

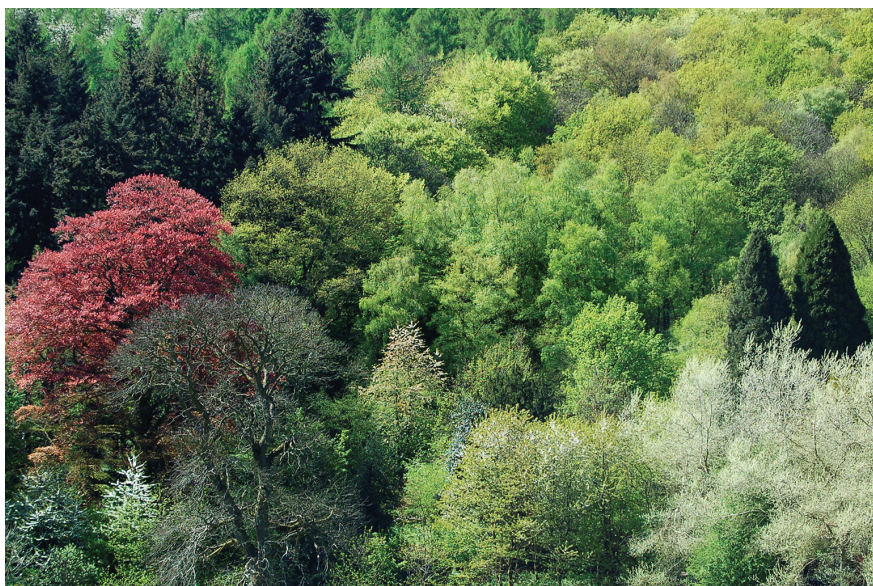


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# Tracking progress in managing protected areas around the world

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An analysis of two applications of the  
Management Effectiveness Tracking Tool  
developed by WWF and the World Bank



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Front cover photograph by Nigel Dudley

The authors and WWF would be pleased to receive any comments about the content and opinions expressed in this paper and on suggestions for how it could be strengthened and improved. Please send comments to WWF as above.

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## Preface

Since 1998, WWF has been involved in efforts to assess the management effectiveness of protected areas, working closely with the IUCN World Commission on Protected Areas (WCPA) and the World Bank through the World Bank/WWF Alliance for Forest Conservation and Sustainable Use ('the Alliance'). These efforts stem from recognition that protected areas are only worth creating and maintaining if they fulfil their stated aims – biodiversity conservation, the preservation of spectacular landscapes or seascapes, their recreational value, environmental services and the social and cultural benefits they provide.

Within its programme WWF has been working with partners, including particularly the World Bank, to increase the total amount of forest protected areas globally. This effort has resulted in more than 62 million hectares of new forest protected areas being established: an area larger than France. But designation is only the first step. If protected areas are to be effective they must also be well managed. This is a complex and continually evolving task that requires skill, dedication and resources. And in order to manage protected areas well, we also need to know the strengths and weaknesses of existing management, and to be able to adapt management effectively if necessary.

The ability to manage protected areas effectively relies on a combination of good governance, sufficient capacity, well-trained staff and enough money to pay for essential management activities and equipment. But it is sometimes difficult to be sure which of these various factors is the most important, or indeed if current management is working. Accordingly, WWF has been supporting the development of various assessment methodologies to measure management effectiveness and to identify what is or is not working within a protected area. Amongst the tools designed and used is the **Management Effectiveness Tracking Tool** or **METT** which aims to provide a quick and simple picture of effectiveness in individual protected areas, ideally through repeated application in sites over time. The METT has been developed in a collaborative exercise between the World Bank and WWF. The METT has been tested over the past five years and a revised version has now been prepared<sup>1</sup>.

The following report outlines the results from the first two applications of this tool: we believe it is to date the largest multi-national repeat survey of protected areas management effectiveness using a single methodology.

Results from the first assessment<sup>2</sup> were presented to the Seventh Meeting of the Conference of the Parties (COP-7) to the Convention on Biological Diversity (CBD) in 2004 and to the WWF Annual Conference later in the same year<sup>3</sup>. The research helped to persuade CBD signatories to include the need for assessment of management effectiveness in the CBD's *Programme of Work on Protected Areas*.

Within WWF, the results helped to identify minimum management standards for application in its protected area projects and also helped to shape the work programme and targets for WWF's global programme. The work of WWF in this field, including the other evaluation tools that have been developed for assessing protected area effectiveness at a system-wide level and for marine protected areas, helps to make effectiveness assessment a standard part of conservation management. WWF is committed to continue using the various management effectiveness tools it has developed, to build up a long-term picture of how effectively protected areas are being managed within the set of sites that WWF is supporting, and potentially more broadly through technical assistance to nations so that they can undertake management effectiveness assessments themselves over the longer term.

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<sup>1</sup> Stolton, S, M Hockings, N Dudley, K MacKinnon, T Whitten and F Leverington (2007); *Management Effectiveness Tracking Tool – Reporting Progress at Protected Area Sites: Second Edition*, WWF, Gland, Switzerland

<sup>2</sup> *How Effective are Protected Areas?*, published by WWF in February 2004 for the Seventh Conference of Parties of the Convention on Biological Diversity

<sup>3</sup> *Are Protected Areas Working?*, published by WWF in June 2004, for the WWF Annual Conference

Although we have carried out over 400 assessments (covering 331 protected areas), this remains a small sample of the total number of protected areas (well over 100,000 sites globally). We urge national governments and their development partners to support efforts to measure management effectiveness and to track changes in this over time. A larger database of assessments, completed in different years, would allow the development of adaptive management at the large scale and would also allow the measurement of the CBD target on effectiveness of protected areas.

Finally, we welcome any comments about the tool and the results we present here: comments from past users helped us to improve the tool significantly and we look forward to making continuing improvements in the future.

Dr Guillermo Castilleja

A handwritten signature in black ink, appearing to be 'G. Castilleja', written in a cursive style.

Executive Director, Conservation  
WWF International

## Summary of key findings

WWF has surveyed management effectiveness in over 330 protected areas in 51 countries, using the Management Effectiveness Tracking Tool (METT) developed together with the World Bank. METT surveys were undertaken in 2004 and 2006, including 79 repeat surveys of the same sites. This global survey comprises the widest sample of protected area management effectiveness yet undertaken, using a consistent methodology across countries and repeated over time. This report summarises the key findings of the work.

- **The protected areas surveyed show identifiable patterns of strengths and weaknesses**  
In general, issues relating to protected area legal establishment, boundary demarcation, protected area design, condition assessment, and objective setting are undertaken in most protected areas to a good standard, while activities relating to people (both local communities and visitors) are less often undertaken and are also less effective, as are activities such as management planning, monitoring and evaluation, management of budget and work on education and awareness.
- **Biodiversity condition was significantly linked with many individual indicators**  
Success in maintaining biodiversity, according to the METT assessment reports, appears to be linked to a well-regulated and managed protected area, where staff are assessing progress and making changes as necessary. The strongest association was found with: law enforcement, control of access, resource management, monitoring and evaluation, maintenance of equipment, budget management and existence of annual work plans.
- **Adequate staffing is important for effective conservation**  
Staff numbers correlated well with the reporting of good biodiversity condition and with the overall score for management effectiveness, although there are currently substantial data gaps relating to this question, particularly in the 2006 survey. There are also large differences in average staff numbers in protected areas around the world, and in terms of numbers of staff per unit area of protected areas, with the most and highest density of staff in Asia and the fewest and lowest density in Latin America.
- **Management improves over time**  
Older protected areas tended to score slightly higher for effectiveness than newer protected areas, suggesting that given time and effort, management is often improved.
- **Analysis of the total scores gives an indication of overall effectiveness**  
Statistical analysis suggests that overall score can be used as a measure of management effectiveness, although this is slightly dangerous because simply referring to the total can conceal major gaps in management, or management that is highly skewed in some way.
- **Assessment shows variation between regions**  
This must be treated with some caution but nonetheless analysis did show some differences between the regions; principally that Latin America scored significantly lower in the overall METT score averaged across sites (mean 39.9), when compared with the other three regions (means of 50.4 for Asia-Pacific, 53.1 for Europe/Middle East and Africa/Madagascar).
- **There is a highly significant association between overall score and IUCN category**  
Generally those protected areas in the most highly protected management categories have more effective management. However, the sample size for some categories (notably III and V) was so small that these results must be treated with considerable caution. Protected areas that lack a category altogether (12 sites in our sample) had the lowest mean score of all.
- **International designations appear to have little correlation with effectiveness**

Based on our sample, the analysis found no significant relationship between international designations (natural World Heritage, UNESCO Man and the Biosphere and Ramsar sites) and the total management effectiveness score.

- **Changes in critical management activities were identified over time**  
WWF used the results of the first METT to identify the six critical management activities (CMAs) that related most directly to overall management effectiveness (legal designation; clear management objectives; demarcation of protected area boundaries; operational plan; operational budget; and monitoring plan). An assessment was made of how the performance of these changed between the two assessments. Although there was little overall change detectable in the effectiveness of the six key activities, when the protected areas that had been subject to repeat assessments were analysed separately, improvements were seen in five out of six of the CMAs.
- **Critical management activities were identified by respondents**  
Law enforcement and surveillance were by far the most important management activities identified by managers in 2004 and 2006, followed by the need to work with local communities, management planning and building institutional and governance capacity. Other important issues included ecotourism, education and awareness, working with regional authorities (which declined slightly in the overall assessment as compared with 2004) and research.
- **Consumptive biotic resource use represent the most serious threat to conservation as identified by managers**  
Consumptive biotic resource use (legal or illegal – predominantly poaching) was identified as being a critically important threat in over 60 per cent of the protected areas, habitat conversion (almost a quarter) and modification of ecological processes (over a fifth). These three together were overwhelmingly the most important threats identified during the two assessments and occurred throughout the world.
- **Results were compared for two periods for 79 sites with duplicate assessments**  
Overall, there are more improvements than declines across this sample of sites. Over the questions assessed, an average 22 per cent of the scores to the questions improved as opposed to 9 per cent that declined. The highest level of improvement was found in management planning, biological condition, relations with local communities and education. Parks had declined in particular in personnel management and, paradoxically, in management plans. This may reflect genuine changes as sites address management questions, including those identified in the first METT. It may also be influenced by the desire of staff to show that their sites and management have improved and this is an area where some independent auditing would be particularly valuable. However, as an example we carried out a more detailed comparison of two assessments from an individual site in Cameroon, which demonstrated a richer picture of changing status and effectiveness following management interventions and support. Further detailed comparisons would be useful in order to interpret changes in scores at the same site over time.

