

Protected Areas for a New Millennium

The implications of IUCN's protected area categories for forest conservation

A joint IUCN and WWF Discussion Paper

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The theory and practice of protected area management have both undergone dramatic changes in the last few years. *Protected areas are becoming far more flexible in terms of their aims, definition, size and approaches to management.* This broadening of scope means that land managers can use protected areas as a tool for a far wider range of functions than was previously the case. Protected areas are, to a growing extent, becoming *inclusive* rather than *exclusive* designations. Some of the uses of protected areas are now far removed from traditional conservation priorities and also include, for example, watershed protection, demarcation of indigenous territory, extractive reserves and the maintenance of cultural and religious functions. The focus of protected area management is also shifting away from individual protected areas and towards protected area *networks* as part of a landscape or *bioregional* approach to planning.

Changing priorities have contributed to a general confusion about the definition and purpose of protected areas. To address this, the World Commission on Protected Areas has drawn up a modified set of *six IUCN Protected Area Management Categories*, which was adopted by IUCN in 1994.

These developments, and the new Categories, have profound implications for the forest conservation work of both WWF and IUCN. The implications are explored in the following paper, with respect to:

- interpretation
- design
- management
- assessment and verification

Interpretation of the IUCN Protected Area Categories

A protected area is defined as^[1]:

An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.

This means that protected areas need not be limited to state-sponsored reserves, but can include those managed, for example, by indigenous communities, private landowners, industrial holdings etc. To give greater coherence to the role and scope of protected areas within conservation planning and sustainable land use, IUCN and its World Commission on Protected Areas^[2] have expanded on this basic definition and developed six modified categories of protected area. The new IUCN Protected Area Categories were proposed in February 1992 at the *IVth World Congress on National Parks and Protected Areas* in Caracas and agreed at IUCN's General Assembly in Buenos Aires in January 1994^[3]. They are summarised below.

- **Category Ia: Strict nature reserve/wilderness protection area managed mainly for science or wilderness protection** - an area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring;

- **Category Ib: Wilderness area: protected area managed mainly for wilderness protection** - large area of unmodified or slightly modified land and/or sea, retaining its natural characteristics and influence, without permanent or significant habitation, which is protected and managed to preserve its natural condition.
- **Category II: National park: protected area managed mainly for ecosystem protection and recreation** - natural area of land and/or sea designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.
- **Category III: Natural monument: protected area managed mainly for conservation of specific natural features** - area containing specific natural or natural/cultural feature(s) of outstanding or unique value because of their inherent rarity, representativeness or aesthetic qualities or cultural significance.
- **Category IV: Habitat/Species Management Area: protected area managed mainly for conservation through management intervention** - area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats to meet the requirements of specific species;
- **Category V: Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation or recreation** - area of land, with coast or sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.
- **Category VI: Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural resources** - area containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while also providing a sustainable flow of natural products and services to meet community needs.

The role of protected areas has become as much about the protection of processes - such as supply of water, prevention of erosion and maintenance of human lifestyles - as about the protection of species. This has important implications for the land area needed within a protected areas system. The full use of these six categories allows a more inclusive and flexible approach to designing protected areas systems at the national level. Categories I-III covers a variety of "traditional" designations of protected area. Category IV recognises the need to set aside areas for restoration in many parts of the world, and the active management that this will entail. Categories V and VI recognise that maintenance of biodiversity is not always the primary reason for protection and that cultural values, environmental management, sustainable land use and recreational needs all help determine the choices made regarding a country's protected area network. *Protected areas can in theory now cover land used for almost everything except industrial-scale activity such as intensive farming and forestry, large-scale mining or large settlements.*

A wider definition of protected areas has a number of advantages. Protected areas may be seen as less threatening because protection does not necessarily mean a complete block on human activity. They are likely to lead to new management options in a wide range of situations, and open up the possibility of innovative partnerships between conservationists and other interest groups, such as indigenous peoples^[4], the tourism industry^[5] and small-scale agriculture^[6].

However, the wider definitions also raise two important questions:

- will protected area targets have to be revised?

