive Reserves*, IUCN Forest Conservation Programme, IUCN, Gland, Switzerland

Pérez, Ramón (1998), *pers comm*

Phillips, Adrian (1999); paper for Puerto Rico meeting

Potter, Catherine, et.al. (1998) *International forest conservation: protected areas and beyond*. Draft paper prepared on behalf of the Australian Government for the May 1999 meeting of the IFF, Canberra, Australia

Redford, K, K Brandon and S Sanderson; Holding Ground, in *Parks in Peril: People, parks and protected areas*, The Nature Conservancy and Island Press, Washington DC

Valery, Arturo Izurieta (undated); *Manual para la medición de la Eficiencia de Manejo de un Sistema de Areas Protegidas y sus Zonas de Influencia, aplicado a un Area de Conservación en Costa Rica*, WWF and CATIE, Costa Rica

Viana, V M, Ervin J, Donovan R Z, Elliott C and Gholz H (1996); *Certification of Forest Products: Issues and Perspectives*, Island Press, Washington DC

White, A, H Gregersen, A Lundren, G Smucker, N Bryon (1998): *Making protected area systems effective: An operational framework*. Paper presented at the "International Symposium on Adaptive Collaborate Management of Protected Areas: Advancing the Potential," Cornell University, Ithaca, New York

World Bank (1998); *Protected Areas of the Indo-Malayan Realm*, Washington DC

World Wide Fund for Nature (1998); *European Forest Scorecards 1998: Report*, Gland, Switzerland