Conclusions and recommendations for WWF are made at the end of the report.

## Protected area management effectiveness

Protected areas play a pivotal role in national biodiversity conservation strategies and are currently the subject of particular attention because of the wide-ranging *Programme of Work on Protected Areas* from the Convention on Biological Diversity (CBD). Protected areas already cover over 10 per cent of the world's land surface, although the long-term future of many of these areas remains uncertain. Many protected areas have been created quite recently; very few are more than fifty years old. Figure 1 shows the date of creation of the 330 protected areas distributed across 51 countries that are included in the current survey. In total these reserves cover at least 100,000,000 hectares.

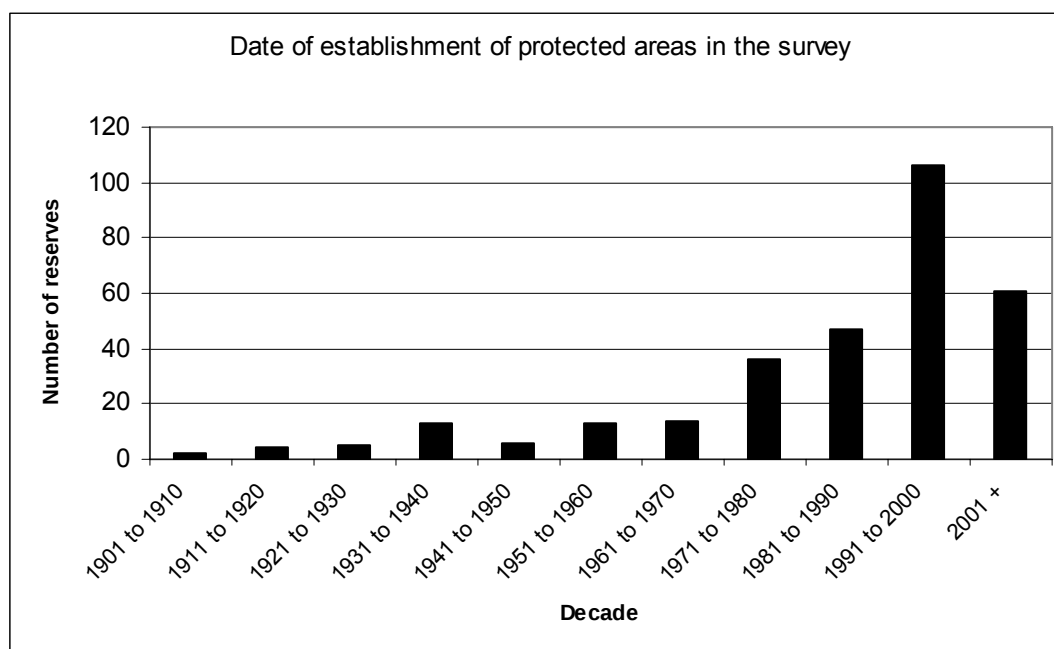


Figure 1: **Date of establishment of protected areas in the survey**

Managing such a huge protected areas estate is an enormous challenge, and alongside the increase in land and water under protection is a worrying trend of increasing pressure on protected areas: from local communities who feel that they have been dispossessed of their land; from extractive industries and developers; and from within many parts of government. Local and indigenous communities are demanding back land that was taken from them and put into protection. Industry is concerned that protected areas are locking up valuable resources and argue that this undermines economic and social development. Some governments that responded to critics of land conversion policies by setting aside protected areas are now questioning whether all such areas are really necessary, and there are also inter-governmental conflicts over resource utilisation and the best path for national development, including within protected areas. At the same time there are also questions about exactly what protection means and how protected areas should be managed and integrated into wider landscapes and seascapes.

Our understanding of how to react to these pressures is hampered by a lack of knowledge of the status of many of the world's protected areas. As an example, we have remarkably little detailed information on whether most of the world's protected areas are maintaining the values for which they were created. To help fill this gap, WWF has been collaborating with the World Bank and other partners in a study of management effectiveness in those protected areas where the two organisations are working, using a simple METT form based around a limited number of questions addressing key issues in protected area management. A description is included in Appendix 1.

The survey, which is ongoing, has two main aims:

- To help build understanding about the strengths and weaknesses of the protected area network, particularly in relation to the management of individual reserves and how this is changing over time.
- To guide the work of WWF and the World Bank in monitoring improvements to protected area management effectiveness in their projects.

The survey was run in 2003/2004 and again in 2005/2006. Analysis of the initial data from the first survey provided some useful management insights, but it has always been believed that the methodology offers more value when comparing one site over time rather than in making comparisons between different sites at a single time. The 2006 survey therefore provides hitherto unique opportunity to compare changes in the management effectiveness of a reasonable number of individual protected areas over time. However, not all protected areas completed the survey on both occasions. We have therefore divided our analysis into two parts:

- Analysis of the latest information from all sites, giving a single large dataset for analysis between sites.
- Comparison of the responses from those protected areas that have completed the questionnaire in 2004 and 2006, giving a smaller database for analysis across time.

Tracking tools have now been completed for 331 protected areas in 51 countries as part of the WWF/WB Forest Alliance. Protected areas from the following countries were included in the survey:

**Table 1: Countries included in the METT surveys in 2004 and 2006**

---

|                                |                      |
|--------------------------------|----------------------|
| ▪ Argentina                    | ▪ Liberia            |
| ▪ Armenia                      | ▪ Madagascar         |
| ▪ Azerbaijan                   | ▪ Malaysia           |
| ▪ Bhutan                       | ▪ Mongolia           |
| ▪ Bolivia                      | ▪ Morocco            |
| ▪ Brazil                       | ▪ Mozambique         |
| ▪ Bulgaria                     | ▪ Nepal              |
| ▪ Cambodia                     | ▪ Nigeria            |
| ▪ Cameroon                     | ▪ Pakistan           |
| ▪ Central African Republic     | ▪ Papua New Guinea   |
| ▪ China                        | ▪ Paraguay           |
| ▪ Colombia                     | ▪ Peru               |
| ▪ Côte d'Ivoire                | ▪ Poland             |
| ▪ Czech Republic               | ▪ Romania            |
| ▪ Democratic Republic of Congo | ▪ Russian Federation |
| ▪ El Salvador                  | ▪ Slovakia           |
| ▪ Finland                      | ▪ South Africa       |
| ▪ French Guiana                | ▪ Sweden             |
| ▪ Gabon                        | ▪ Tanzania           |
| ▪ Georgia                      | ▪ Thailand           |
| ▪ Ghana                        | ▪ Tunisia            |
| ▪ Greece                       | ▪ Turkey             |
| ▪ India                        | ▪ Turkmenistan       |
| ▪ Indonesia                    | ▪ Uganda             |
| ▪ Italy                        | ▪ Uzbekistan         |
| ▪ Kazakhstan                   | ▪ Vietnam            |
| ▪ Kenya                        | ▪ Zambia             |
| ▪ Lao PDR                      |                      |

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We hope that the survey and the WWF database will eventually extend throughout the world and to protected areas in other biomes. The terrestrial METT is now being used as a mandatory part of all GEF biodiversity and protected area projects, which are operating across the world and in various biomes. Combining different application of the METT into a single database would provide a much larger sample of the world's protected areas for detailed analysis. A similar METT already exists for marine protected areas, as modified by the World Bank from the original terrestrially-orientated version. Although the marine METT is not exactly the same as the one used here, which has primarily been developed for use in terrestrial (mainly forest) protected areas, they are similar enough to provide comparable results. Adaptations have also been developed for use in community conserved areas and for country specific use (i.e. in Namibia) and regional use (i.e. Central Africa).

## The results of the METT 2003-2006

This chapter outlines the main results and draws policy conclusions and recommendations. It follows the same format as the 2004 report, but with some additional sections.

### ▪ There are global similarities in the management of protected areas

The protected areas surveyed show identifiable patterns of strengths and weaknesses. In general, issues relating to protected area **legal establishment**, **boundary demarcation**, **protected area design**, **condition assessment** and **objective setting** have been relatively well addressed, while activities relating to **people** (both local communities and visitors) are generally less well addressed and also less effective, as are **management planning**, **monitoring and evaluation**, management of **budget** and work on **education and awareness**. The highest and lowest scores are shown in Table 2 below and mean scores in descending order are in Figure 2 (see page 29 for a full list of questions). Results were similar to those from the smaller subset in the 2004 survey, although there was generally an improvement in the lowest scores.