- do the revised IUCN Protected Area Categories undermine the concept of protected area targets?

It should be noted that protected areas are only one way of protecting biodiversity. Other options, including protection of biodiversity in commercially-managed areas, should also be part of any overall biodiversity strategy.

Protected area targets

IUCN and WWF have both set a target for forest protected areas in their joint Forests for Life strategy^[7]:

This target builds on a more general target for 10 per cent protection for every biome, agreed at the Caracas Congress in 1992^[8]. Putting a figure on protection has already created some problems. For example, several countries are using the wider definition of protected areas to suggest that they have reached the WWF/IUCN target in situations where forest biodiversity is clearly still at risk. More generally, *one result of widening the definition of protected areas is that an increasing proportion of existing forest will qualify for inclusion within a given protected areas network, without necessarily strengthening the protection which these areas receive, or enhancing the conservation of biodiversity*. It might also, inadvertently, strengthen the impression that what happens outside the protected area is of little importance to conservation^[9].

Although the total area under protection is important, it may be less significant than other factors including the *ecological representativeness*^[10] of the forest under protection, social and environmental functions and the existence of endemics or hotspots. Therefore, if taken in isolation, *the 10 per cent target could be a serious underestimate* of the area required to guarantee an ecologically representative protected area network.

Biodiversity conservation

A more fundamental question is the extent to which Categories V and VI provide adequate biodiversity conservation. Further research is needed and the issue raises important practical questions. For example, if all a country's protected areas were in categories V and VI, would this provide sufficient protection for biodiversity - even if the protected areas were managed according to the IUCN criteria?

Common sense, and the examples quoted in IUCN's own literature on the subject^[11] suggest that although the roles of Category V and VI protected areas may be significant in biodiversity conservation, protection may be less than in the case of some of the other categories. However, the more important question may relate to the *effectiveness* with which protected areas of any category are managed; this issue is returned to below.

The key issue may be less about the precise definitions of IUCN Categories I-VI, and more about the *proportion* of a national protected areas network that falls into each of the categories. When designing a protected areas management system, a balanced network of categories will be needed, to meet a range of ecological and social aspects of forest quality. This will, in many cases, include a minimum area in the stricter protected area categories.

Conclusions and recommendations

- Every country should have a well-designed and effectively managed system of protected areas.
- In many cases, there is also a need for bioregional and occasionally trans-national approaches to protected areas networks.
- The wider definitions of protected areas, and particularly IUCN Categories V and VI, offer important new opportunities and challenges for conservation, including people-orientated approaches and new partnerships.

- One consequence of extending the categories is that, in many countries, a significantly larger proportion of the forest could eventually be eligible for inclusion in a protected areas category. Therefore, the 10 per cent target is no longer always suitable and can sometimes be counter-productive because it underestimates the area needed to conserve biodiversity.
- The key issue may be to decide the proportion of the network in each category. Precise targets will need to be designed to meet the conservation requirements of individual countries, regions and local communities. The development of targets at the national level will be useful.
- The emphasis of the IUCN and WWF forest protected area target should be on the establishment of well-managed systems of protected areas that include:
 - ecologically representative examples of each forest type^[12];
 - recognition of the full range of social and environmental functions performed by protected areas;
 - regional and global hotspots and the habitat of endemic species^[13].
- Plans for national protected areas, drawing on these criteria, will require a balanced use of IUCN Categories to meet the range of ecological and social aspects of forest quality.
- New methodologies and tools for selection, management and monitoring of protected areas will also be required, relevant to the wider set of purposes for which such areas are now being designated.
- Partnership approaches - between international institutions, governments, industry, local communities, indigenous peoples and NGOs - should be promoted as a means of achieving more effective protected areas management^[14].
- Methods such as gap analysis should be used to determine protected area needs on a country-by-country and cross-border basis^[15].
- To help governments and NGOs to develop protected area strategies and targets, WWF and IUCN will produce a range of case studies analysing different approaches to protected areas.

Many governments have not fully integrated the new thinking about protected areas into their existing protected area systems. In these cases, the IUCN Categories can be used as a tool to liberate approaches to protected areas. They may in some cases lead to existing protected areas being more realistically categorised, and to the identification of new potential protected areas, particularly when these are associated with cultural needs and environmental services.

Design of a system of protected areas

The design of protected area systems is important. Protected areas should not simply be islands of biodiversity in an otherwise degraded landscape. Under a bioregional approach to conservation, protected areas are planned and managed as part of a mosaic of land uses that together seeks to satisfy environmental and social needs^[16,17].

The design of a protected area system therefore has to take account of a range of inter-related social and biophysical factors, both inside and outside the protected areas themselves. This marks a step beyond fulfilment of targets for protected areas and requires consideration of conservation values, social issues and the biogeographical characteristics of the area^[18].

Conservation values:

- ecosystems;
- species;
- intraspecific genetic variation;
- environmental services;
- natural processes.

Social issues:

- land-use patterns inside and outside protected areas;
- land user groups and institutions;
- local peoples livelihood requirements;
- local patterns of access to resources;
- previous land-use in the protected area;
- role of people in biodiversity conservation and management^[19];
- human population trends (demographic and migration patterns) within and near the area;
- cultural aspects of human populations within or near the area;
- equity issues;
- existing pressures on protected areas;
- likely future threats to the protected area and surrounding landscape;
- likely visitor pressure, etc.

Biogeographical characteristics:

- size;
- shape;
- integrity/quality;
- topography.
- quality of the resource, etc.

These factors have to be integrated in the wider biogeographical context through, for example:

- links to other protected areas through corridors, migration pathways etc;
- opportunities for conservation of biodiversity outside protected areas;
- opportunities for habitat restoration;

- likely impacts of climate change on landscape and biodiversity^[20].

The minimum useful size for *total* ecosystem or habitat protection is usually determined by the needs of macrofauna, such as bears and large cats. In general, the greater the integrity of the ecosystem, the larger the minimum area needed for protection. Nonetheless, small reserves can be important for *partial* ecosystem protection, such as protection of certain plant or animal communities or micro-habitats, or from a cultural or landscape perspective. In addition, many ecosystem services can be preserved through the creation of a mosaic of different protected area types.

The location of the reserve is also important, particularly with respect to maintaining habitat for migratory species, or if reserves are connected by corridors, located in buffer zones or in isolated situations such as islands and mountain-tops.

A further factor can be the presence of several different categories within a single area, such as a core area of strict reserve status (say, Category IA or II) surrounded by a landscape area (V) or an extractive reserve (VI). The UNESCO Biosphere Reserves concept is based on this principle^[21].

Conclusions and recommendations

- Protected areas should never be viewed in isolation, but should be integrated into the wider landscape through approaches such as bioregional planning.
- In many cases some relatively large protected areas will be needed to maintain ecosystem function. Therefore, national protected area strategies will probably need to specify that a minimum proportion of the protected area network is included in large areas.
- For monitoring processes, all forest protected areas should be recorded, regardless of size.

Management of Protected Areas

Good management is an essential element in the success of a protected area. In addition to, and partly in consequence of, changing aims and definitions, there have also been some major changes in the management of protected areas. New approaches are being developed and some traditional designations are being reconsidered. These changes occur at two levels:

- institutional arrangements for the protected area;
- approaches to management of the protected area.

The management agency responsible for protected areas is in some countries gradually developing from a centralised, mostly governmental, control to a more pluralistic approach to both planning and management. Conversely, some protected areas are now controlled by agreements between several governments. (Note that authority is not necessarily the same as ownership.) Although strict distinctions are often impossible, a variety of different types of control are outlined in Table 1 below.

Table 1: Types of Authority within Protected Areas

- ***Transnational protected area***: Tatra Mountains National Park, owned and managed by Poland and Slovakia.
- ***National protected area linked to international designations***: Sian Kahn Biosphere Reserve in Yucatan, Mexico. Core area owned by the Mexican government and linked to the UNESCO Man and the Biosphere programme.