Table 2: Highest and lowest scored questions

| <i>Ten highest scored questions<br/>(in descending order)</i> | <i>Ten lowest scored questions<br/>(in descending order)</i> |
|---------------------------------------------------------------|--------------------------------------------------------------|
| ▪ Legal status                                                | ▪ Education and awareness                                    |
| ▪ Protected area demarcation                                  | ▪ Current budget                                             |
| ▪ Protected area design                                       | ▪ Security of budget                                         |
| ▪ Biodiversity condition assessment                           | ▪ Fees                                                       |
| ▪ Protected area objectives                                   | ▪ Management plan                                            |
| ▪ Resource inventory                                          | ▪ Monitoring and evaluation                                  |
| ▪ Regular work plan                                           | ▪ Indigenous peoples                                         |
| ▪ Protected area regulations                                  | ▪ Local communities                                          |
| ▪ Resource management                                         | ▪ Visitor facilities                                         |
| ▪ Economic benefits assessment                                | ▪ Commercial tourism                                         |

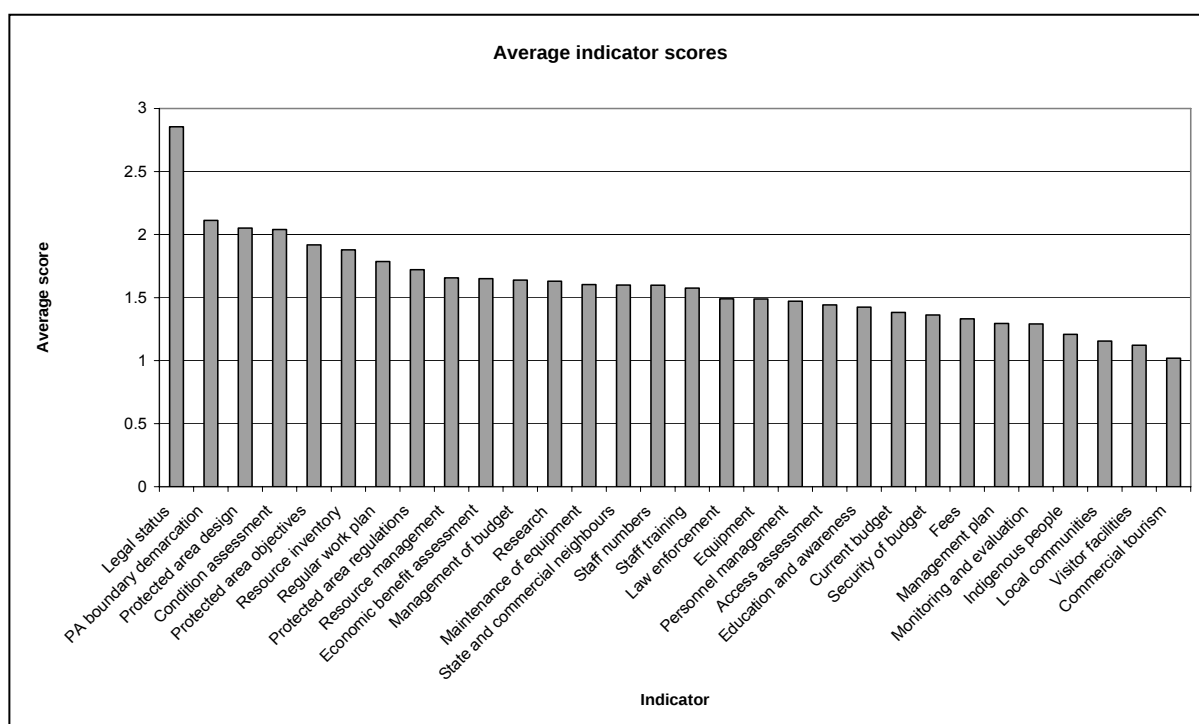


Figure 2: Average scores for each indicator

These are general patterns that sometimes disguise substantial variation between sites: the fact that there is a low average score on a particular issue does not mean that there are not individual protected areas that perform extremely well. By inspecting means and standard deviations for each question, we found that the most consistently successful aspects of management across all sites related to **legal status, protected area design and boundary demarcation**; those with the greatest variability included management plans, work plans, research, education and awareness, commercial tourism, fees and visitor facilities. This means that while some sites have good planning and tourist infrastructure, others have not addressed these issues to any great extent. The responses relating to input and participation of local and indigenous communities in management decisions had low average scores and moderate standard deviations, meaning that while most sites performed badly, a few performed well.

▪ **Biodiversity condition was linked with enforcement of boundaries and regulations and with various indicators suggesting an efficiently managed protected area**

Biodiversity condition, as derived from the responses on the METT forms, was significantly correlated with several of the individual indicators. Success in maintaining biodiversity appears to be linked to a well-regulated and managed protected area, where staff are assessing progress and making changes as necessary.

The strongest association of biodiversity condition (Kendall's tau above 0.25,  $p < 0.0001$ ) was found with:

- Law enforcement
- Control of access
- Resource management
- Monitoring and evaluation
- Maintenance of equipment
- Budget management
- Existence of annual work plans

It should be noted that these results should be treated with some caution as none of the correlations are very strong (despite being highly significant) and a larger dataset, more confidence in some of the data provided, and more analysis is needed to understand fully these potential linkages. Ideally, the biodiversity condition assessment reported in the METT should be based on field surveys of species or remote sensing of habitats (METT assessors are asked to detail where ever possible the data sources used); this more detailed dataset could also be correlated to the various effectiveness scores presented in the METT.

▪ **Staff numbers were linked closely with ability to manage the protected area**

Staff numbers correlated well with high scores for biodiversity condition and with the overall score for management effectiveness, although there are currently substantial data gaps for this question, particularly in the 2006 survey. There are large differences in average staff numbers in protected areas in different parts of the world (Figure 3)<sup>4</sup>.

This might be caused by reserves being of vastly different sizes in different parts of the world. However, when staff numbers per hectare are calculated the pattern of a higher staff density in Asia-Pacific parks and the lowest in Latin America persists, with Africa and Madagascar and Europe also having approximately similar staffing densities.

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<sup>4</sup> **Note:** Throughout this report the geographic regions conform to WWF's regional groupings, details of which can be found on [http://www.panda.org/about\\_wwf/where\\_we\\_work/index.cfm](http://www.panda.org/about_wwf/where_we_work/index.cfm)

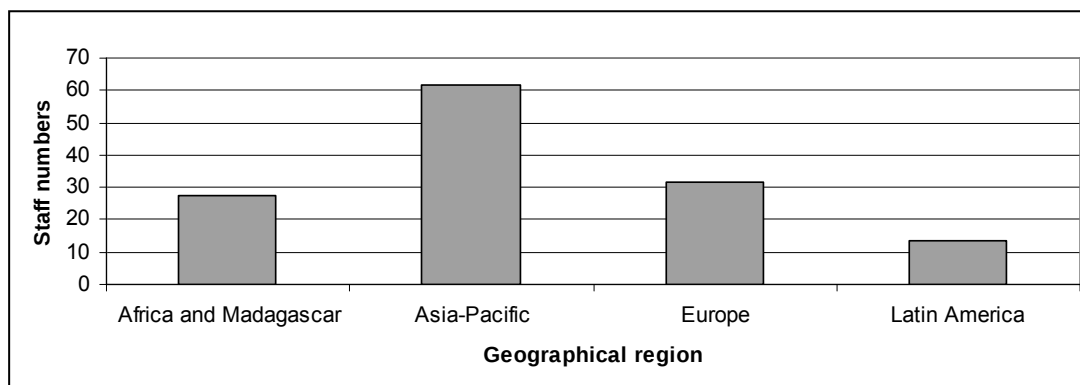


Figure 3: **Average staff numbers per region**

There is also a significant variation in the budgets per region, see Figure 4. However, the Latin American regional total is seriously distorted by a very high budget of over US\$10 million per year from one protected area in Brazil – if this is taken out of the calculation the regional budgets are as in Figure 5 below, which shows relative parity between Africa and Madagascar, Asia-Pacific and Europe and the Middle East, with less money per protected area in Latin America. Budgets reflect the pattern of staff numbers, suggesting that park managers tend to prioritise staffing with available budgets, although cheap labour costs in Asia mean that there are proportionately larger numbers of staff available for a given budget.

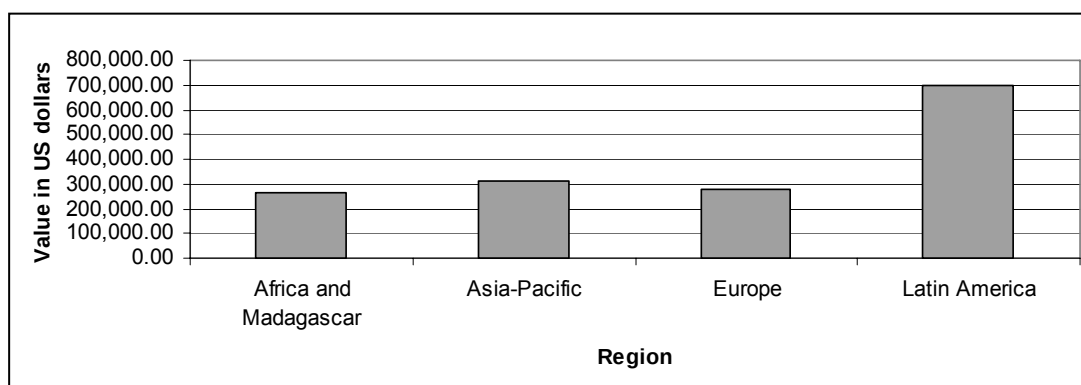


Figure 4: **Average annual total budget (US\$) of protected areas by region**

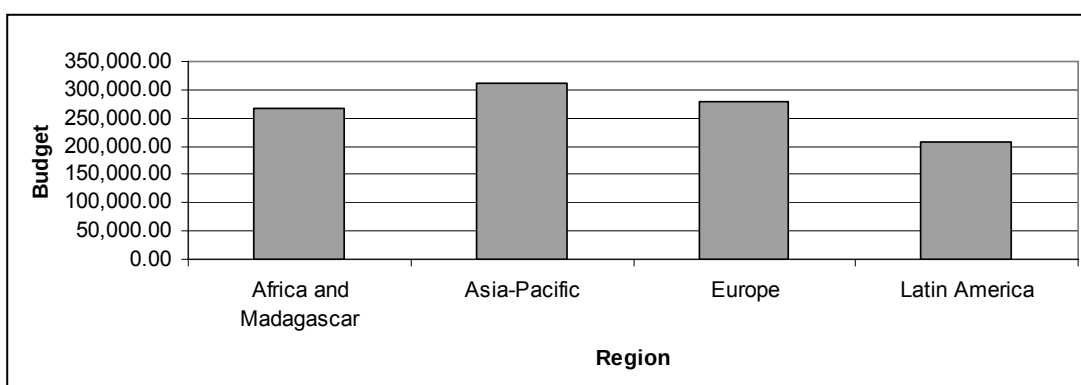


Figure 5: **Average budgets (US\$) per region - adjusted**

However, a very different pattern emerges if budget figures are calculated for each hectare. Forest protected areas in Europe tend to be far smaller than similar parks in other regions, so that budget and staffing are proportionately far higher in this region, as shown in Figure 6 below (these figures have also been adjusted by removing a single very high budget park in Brazil).