- **National protected area linked to national legislation:** Rajiv Gandhi National Park and other similar protected areas in India. Governed by the Wildlife Protection Act.
- **Private protected area linked to industry:** Several reserves on forest industry land in Sweden and Finland. Old-growth areas in production forest.
- **Private or community protected area linked to religious group or interest:** Religious forests in otherwise heavily modified landscapes in Nepal. Provide refugia for species that might otherwise become extinct.
- **Other types of privately protected area:** In South Africa, the area of private reserves exceeds that controlled by the state.
- **Indigenous Reserves:** Several reserves in the Amazon region of Brazil are specifically linked to indigenous groups.
- **Community protected area: local community:** Sacred groves in Ghana balance conservation, spiritual and other human needs.
- **Non-governmental organisations:** The Woodland Trust in the UK owns several hundred woodlands ranging from 400 ha to less than one hectare.

In addition, new approaches to day-to-day management are being adopted. These recognise that the automatic exclusion of people from protected areas not only creates conflict^[22] but can sometimes destroy the very qualities that stimulated creation of the protected areas in the first place^[23]. In particular, top-down approaches, where management decisions are taken by an individual, a single agency or a remote government department, are gradually being replaced by a variety of new methods.

The recent policy statement from WWF regarding indigenous peoples and protected areas^[24], and the 1996 World Conservation Congress resolution on indigenous peoples and protected areas, are both important manifestations of this new thinking.

In a recent publication, IUCN encourages protected area agencies to consider relinquishing control over the management process to the stakeholders concerned, in effect moving downwards along the continuum below^[25].

Increasing local control

- actively consulting
- seeking consensus
- negotiating
- sharing authority
- transferring authority

There are also an increasing number of examples where protected areas are being developed in reverse - from the ground up - and being initiated by local people and indigenous groups rather than being imposed from above. For example, indigenous groups in Honduras and Bolivia have recently self-declared national parks without reference to their central governments, and those in Canada and Australia have taken the initiative in proposing the establishment of such areas.

The relationship between ownership and choice of management structure is complex. For example, there is no simple correlation between size of protected area and degree of local participation. An important new element in protected area management is the increased number of *options* for control and management.

A plurality of approaches to protected areas is, on the whole likely to be beneficial. However, it does raise important questions about the long term security of a protected area network; for example without legal status there is little to stop a company or an indigenous group from changing its mind about protecting an area of forest if economic conditions or other factors change. (Of course, this is also true of governments, and de-gazetting of protected areas can and does take place.) New approaches to the management, security and assessment of non-governmental protected areas will need to be developed.

Conclusions and recommendations

- Approaches to protected areas should be expanded to include a wider range of management agencies and systems, providing that these also include adequate provision for long-term protection.
- To monitor implementation of protected area strategies, guidelines (criteria and indicators) for managing, recording assessing and ensuring the security of the new protected area types may be needed by both governmental and non-governmental interests.
- In general, wherever local communities wish, a partnership approach to protected areas management should be adopted.

Continuing conflicts about the designation and management of protected areas - and the frequency with which they are degraded - shows that there is an urgent need to develop and refine new approaches towards protected areas. Although many successful examples of protected areas exist, there is a continuing need to develop and apply general principles from these. Such a process should include:

- use of case studies of successful and unsuccessful protected areas for each category to identify approaches that are likely to be effective;
- development of techniques, approaches and new partnerships that foster ecological protection;
- recognition of the opportunities and challenges presented by more varied approaches to control and management of protected areas.

Assessment and Verification of Protected Areas

Once a protected area has been designed and managed, it is important to be able to assess how well protection plans are working out in practice. This represents an important stage beyond setting targets and deciding on management approaches. It involves both assessments of individual protected areas and, as a result, an analysis of the effectiveness of a national or regional protected area strategy, followed by modifications if necessary.

At present, many protected areas are protected in name only, and in these cases there is little point in spending time expanding the network without first addressing questions of implementation. 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^[27]. Policy-makers charged with decisions about designation and management of protected areas need reliable information about their effectiveness.