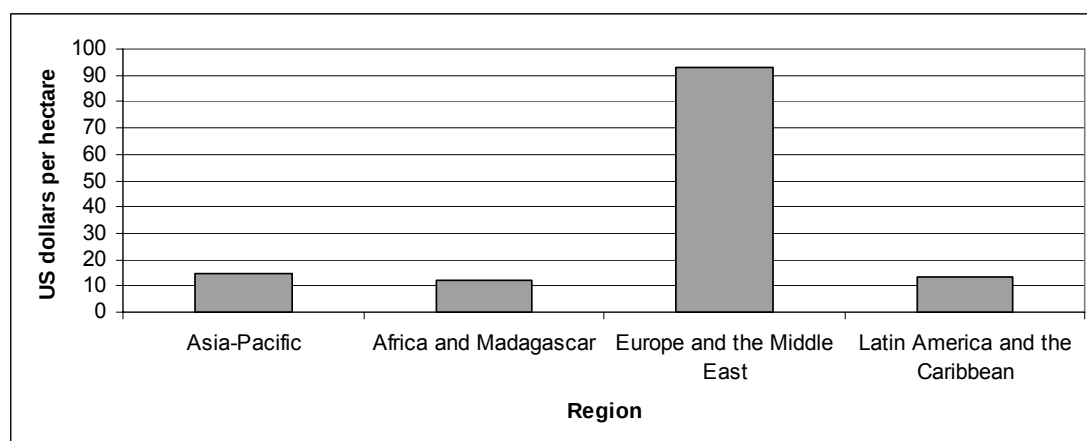


Figure 6: **Average regional budget per hectare – adjusted by area**

However, there is enormous variation in figures amongst protected areas – for instance within Europe the range per hectare was US\$0.01 to over \$4000 and all regions showed a similar high variation, making it difficult to draw general conclusions. These differences become more acute when the different sizes of protected areas are compared. Jaú National Park in Brazil covers an area of 2.2 million hectares (two thirds of Belgium) with four permanent staff, while Białowieża National Park in Poland covers 10,502 hectares (around half a per cent of Jaú) and has 103 permanent staff. On average the protected area staff in the Latin American countries surveyed are each responsible for well over 40 times as many hectares as their counterparts in Europe and the Middle East.

Local conditions such as accessibility and remoteness will also dramatically affect staffing needs, even within the same region. Although Australia is not included in the present study, it is known to have very low levels of staffing compared to other countries, yet its protected areas are generally regarded as effectively managed and successful: much of this is due to low human population densities and low levels of pressure, leading to parks being maintained even without permanent staff. Staffing needs are likely to be strongly related to pressures, surrounding population density and to overall governance.

Finally, differences in staffing and budgets are not simply related to location in richer and poorer countries: many protected areas surveyed in Italy for example had no permanent staff while Rinjani Protected Forest on Lombok Island covers 125,000 hectares and has 50 permanent staff.

### ▪ **Management effectiveness tends to improve over time**

The bulk of the world's protected area network is still quite new, or still in the process of development. Governments argue that because many protected areas have only been established very recently there has been insufficient time to develop effective management. In some parks, large amounts of money have already been spent by conservation organisations, governments and development agencies in building protected area infrastructure, improving capacity and helping protected area staff with planning and training. If management deficiencies are due to the lack of time available to build effective management regimes, it follows that management will improve over time and that therefore older protected areas show up as being more efficient.

Our analysis found that older protected areas did indeed tend to score slightly higher than newer ones, suggesting that given more time and effort, management can be improved<sup>5</sup>.

<sup>5</sup> We used a Spearman Rank Correlation Coefficient to look at relationship between date of gazettal and total score. This test is appropriate for ordinal data and assigns ranks to the data and then looks at correlations between ranks rather than treating the data as interval (real numbers). It shows a significant negative correlation (-0.25,  $p < .0001$ ) between gazettal date and score (i.e. the older the protected area the higher the score).

However, it should be noted that there are many exceptions. In Argentina, for instance, the Los Alerces National Reserve, established in 1937, scored only 56 overall, while La Aurora del Palmar Wildlife Refuge established comparatively recently in 1998, scored 73; similar discrepancies occur in many other countries. The relatively weak correlation and the many exceptions suggest that strengths and weaknesses may be endemic to some protected areas and that unless targeted management action is taken, time alone will not improve management or condition. Clearly some protected areas are failing to address major management problems and a few may even become less effective as time goes on.

## ▪ Management effectiveness differs around the world

Management effectiveness is a serious concern to park agencies throughout the world. Although problems such as poaching and land incursions are often more spectacular in scale in developing world than in the richer countries, protected areas in the latter are often smaller (particularly in the case of Europe) so that stresses can have a disproportionately large effect.

Analysis of the total scores from the METT results gives an indication of overall effectiveness. However, this must be treated with some caution – the total score is an amalgamation of many varied strengths and weaknesses within management and hence only a very approximate indication of effectiveness. Notwithstanding this qualification, analysis did show definite trends and marked differences between regions; principally Latin America scored significantly lower (mean 39.9) than the other three regions (means of 50.1 and two of 53.1)<sup>6</sup> as shown in Table 3.

Table 3: Total score compared for regions

| Region                          | Number of parks | Mean total score |
|---------------------------------|-----------------|------------------|
| Africa and Madagascar           | 61              | 53.1             |
| Asia-Pacific                    | 94              | 50.4             |
| Europe and Middle East          | 102             | 53.1             |
| Latin America and the Caribbean | 74              | 39.9             |

Most of the protected areas assessed in Latin America were amongst the newest in the world and therefore may not yet have had time to develop effective management systems; they are also amongst the largest on a global scale and require proportionately large investment from countries that frequently do not have money to spare. Further work is required to analyse the results in terms of size of the protected area and date of establishment. However, this does suggest that if the major gains made in establishment of protected areas in several Latin American countries are to deliver the expected benefits, some further investment may be required in building management capacity.

## ▪ There were also significant differences between the effectiveness of protected areas in different IUCN categories

Governments are requested to categorise their protected areas according to the six IUCN management categories (one with two sub-categories). IUCN defines a protected area as: *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* and defines the categories as follows:

- **Category Ia:** managed mainly for science
- **Category Ib:** managed mainly for wilderness protection
- **Category II:** managed mainly for ecosystem protection and recreation
- **Category III:** managed mainly for conservation of specific natural features
- **Category IV:** managed mainly for conservation through management intervention
- **Category V:** managed mainly for landscape/seascape conservation or recreation
- **Category VI:** managed mainly for the sustainable use of natural resources

<sup>6</sup> Kruskal-Wallis Test:  $\chi^2 = 23.1216$ ; DF = 3; P < .0001

Analysis of the METT results found that there is a highly significant<sup>7</sup> association between overall score and IUCN category with the most highly protected categories exhibiting more effective management as outlined in Table 4 below.

Table 4: Relationship between overall score and category

| IUCN category | No. of protected areas in the analysis | Mean scores per category |
|---------------|----------------------------------------|--------------------------|
| Ia            | 50                                     | 55.26                    |
| Ib            | 31                                     | 57.00                    |
| II            | 118                                    | 53.97                    |
| III           | 2                                      | 44.50                    |
| IV            | 33                                     | 44.39                    |
| V             | 3                                      | 35.67                    |
| VI            | 32                                     | 39.66                    |

These figures need to be treated with caution, particularly in the case of Categories III and V because the data set is so small. It should be noted that a more detailed assessment of management effectiveness in Catalonia, Spain<sup>8</sup>, found that the Category V protected areas actually protected biodiversity more effectively than the smaller, more strictly protected areas (e.g. Category I).

There are several potential explanations for these differences, in addition to the possibility that the less “strict” categories are less effective *per se*. The METT assessment may be biasing results towards the values inherent in the stricter categories. Category V and VI may well be receiving proportionately less funding and other support than the stricter categories, therefore losing out on the very factors that have been identified as of critical importance. But also, because both these categories seek to balance human needs with the needs of biodiversity and ecology, the trade-off inherent in this could be reducing their effectiveness in delivering on “classic” protected area benefits. These may still be more effective in conserving biodiversity than other land uses, or than more strictly protected areas in areas where poor governance and capacity makes illegal degradation likely. Further work is needed to follow up this result; including more detailed studies of Category V and VI protected areas; this is currently planned by IUCN. In addition, they may suggest the need for more attention to the broader categories to find ways of increasing effectiveness in these reserve types.

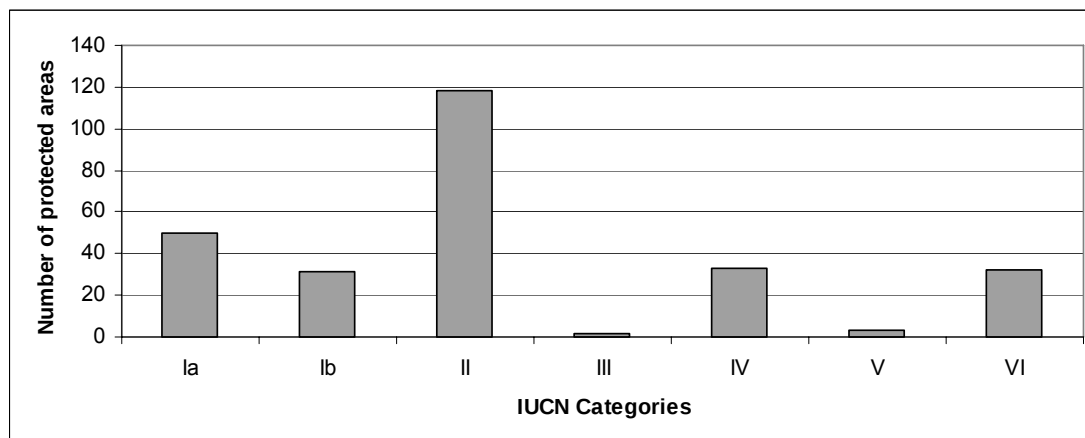


Figure 7: WWF involvement in protected areas within different IUCN categories

Interestingly, analysis of protected areas that lack a category altogether (12 sites in our sample) had the lowest mean score of all of 33.91. We might speculate that protected area authorities that do not even assign a category may be failing to manage effectively but this explanation is almost certainly overly simplistic: for instance some countries have made a

<sup>7</sup> Kruskal Wallis test  $\chi^2$  50.18, DF = 7,  $p < .0001$

<sup>8</sup> *El PEIN deu anys després: Balanç i perspectives*, edited by Josep Maria Mallarach and Josep Villa i Diego Varga, 2004, Institutio Catalana d'Historia Natural and University of Girona

conscious decision not to categorise some or all their protected areas and there is no reason to believe that this will impact on management standards. Uncategorised sites may be newer; which would make sense as age correlates to some extent with overall effectiveness.

It is also worth noting the types of reserves where WWF puts most of its protected area effort (see Figure 7 above). Almost three quarters of the protected areas in the survey are in categories I and II, the most strictly protected and with the most “traditional” approaches to conservation; only just over 1 per cent were in each of Category III and Category V. The large dataset from Brazil increased the total in Category VI compared with the analysis in 2004.

▪ **International designations appear to have little apparent correlation with overall effectiveness**

Over the past few decades, there has been a major effort by the international community and by individual governments to identify and then designate key areas – principally protected areas – as being of outstanding international value or of particular importance due to their management approach. In effect these areas represent the “best of the best” – a subset of outstanding sites<sup>9</sup>. These designations come at a cost: the government has to fulfil certain obligations and meet minimum standards, to report regularly and to accept being under a certain amount of international scrutiny. It has been assumed that such designations will confer additional benefits to make up for the effort, including better access to funding and support. It is also assumed that such world class “jewels” will generally be better managed than other protected areas, but this has hitherto not been tested.

We looked at three separate categories:

- UNESCO natural World Heritage sites: designated under the UNESCO World Heritage programme and listed for their unique importance – encapsulated as possession of “outstanding universal value” as defined by the World Heritage Committee
- UNESCO Man and the Biosphere reserves: a designation that encourages a model of conservation including a protected core zone and a large buffer zone, where compatible management takes place but where there is not strict protection
- Wetlands of international importance identified and listed under the Ramsar convention: such sites are not always protected areas with recognised IUCN categories, but are expected to meet certain conservation standards.

Both World Heritage and Ramsar also have associated “danger lists” (the World Heritage in Danger list and the Montreux List respectively) that identify those sites facing serious threats or management problems. World Heritage is currently investigating options for using a modified form of the METT to collect information for “periodic reporting”, the occasional reporting on progress that is obligatory for all sites and takes place by region, with each site reporting every seven years.

Based on the sample here, the analysis found no significant relationship between international designations and total effectiveness score. The mean scores for these sites were slightly higher than those without such designations but this was not statistically significant. This is not particularly surprising. The UNESCO World Heritage Centre has, for instance, been concerned about management effectiveness for some time and has initiated work to address this issue, including the development of better monitoring and evaluation to assist adaptive management<sup>10</sup>. Our own experience is that these designations are more important for governments than for individual protected area managers, who continue to do their best efforts whatever designation is in place. However, if international designations really reflect the “best of the best” in terms of biodiversity conservation, then the lack of any significant improvement as compared with other sites may give cause for concern.

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<sup>9</sup> See for example *World Heritage Forests*, CIFOR and UNESCO, 1999

<sup>10</sup> Through the *Enhancing our Heritage* project developed with funding from the United Nations Foundation.

- **Consumptive biological resource use (poaching, logging and non-timber forest products) is the largest threat to protected areas on a global scale**

The most serious threats identified by protected area staff or other respondents were consumptive biotic resource use (legal or illegal – predominantly poaching) identified in over 60 per cent of the protected areas, habitat conversion (in almost a quarter) and modification of ecological processes (in over a fifth).

These three together were overwhelmingly the most important threats identified during the assessment and occurred throughout the world (Table 5). However the occurrence of only one of the threats was significantly correlated with the overall management effectiveness score – sites reporting invasive species as a major threat had a significantly lower mean score ( $t = -2.08$ ,  $p < .05$ ).

Table 5: The main threats identified by protected area managers

| Threats                                                                      | % of PA listing |
|------------------------------------------------------------------------------|-----------------|
| Consumptive biotic resource use                                              | 61.95           |
| Habitat conversion                                                           | 22.44           |
| Modification of natural processes / ecological drivers / disturbance regimes | 20.24           |
| Abiotic resource use                                                         | 6.59            |
| Non-consumptive biotic resource use                                          | 6.10            |
| Transport/Energy Infrastructure                                              | 3.17            |
| Pollution/erosion siltation                                                  | 2.44            |
| Invasive species                                                             | 2.20            |

In the 2004 assessment, respondents were simply asked to list threats, resulting in many different descriptors that then had to be grouped for analysis. In the 2006 edition we used a typology of threats developed by the Conservation Measures Partnership (CMP), which helped to standardise responses (and re-categorised the 2004 data using this system). Respondents were asked to identify the two most serious threats from this list. Drawing on both these experiences, we modified the CMP list for the revised version of the METT.

It is interesting that some of the threats that have received high profile at the policy level and in the media – such as invasive species, fire and human-wildlife conflict – featured relatively few times in the list of key threats. This may need further analysis. For example the IUCN Species Survival Commission writes that: “it has been well documented that invasive alien species are the second greatest threat to biological diversity globally and the highest threat on many island ecosystems”<sup>11</sup>. Yet alien species hardly featured in the analysis. There are a number of possible reasons: the threat may remain unrecognised by many managers (this is suggested by the results of workshops using the RAPPAM system aimed at assessment of protected area systems<sup>12</sup>); the analysis may have under-represented places where aliens are the greatest threat (e.g. small islands, Mediterranean habitats, wetlands); aliens may be less of a threat to forest protected areas as the forests are generally more resistant to invasion than some other habitats types; or perhaps the threats from invasive species have been exaggerated.

The database on threats is an extremely valuable source of information and opinion and requires further assessment to extract useful lessons to apply to management. In general, the responses suggest that the day-to-day tasks of building support from local communities, preventing poaching and developing practical, long-term ways of maintaining biodiversity take up the majority of time for protected area managers.

<sup>11</sup> *Aliens* 13: 3

<sup>12</sup> *WWF Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) Methodology*, Jamison Ervin, 2003, WWF International, Gland

- **WWF identified some critical management activities and looked specifically at how these had changed between the two assessments**

We used results of the first assessment to identify some of the critical management activities (CMAs) that correlated most closely with overall management effectiveness to help guide WWF's management efforts<sup>13</sup>. They were:

- Legal designation
- Clear management objectives
- Demarcation of protected area boundaries
- Operational plan
- Operational budget
- Monitoring plan

Analysis showed that there were links between identification of management priorities and overall effectiveness as demonstrated by the total score. For example, those reserves nominating demarcation and zoning and management planning as being of critical importance have significantly lower overall scores, as do those listing the need for restoration as being of primary importance.

Although the ranking is preliminary and should be treated with caution, the analysis suggests that addressing these management activities will have a disproportionately large impact on overall management effectiveness. It was agreed that these activities should receive particular attention by WWF projects and guidance on this was widely distributed. We therefore wanted to compare the performance of the six identified CMAs between the two assessments: had assessing management effectiveness helped WWF field projects to identify priorities for action in a way that would boost overall performance?

Results from the whole assessment were rather disappointing with little overall change detectable in the effectiveness of the six key activities. However, when the protected areas that had been subject to repeat assessments were analysed separately, improvements were seen in five out of six of the CMAs (although the score for overall effectiveness of demarcation of protected area boundaries had actually declined to a certain extent): see Table 6 below.

It seems that many protected areas therefore still lack management components that have been identified as amongst the most important from the perspective of overall effectiveness, even when WWF is directly involved in capacity-building exercises. It might be worth looking in more detail at some of the sites that have shown no improvement, to see if this is due to misdirection of effort, lack of resources or because in particular protected areas the management activities were not as high a priority as is generally the case.