The question of assessment and verification of protected areas is therefore also important, and must in the future be addressed by a range of institutions. At present, the IUCN Categories are assigned according to the *objectives* of management, but conservation organisations are equally concerned with the *effectiveness* of this management. A system of assessing the effectiveness of implementation of protected areas is needed^[28], and some agencies have already started this process^[29]. One option is that individual governments and other managing authorities should have the responsibility for assessing their protected areas system^[30]. An alternative could be an international system, under the auspices of an existing vehicle such as the Convention on Biological Diversity or the World Heritage Convention^[31], or possibly through a new body. A third option would be to design monitoring and evaluation systems that are suitable for national authorities, and to target checking at an international level at whether these processes and procedures are in place.

In the case of forest protected areas, existing certification systems may provide information about a proportion of sites or particular Categories. For example, the system of forest certification developed by the Forest Stewardship Council (FSC) might be appropriate for use in some Category V or VI protected areas. There are (albeit inexact) parallels between the IUCN Categories of protected areas and the *FSC Principles and Criteria* of good forest management. However, there are also some notable differences between assessing protected areas and forest management; notably that in the former case there are fewer opportunities for the use of consumer or corporate pressure as a means of encouragement.

Conclusions and recommendations

- Quality of protected areas is as important - perhaps more important - than the total area theoretically under protection.
- Currently, many protected areas are failing to fulfil their designated aims as a result of mismanagement, encroachment etc.
- An international system of assessment and verification of the effectiveness of protected areas is needed to help intergovernmental bodies, governments and others to judge the effectiveness of conservation strategies.
- 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.
- Planning for an assessment system should include analysis of the potential of existing certification systems.
- Any system of assessment or verification of protected areas, or their systems, should include analysis of, at least:
 - institutional capacity;

- biological effectiveness;
 - social effectiveness (benefits obtained or social systems involved);
 - financial sustainability; and
 - legal status.
- Any assessment system must be sensitive to issues of national sovereignty and the rights of local and indigenous peoples, and is only likely to be effective if it has 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
Assessment of a protected area can only be effective if it is accepted and welcomed by the organisations and individuals involved.
 - To provide background information relevant to assessment and verification, several studies are needed:
 - an assessment of the effectiveness of existing protected areas in terms of meeting stated objectives of biodiversity conservation, cultural heritage etc;
 - development of methodologies for assessment and verification;
 - identification of the most suitable institutional arrangements to carry out or coordinate assessment;
 - development of case studies.

There are major opportunities for WWF, IUCN and The World Conservation Monitoring Centre to work together in further developing these ideas.

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Further reading

IUCN (1994); 1993 United Nations List of National Parks and Protected Areas, IUCN, Gland

McNeely, Jeffrey A (1993); Parks for Life: Report of the Fourth World Congress on National Parks and Protected Areas, IUCN, Gland

Phillips, A and J Harrison (1997); International standards in establishing national parks and other protected areas, Journal of the George Wright Society 14 (2), 29-38

References and notes

1) IUCN, CNPPA and WCMC (1994); Guidelines for Protected Area Management Categories, Gland, Switzerland

2) Formerly Commission on National Parks and Protected Areas (CNPPA).

3) *op cit* ref 1

4) Colchester, Marcus (1994); Salvaging Nature: Indigenous Peoples, Protected Areas and Biodiversity Conservation, Discussion Paper 55, United Nations Research Institute for Social Development, World Rainforest Movement and WWF

5) Ceballos-Lascurin, Hector (1996); Tourism, ecotourism and protected areas, IUCN, Gland, Switzerland

6) Murrieta, Julio Ruiz and Rafael Pinzn Rueda (1995); Extractive Reserves, IUCN, Gland, Switzerland

7) Dudley, Nigel, Don Gilmour and Jean-Paul Jeanrenaud [editors] (1996); Forests for Life: The WWF/IUCN Forest Policy Book, WWF and IUCN, Gland, Switzerland

8) CNPPA (1994); Parks for Life: Action for Protected Areas in Europe, Workshop III.8, IUCN, Gland, Switzerland

9) Halladay, Patricia and D A Gilmour [editors] (1995); Conserving Biodiversity Outside Protected Areas: The role of traditional agro-ecosystems, IUCN, AMA-Andaluca and Centro de Investigacin F. Gonzalez-Bernldez

10) Including representation of species and genetic resources.

11) *op cit* ref 1

12) Noss, R (1995); Maintaining Ecological Integrity in Representative Reserve Networks, WWF Canada and WWF US, Toronto and Washington DC

13) See, for example, Olson, David and Eric Dinerstein (1996); The Global 200: Key Ecoregions for Saving Life on Earth, World Wildlife Fund US, Washington DC

14) Western, David, R Michael Wright and Shirley C Strum [editors] (1994); Natural Connections: Perspectives in community-based conservation, Island Press, Washington DC

15) Iacobelli, T, K Kavanagh and S Rowe (1994); A Protected Areas Gap Analysis Methodology: Planning for the Conservation of Biodiversity, World Wildlife Fund Canada, Toronto

16) Miller, Kenton R (1996); Balancing the Scales: Guidelines for Increasing Biodiversity's Chances Through Bioregional Development, World Resources Institute, Washington DC

- 17) Saunier, Richard E and Richard A Maganck [editors] (1995); Conservation of Biodiversity and the New Regional Planning, Organization of American States and IUCN
- 18) Davey, Adrian G (1996 - third draft); Draft Guidelines for National System Planning for Protected Areas, IUCN Commission on National Parks and Protected Areas, Gland, Switzerland
- 19) International Institute for Environment and Development (1994); Whose Eden? An overview of community approaches to wildlife management, IIED, London
- 20) Markham, Adam, Nigel Dudley and Sue Stolton (1993); Some Like It Hot: Climate change, biodiversity and the survival of species, WWF International, Gland, Switzerland
- 21) Bridgewater, Peter, Adrian Phillips, Michael Green and Bruce Amos (1996); Biosphere Reserves and the IUCN System of Protected Area Management Categories, Australian Nature Conservation Bureau, World Conservation Union and UNESCO, Canberra 1996
- 22) Lewis, Connie [editor] (1996); Managing Conflicts in Protected Areas, IUCN, Gland, Switzerland
- 23) Ghimire, Krishna B and Michel P Pimbert [editors] (1996); Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas, UNRISD, Geneva
- 24) Oviedo Carrillo, Gonzalo [editor] (1996); Indigenous Peoples and Conservation: WWF Statement of Principles, WWF International, Gland
- 25) Borrini-Feyerabend, Grazia (1996); Collaborative Management of Protected Areas: Tailoring the Approach to the Context, IUCN, Gland, Switzerland
- 26) Amend, Stephen and Thora [editors] (1995); National Parks Without People? The South American Experience, Parques Nacionales y Conservacion Ambiental number 5, IUCN, Quito, Ecuador
- 27) CIFOR (1997); Occasional paper number 4, Centre for International Forestry Research, Bogor, Indonesia
- 28) This is also highlighted in paragraph 4.3.4 of the CNPPA Strategic Plan 1996, IUCN, Gland.
- 29) Corbett, Miel R (1995); An Evaluation of the Coverage and Management Effectiveness of Biosphere Reserves, prepared for IUCN as an input to the International Conference on Biosphere Reserves , Seville, Spain, March 20-25 1995; and Commission on National Parks and Protected Areas (1994); Parks for Life: Action for Protected Areas in Europe, IUCN, Gland, Switzerland
- 30) Attempts are already made on a national and sometimes international basis. For example, a six-point scoring system is applied in Ghana (Hawthorne, W D and M Abu-Juam (1995); Forest Protection in Ghana, IUCN, Gland, Switzerland. An IUCN/WCMC list of threatened protected areas includes 90 major areas worldwide, and it is generally agreed that other many areas are also being degraded.
- 31) Sayer, Jeffrey, N Ishwaran, S Iremonger, J Payne and J Thorsell (draft); The World Heritage Convention as a Mechanism for Tropical Forest Conservation