**Table 6: Comparison of critical management activities in repeat assessments**

| Critical management activities           | Failure to meet minimum standards |                       |        |
|------------------------------------------|-----------------------------------|-----------------------|--------|
|                                          | 1 <sup>st</sup> round             | 2 <sup>nd</sup> round | Change |
| Legal designation                        | 3                                 | 0                     | -3     |
| Demarcation of protected area boundaries | 5                                 | 8                     | +3     |
| Clear management objectives              | 14                                | 10                    | -4     |
| Operational plan                         | 17                                | 12                    | -5     |
| Operational budget                       | 48                                | 35                    | -13    |
| Monitoring plan                          | 41                                | 38                    | -3     |

It is difficult to be certain how much weight to give these results but they intuitively make sense. If a protected area is still at the stage of planning or marking out its perimeter it is likely to have a relatively lower overall performance.

<sup>13</sup> *Minimum requirements for protected area management. Forests for Life Protected Area Initiative Guidance Note*, 2005, Nigel Dudley and Sue Stolton, WWF Forests for Life Programme, Gland, Switzerland

▪ **Managers identified a slightly different list of critical management activities**

The six activities outlined in the previous section were found by comparing management effectiveness with overall score. Respondents were also asked to identify those critical management activities (CMA) that they *considered* to be the most important. Again these were grouped into a number of distinct fields and their scores totalled. The results are given in full below, listed in order of importance.

The results are significantly different. **Law enforcement and surveillance** was by far the most important management activity identified by managers in both 2004 and 2006, followed by the need to work with **local communities**, and only then by issues like **management planning** and building institutional and governance **capacity**. Other important issues included ecotourism, education and awareness, working with regional authorities (which declined slightly in the overall assessment in 2006 as compared with 2004) and research. Results are given in Table 7 below.

It is interesting that despite the large number of protected areas where law enforcement and community relations are identified as top priorities by managers, these do not emerge as being amongst the top six in the overall analysis of results (although there is still a strong correlation between law enforcement and management effectiveness – see following section). This may be in part because they are subsumed in some of the six CMAs identified from the first large-scale application of the METT; for instance demarcation, clear management objectives and operational plans will also provide a framework for addressing illegal activity.

Table 7: Critical management activities identified by managers and listed in descending order

| Critical management activity                   | % listing | t-test | p     | Interpretation                                                       |
|------------------------------------------------|-----------|--------|-------|----------------------------------------------------------------------|
| Law enforcement and surveillance               | 32.63     | -2.32  | .02   | Sites listing this CMA have higher mean score than sites that do not |
| Working with local communities                 | 14.5      |        |       |                                                                      |
| Management planning                            | 11.48     |        |       |                                                                      |
| Building institutional and governance capacity | 10.88     |        |       |                                                                      |
| Ecotourism                                     | 10.27     | -3.87  | .0001 | Sites listing this CMA have a significantly higher mean score        |
| Education and awareness                        | 9.67      |        |       |                                                                      |
| Working with regional authorities              | 9.37      |        |       |                                                                      |
| Research                                       | 9.37      |        |       |                                                                      |
| Demarcation and zoning                         | 5.74      | 2.98   | 0.003 | Sites listing this CMA have a significantly lower mean score         |
| Promoting sustainable resource use             | 5.44      |        |       |                                                                      |
| Monitoring                                     | 5.14      |        |       |                                                                      |
| Infrastructure development                     | 4.83      |        |       |                                                                      |
| Fundraising                                    | 4.53      |        |       | Sites listing this CMA have a significantly lower mean score         |
| Restoration                                    | 3.32      | 2.02   | .05   |                                                                      |
| Fire management                                | 2.72      |        |       |                                                                      |
| Species                                        | 2.11      |        |       |                                                                      |
| (re)introduction,/control/breeding             |           |        |       |                                                                      |
| Equipment and facilities                       | 1.81      |        |       |                                                                      |
| Alien Species control                          | 1.81      |        |       |                                                                      |
| Resolving tenure problems                      | 1.51      |        |       |                                                                      |
| Improving habitat                              | 1.21      |        |       |                                                                      |
| Species management                             | 1.21      |        |       |                                                                      |
| External communication and publicity           | 0.91      |        |       |                                                                      |

- **Enforcement activities are critical, particularly where protected areas face problems of poaching or invasion, but need to be balanced by efforts on community relations**

Over 60 per cent of protected areas identified consumptive biotic resource use as the number one threat and around a third identified enforcement as their primary management aim. Enforcement also shows a strong association with overall management effectiveness: the better the enforcement, the more effective the protected area. This result echoes earlier research by Conservation International<sup>14</sup>, although this factor seems likely to be most true in areas of high poverty, weak governance or high population pressure because, for instance, resource use was not a significant threat in New South Wales, Australia<sup>15</sup>.

Well-trained, well-equipped and motivated teams of rangers are fundamental to the success of most protected areas. But to be effective, the local enforcement effort needs to be backed by a broader environment of good and appropriate governance that ensures penalties are enforced.

The existence of good protected area regulations is generally recognised as essential and this scored high in the analysis and correlated well with overall effectiveness as indicated by the total score.

While some of the problems of protected areas can be addressed through improved community relations and sometimes by new approaches to management, many parks are likely to face continual pressure, often from well organised criminal groups (who also cause problems for local communities). Some of the clearest evidence of the value of the natural resources within national parks and nature reserves is the effort expended by some people to try and steal these resources. It is no particular surprise, therefore, that effective enforcement activities correlate with scores for good biodiversity condition (Kendall's tau = 0.29158,  $p < .001$ ).

Many protected area staff place an increasing emphasis on community issues and sustainable resource use – issues that would probably not have appeared in most protected area management plans a few years ago. In particular, it is clear that even in Category I and II protected areas, many managers are working with local communities to develop sustainable harvest policies to mitigate the impacts of the protected area on adjacent people. These issues become increasingly important in the categories that place greater emphasis on people within the landscape or seascape, including especially category V. As the use of the categories that allow resource harvesting is increasing, the need for community relations skills within protected area agencies will also continue to increase.

- **Management and planning are also essential – although attitudes towards what constitutes good planning are changing over time**

The Convention on Biological Diversity has identified the need for completing or updating management plans as a critical aspect of its *Programme of Work on Protected Areas* and set a deadline of 2008 for this work to be completed. Our research suggests that this is a good decision and that eventual success of protected areas is likely to be closely correlated with making sure that basic planning has been undertaken and managers and their staff have a clear idea of priorities.

However, our survey results indicate that this is currently an area where considerable improvement is needed with management plans scoring sixth from lowest in the consolidated METT. That is, many protected areas still have no agreed approach to management. There may be several reasons for this. Long-term planning takes time and effort, both of which are

<sup>14</sup> Aaron G Brunner, Raymond E Gullison, Richard E Rice and Gustavo A B de Fonseca (2001); Effectiveness of parks in protecting tropical biodiversity, *Science* **291**: 125

<sup>15</sup> *State of the Parks 2004*, Department of Environment and Conservation, New South Wales – most commonly reported threats were weeds, pest animals and inappropriate fire regimes

sometimes hard to find by managers struggling to address immediate problems. Management plans have also developed somewhat of a bad reputation through the existence of many that have been too theoretical, too top down (often completed by consultants that have no long-term link to the protected area) and – worst of all – never properly implemented. Regardless of the problems of developing a good management plan, running a protected area without any agreed plan carries dangers of missing out important management activities or wasting effort on things that are not particularly important.

A new generation of management plans is now being developed, more target orientated, drawn up in consultation with a wide range of stakeholders inside and outside protected areas and more adaptive, often existing mainly in electronic form, making updating easier. The overall assessment of management effectiveness shows that planning is important and the CBD currently provides an impetus for helping this to happen; there is a strong argument for conservation projects to prioritise completing management plans in the next few years.

## Comparing the same sites over time

The METT was developed more for tracking progress in one site over time than for comparing between sites. Unfortunately, it proved quite difficult to persuade WWF staff to repeat the assessment and only a third of those sites surveyed in 2004 had forms repeated in 2006 – 79 in total. This suggests that the importance of regular monitoring has not been integrated into the expectations or work programmes of project staff, even in the case of a comparatively quick assessment such as the METT. It also suggests that WWF itself has not fully integrated the METT into its regular monitoring and reporting systems on protected areas.

Nonetheless, the 79 sites still give a larger data set for comparisons than has existed hitherto. The following analysis compares changes in these sites, summarised in Table 8.

Table 8: Changes in scoring between 2004 and 2006

| Question                | No of PA's with change | No of PA's improved | % improved | No of PA's deteriorated | % deteriorated | Notes                                                              |
|-------------------------|------------------------|---------------------|------------|-------------------------|----------------|--------------------------------------------------------------------|
| Boundary demarcation    | 55                     | 15                  | 27.3       | 9                       | 16.4           |                                                                    |
| Management plan         | 40                     | 28                  | 70.0       | 10                      | 25.0           | Majority of declines related to decline in implementation of plans |
| Personnel management    | 44                     | 12                  | 27.3       | 13                      | 29.5           |                                                                    |
| Staff training          | 48                     | 18                  | 37.5       | 9                       | 18.8           |                                                                    |
| Current budget          | 52                     | 16                  | 30.8       | 6                       | 11.5           | 3 sites lost their budget in the interim                           |
| Security of budget      | 51                     | 18                  | 35.3       | 6                       | 11.8           | Change mainly between "no" and "very little" security              |
| Equipment maintenance   | 47                     | 18                  | 38.3       | 9                       | 19.1           | Mainly changing from "ad hoc" to "planned" maintenance             |
| Education programme     | 51                     | 19                  | 37.3       | 6                       | 11.8           | Main changes involve starting a programme from nothing             |
| Indigenous peoples      | 38                     | 10                  | 26.3       | 7                       | 18.4           | Major changes in improvement and deterioration in relations        |
| Local communities       | 47                     | 22                  | 46.8       | 5                       | 10.6           | Types of improvement very variable                                 |
| Visitor facilities      | 54                     | 18                  | 33.3       | 4                       | 7.4            | Mainly in starting the process of provision                        |
| Commercial tourists     | 43                     | 15                  | 34.9       | 8                       | 18.6           | Most changes at the bottom end of effectiveness                    |
| Condition assessment    | 46                     | 22                  | 47.8       | 9                       | 19.6           |                                                                    |
| Monitoring & evaluation | 54                     | 17                  | 31.5       | 6                       | 11.1           |                                                                    |

(Note: some sites omitted certain questions (e.g. the question about indigenous peoples will only be answered if they are present) so not all breakdowns add up to the total of 79.)

The highest level of improvement was found in management planning, condition assessment, relations with local communities and education. Parks had declined in particular in personnel management and, paradoxically, also in management planning. Overall, there are more improvements than declines. In relation to the total score, 60 per cent of sites improved while 34 per cent declined and 6 per cent remained unchanged. Of the 6 critical management activities identified as most closely related to overall effectiveness, demarcation and monitoring plan both saw marked increases and – as management planning also increased – it can be inferred that the identification of clear management objectives was also improved.

These overall changes reflect genuine changes as sites address management questions, including those identified in the first METT. However, it may also be influenced by the desire of staff to show that their sites and management have improved and this is an area where some independent auditing would be particularly valuable. More generally, at this stage it would be very useful to compare results from individual sites in the two rounds of the METT in more detail. As an example, this has been completed for one protected area from Cameroon below.

### **A closer look at the results: Boumba Bek – Cameroon**

The Boumba Bek and Nki Protected Area comprises 238,260 ha of forest in southeast Cameroon. The forest, one of the more isolated and thus intact forest blocks in the country, is important for its large populations of elephants, gorillas and chimpanzees. The reserve, which was only fully gazetted in 2005, is managed by the Ministry of the Environment and Forests, with support from WWF and GTZ.

WWF has been working in Boumba Bek since 1992, through its South East Forests Project, with the aim of having the area gazetted as a national park and ensuring appropriate management. With the creation of the national park, WWF is increasing its presence and programmes in the area. For example, it is hoped that the creation of community hunting zones around the forests will encourage the local population to help protect the wildlife from poachers. However, concern has been voiced about the rights of the indigenous Baka (pygmy) people whose traditional lands overlap Boumba Bek-Nki National Park.

Boumba Bek completed the METT in May 2003 and December 2005. In 2003 the total score was 55 and in 2005 this had increased to 62. Table 9 compares the individual scores from each of these assessments and the discussion below provides more detail of the results; this demonstrates that comparing overall results is only a very approximate measure that can hide a range of different management success and challenges.

**Table 9: Comparison of 2003 and 2005 METT results for Boumba Bek**

| Question No. | 2003 | 2005 | Change | Question No. | 2003 | 2005 | Change | Question No. | 2003 | 2005 | Change |
|--------------|------|------|--------|--------------|------|------|--------|--------------|------|------|--------|
| <b>1</b>     | 2    | 3    | +1     | <b>11</b>    | 2    | 2    | 0      | <b>22</b>    | 2    | 1    | -1     |
| <b>2</b>     | 2    | 2    | 0      | <b>12</b>    | 1    | 2    | +1     | <b>23</b>    | 2    | 2    | 0      |
| <b>3</b>     | 1    | 2    | +1     | <b>13</b>    | 1    | 2    | +1     | <b>23b</b>   | 1    | 2    | +1     |
| <b>4</b>     | 3    | 2    | -1     | <b>14</b>    | 1    | 2    | +1     | <b>24</b>    | 0    | 1    | +1     |
| <b>5</b>     | 3    | 2    | -1     | <b>15</b>    | 1    | 2    | +1     | <b>25</b>    | 2    | 1    | -1     |
| <b>6</b>     | 3    | 2    | -1     | <b>16</b>    | 1    | 1    | 0      | <b>26</b>    | 1    | 1    | 0      |
| <b>7</b>     | 0    | 1    | +1     | <b>17</b>    | 2    | 2    | 0      | <b>27</b>    | 2    | 3    | +1     |
| <b>7b</b>    | 0    | 3    | +3     | <b>18</b>    | 2    | 2    | 0      | <b>27b</b>   | 0    | 0    | 0      |
| <b>8</b>     | 3    | 2    | -1     | <b>19</b>    | 2    | 2    | 0      | <b>28</b>    | 2    | 2    | 0      |
| <b>9</b>     | 2    | 2    | 0      | <b>20</b>    | 2    | 2    | 0      | <b>29</b>    | 2    | 2    | 0      |
| <b>10</b>    | 3    | 3    | 0      | <b>21</b>    | 2    | 2    | 0      | <b>30</b>    | 2    | 2    | 0      |

**METT recorded the following achievements at Boumba Bek:**

- **Legal status** (Question 1): the protected area has now been fully gazetted.
- **Law enforcement** (Q 3): there has been an increase in staff capacity / resources with respect to law enforcement, although some deficiencies remain (see recommended next steps below).
- **Management plan** (Q7 and 7b): In 2003 it was reported there was no management plan, whereas in 2005 it was reported that a plan is being prepared, and that there is a participatory process in place, a scheduled plan and process for plan development and review, and that monitoring, research and evaluation results will be used in planning.
- **Staff and budget issues** (Q12-15): the 2005 assessment shows an improvement in issues relating to staff numbers, personnel management, staff training and budget. All issues have gone from being inadequate or problematic to being either adequate or acceptable, but the “next steps” section highlights that further capacity development is required.
- **Visitor facilities** (Q 24): whereas there were no facilities in 2003, some facilities are being put in place.
- **Condition assessment** (Q27): in 2003 it was reported that there was some partial degradation, although this were not affecting the park’s most important values, by 2005 it was reported that biodiversity, ecological and cultural values are all predominantly intact.

**METT recorded the following setbacks:**

- **PA objectives** (Q4): in 2003 it was reported that objectives were agreed and were being implemented, whereas in 2005 it was reported that implementation was only partial. This change recognises that a management plan needs to be developed with full stakeholder agreement (see “next steps” section below).
- **Reserve design** (Q5): in 2003 it was reported that the design of the protected area was aiding achievement of objectives, whereas in 2005 it was reported that, although not constraining objectives, the design could be improved. This again recognises the needs for better relations and recognition of the needs of the Baka (see “next steps” again). The assessment form notes here that the protected area has community hunting areas, professional sport hunting areas, community forest zones for exploitation and also logging concessions in surrounding zones, but this can be improved by integration the use zones for Baka indigenous people.
- **Boundaries** (Q6): in 2003 it was reported that the boundary was known and demarcated, whereas in 2005 it was reported that boundary was known but was not appropriately demarcated, and this process is highlighted in “next steps” (and suggests that the 2003 assessment was over-optimistic on this issue).
- **Work plans** (Q8): in 2003 it was noted that work plans exist and all activities were achieved, whilst in 2005 it was reported although plans exist not all activities are completed.
- **Indigenous peoples** (Q22): the 2005 assessment records a change in indigenous peoples’ relationship with managers, from indigenous and traditional people directly contributing to management, to being involved but having no direct impact in decision making. This response highlights the various challenges in developing relationships with the Baka and is addressed in many of the actions highlighted in the next steps section.

**Adaptive Management:**

In relation to next steps, the 2005/2006 assessment identified the following actions as necessary:

- **Protected area regulations** (Q2): Lobbying the government authority to invest fully in protected area management, including the appointment of a conservator and other technical staff. This is also highlighted in Q26 on fees and Q29 on economic benefits, where the need to lobby the government to invest some of the revenues generated from eco-tourism activities into protected area management.
- **Budget** (Q15 and 16): Development of business plan. Development and implementation of a strategy for fund raising and lobbying the government of Cameroon to increase budget for protected area development and to implement long term financial mechanisms such as a trust fund.
- **Law enforcement** (Q3): Development and implementation of training programme for game guards.
- **Protected area objectives** (Q4): Development of management plan with participation of all stakeholders.
- **Protected area design** (Q5): Development of partnerships with different stakeholders involved in the management of different use zones and promotion of sustainable utilisation and good forest management practices.
- **Boundaries** (Q6): Boundary demarcation using national laws.
- **Resource inventory** (Q9): Finalized assessment of critical use areas for Baka pygmies.
- **Resource management** (Q11): Reinforcement of the management team and also capacity building in the protected area of management techniques of existing staff.
- **Staff and budget issues** (Q12-14): Reinforcement of the management team and also capacity building in the protected area of management techniques of existing staff.
- **Education and awareness programme** (Q20): Review environmental education and sensitisation programs to include community wildlife management aspects and working in collaboration with protected area authorities for overall interest of all local stakeholders.
- **State and commercial neighbours** (Q21): Development of partnerships with different stakeholders involved in management of different use zones.
- **Indigenous people** (Q22): Development and implementation of a strategic plan mainstreaming indigenous peoples' involvement in natural resource management activities and benefit sharing schemes.
- **Local communities** (Q23): Establishing management committee for Boumba Bek National Park involving representatives of local community and indigenous peoples and improvement of the benefit sharing mechanism.
- **Monitoring and evaluation** (Q30): Putting in place socio-economic monitoring to compliment and integrate existing ecological monitoring system.

## Recommendations

The METT is currently the largest assessment of individual protected areas using a single methodology and is building up a unique and important data set of management effectiveness over time. However, although the assessments are quite quick to undertake, they nonetheless represent a considerable investment in time and money for WWF: their continuation is only worth considering if they also have direct and practical benefits in terms of improved conservation practice. The following recommendations are therefore preliminary and require careful discussion within WWF.

- **Continue the surveys once every 2-3 years:** protected areas that are not managed effectively are likely to be failing in their objectives. Given the central role that protected areas play in conservation strategies, assessment of their effectiveness should not be limited to time-limited projects but rather be considered an integral part of everyday management: we therefore suggest that WWF join with the World Bank and the UN Global Environment Facility in making the METT a standard part of project assessment.
- **Integrate the results into project planning at site, national and global levels:** these assessments are not academic exercises but rather aids to good conservation design. The first METT analysis was used immediately to help set milestones for the Forests for Life targets and to determine priorities in effort: some existing projects that were clearly not of primary concern to protected areas were cut back and new initiatives taken in response to the results. The METT can contribute, in tandem with other assessments, in four main ways:
  - **Globally:** by helping to inform WWF International's global targets and priorities relating to protected areas, including policy initiatives; there is also an intention to link the available METT data to the World Database of Protected Areas maintained by the UNEP World Conservation Monitoring Centre, which is the primary source for reporting to various international conventions. WWF collected METT data would therefore feed directly into the policy process through this database.
  - **Nationally:** by identifying key strengths and weaknesses at country level for WWF National Organisations and Programme Offices;
  - **In projects:** by tracking progress within individual protected areas and providing a regular assessment and analysis tool for working with protected area staff;
  - **For donors:** by setting a standardised reporting system that considers all aspects of protected area management rather than simply those covered by a particular project (and in these cases annual use of the METT may be warranted).
- **Increase focus on critical management activities:** one of the slight disappointments in the second assessment was that the six critical management activities identified in the first round (legal designation; clear management objectives; demarcation of protected area boundaries; operational plan; operational budget; and monitoring plan) had only improved to a fairly modest extent between 2004 and 2006. Given that these all seem to be of key importance in improving management, and several are directly identified in the Convention on Biological Diversity's *Programme of Work on Protected Areas*, further effort to address these in WWF projects would seem to be justified.

## Appendix 1: The survey

There is a growing concern that many protected areas are not achieving their objectives. One response has been an increase in work on management effectiveness, including development of several assessment tools. The WCPA has developed an assessment “framework”<sup>16</sup> to provide guidance and encourage high standards. It is based on the idea that good management follows a process that has six distinct elements:

- it begins with understanding the **context** of existing values and threats
- progresses through **planning** and
- allocation of resources (**inputs**) and
- as a result of management actions (**processes**)
- eventually produces products and services (**outputs**)
- that result in impacts or **outcomes**

The World Bank/WWF Alliance for Forest Conservation and Sustainable Use has a target of: *75 million hectares of existing forest protected areas under improved management to achieve conservation and development outcomes by 2010*. To report progress on this target the Alliance developed a simple site-level tracking tool based on Appendix II of the original edition of the WCPA Framework, published in 2000. The tool was to be developed bearing in mind that a series of assessment tools already exist, ranging from the WWF’s RAPPAM methodology used to assess protected area system to detailed monitoring systems such as those being developed for UNESCO natural World Heritage sites<sup>17</sup>. The Alliance has identified that the tool needed to be:

- Capable of providing a harmonised reporting system for protected area assessment
- Suitable for replication
- Able to supply consistent data to allow tracking of progress over time
- Relatively quick, easy and cheap to complete by protected area staff
- Capable of providing a “score” if required
- Based around a system that provides four alternative text answers to each question
- Easily understood by non-specialists
- Nested within existing reporting systems to avoid duplication of effort

The resulting World Bank/WWF Management Effectiveness Tracking Tool (METT) is aimed to help **reporting progress** on management effectiveness and should not replace more thorough methods of assessment for the purposes of adaptive management. It consists of two main sections:

1. **Datasheet:** which details key information on the site, its characteristics and management objectives and includes an overview of WWF/World Bank involvement
2. **Assessment Form:** the assessment form includes three distinct sections, all of which should be completed:
  - **Questions and scores:** a series of 30 questions – each with four alternative responses – that can be answered by assigning a simple score ranging between 0 (poor) to 3 (excellent). Questions not relevant to a particular protected area are omitted, with a reason given in the comments section (for example questions about tourism will not be relevant to reserves where visits are prohibited).

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<sup>16</sup> Hockings, Marc, Sue Stolton Fiona Leverington, Nigel Dudley and José Courrau (2006); *Assessing Effectiveness – A Framework for Assessing Management Effectiveness of Protected Areas*; 2<sup>nd</sup> Ed. IUCN, Cambridge, UK and Gland, Switzerland

<sup>17</sup> The Alliance also supported the development of both the WCPA framework and the development of the WWF RAPPAM methodology

There will inevitably be situations in which none of the four alternative answers fit precisely, here the nearest answer is chosen and the comments section used to elaborate.

- **Comments:** a box next to each question allows for *qualitative judgements to be justified* by explaining why they were made.
- **Next Steps:** for each question respondents are asked to identify a long-term management need to further adaptive management at the site, if relevant.

**Final Score:** is calculated as a percentage of scores from relevant questions

#### Contents of the METT

The METT contains a context section and multiple choice questions, some with additional questions added to provide further details.

**Context:** information is requested on: name; size; location; date of establishment; details of ownership and management; staff numbers; annual budget; designations including reasons for particular designations (e.g. IUCN category, Ramsar site etc); and details of WWF and World Bank projects. Information is also requested on the two principle protected area objectives; two main threats and two critical management activities.

**Questions:** 30 questions cover a wide range of issues relating to management:

1. Legal status
2. Protected area regulations
3. Law enforcement
4. Protected area objectives
5. Protected area design
6. Protected area boundary demarcation
7. Management plan
- 7b. *additional questions about stakeholder involvement, periodic review and incorporation of research data into management*
8. Regular work plan
9. Resource inventory
10. Research
11. Resource management
12. Staff numbers
13. Personnel management
14. Staff training
15. Current budget
16. Security of budget
17. Management of budget
18. Equipment
19. Maintenance of equipment
20. Education and awareness programmes
21. State and commercial neighbours
22. Indigenous peoples
23. Local communities
- 23b. *additional questions about open communications and programmes to enhance community welfare*
24. Visitor facilities
25. Commercial tourism
26. Fees
27. Condition assessment
- 27b. *additional question about active efforts at restoration*
28. Access assessment
29. Economic benefit assessment
30. Monitoring and evaluation

The World Bank has been using the scorecard, and earlier versions, in monitoring its projects since 2001. In 2003, WWF started a serious attempt to use the METT in connection with all its projects involving forest protected areas, by asking forest officers to fill in the questionnaire, wherever possible in collaboration with the protected area manager.

### Strengths and limitations of the METT

The METT is a simple, site-based tool that relies largely on multiple-choice questions and thus on the opinion of whoever fills in the form. More detailed studies of protected area management<sup>18</sup> have found that initial opinions of managers – for example about primary threats to management – do not always emerge as real priorities on closer examination. There is also clearly a risk of managers providing an overly-optimistic picture of the strengths of management and our own knowledge of particular protected areas included in the current survey suggests that this may sometimes have occurred.

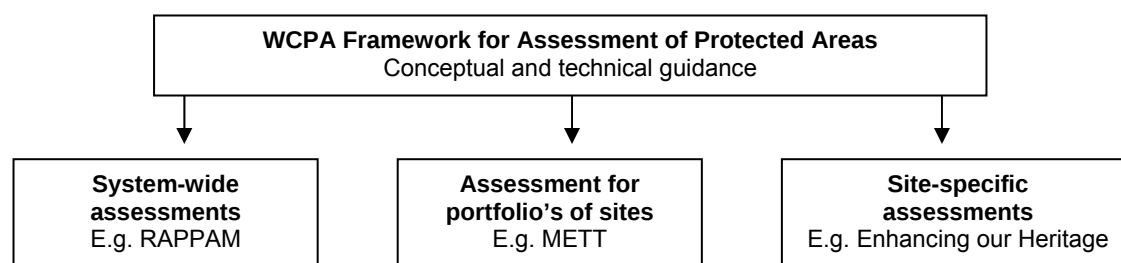
Results should be viewed with these caveats in mind. On the other hand, the system also has some advantages. It is a fast way to establish a baseline against which to measure progress, can be undertaken with minimal resources and provides a quick checklist for future priorities. For many managers, filling in the METT is the first time that they have ever been asked systematically about management effectiveness and experience from staff at the World Bank who have used the assessment repeatedly with the same sites suggests that regular assessment can encourage and help inform adaptive management.

### How does the METT fit into the larger picture?

WWF has supported the work of the WCPA in developing a comprehensive approach to assessment of protected area management effectiveness, and the METT is one of a series of approaches to assessment, that can be selected depending on time, resources and needs.

For simplicity, approaches to assessment can be divided into three, any of which can involve assessments that range from simple to detailed studies:

- **System-wide assessments:** covering all protected areas of a country or region and aiming to provide advice to managers of national or regional systems of protected areas: **for example** use of the WWF RAPPAM system to assess national or regional protected area networks
- **Portfolio-wide assessments:** covering all protected areas that are part of an organisation's portfolio, which may not necessarily form a "protected area system" and aiming to provide advice to managers of protected areas portfolios of large donors or intergovernmental organisations: **for example** the use of the METT to measure progress on project portfolios as reported here
- **Site-specific assessments** covering one or a cluster of contiguous protected areas and aiming to provide guidance to protect areas managers: **for example** the Enhancing our Heritage project working with natural World Heritage sites, or the Ecological Integrity methodology used by The Nature Conservancy in its protected areas



<sup>18</sup> For example using the system-wide WWF's RAPPAM methodology, the methodology developed in Central America by WWF and the technical university CATIE or the Enhancing our Heritage methodology being developed for natural World Heritage sites



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WWF is one of the world's largest and most experienced independent conservation organizations, with almost 5 million supporters and a global network active in more than 100 countries.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.



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