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Evaluating Effectiveness: A framework for assessing management effectiveness of protected areas 2nd Edition

IUCN

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Evaluating Effectiveness

A framework for assessing management effectiveness of protected areas 2nd Edition

Marc Hockings, Sue Stolton, Fiona Leverington, Nigel Dudley and José Courrau

Peter Valentine, Series Editor

Best Practice Protected Area Guidelines Series No. 14

JCU James Cook University

Rainforest CRC

WCPA World Commission on Protected Areas

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Other publications in the series are as follows:

National System Planning for Protected Areas. No. 1. Adrian G. Davey, 1998, x + 71pp. Also available in Chinese.

Economic Values of Protected Areas: Guidelines for Protected Area Managers. No. 2. Task Force on Economic Benefits of Protected Areas of the World Commission on Protected Areas (WCPA) of IUCN, in collaboration with the Economics Service Unit of IUCN, 1998, xii + 52pp. Also available in Russian.

Guidelines for Marine Protected Areas. No. 3. Graeme Kelleher, 1999, xxiv + 107pp.

Indigenous and Traditional Peoples and Protected Areas: Principles, Guidelines and Case Studies. No. 4. Javier Beltrán, (Ed.), IUCN, Gland, Switzerland and Cambridge, UK and WWF International, Gland, Switzerland, 2000, xi + 133pp. Also available in Spanish.

Financing Protected Areas: Guidelines for Protected Area Managers. No. 5. Financing Protected Areas Task Force of the World Commission on Protected Areas (WCPA) of IUCN, in collaboration with the Economics Unit of IUCN, 2000, viii + 58pp.

Evaluating Effectiveness: A Framework for Assessing the Management of Protected Areas. No. 6. Marc Hockings, Sue Stolton and Nigel Dudley, 2000, x + 121pp. Also available in Chinese and Russian.

Transboundary Protected Areas for Peace and Co-operation. No. 7. Trevor Sandwith, Clare Shine, Lawrence Hamilton and David Sheppard, 2001, xi + 111pp. Reprinted in 2003. Also available in Chinese.

Sustainable Tourism in Protected Areas: Guidelines for Planning and Management. No. 8. Paul F. J. Eagles, Stephen F. McCool and Christopher D. Haynes, 2002, xv + 183pp. Also available in Chinese, Russian and Spanish.

Management Guidelines for IUCN Category V Protected Areas: Protected Landscapes/Seascapes. No. 9. Adrian Phillips, 2002, xv + 122pp. Also available in Chinese, French and Spanish.

Guidelines for Management Planning of Protected Areas. No. 10. Lee Thomas and Julie Middleton, 2003, ix + 79pp. Also available in Chinese.

Indigenous and Local Communities and Protected Areas: Towards Equity and Enhanced Conservation. No. 11. Grazia Borrini-Feyerabend, Ashish Kothari and Gonzalo Oviedo, 2004, xvii + 112pp.

Forests and Protected Areas: Guidance on the use of the IUCN protected area management categories. No. 12. Nigel Dudley and Adrian Phillips, 2006, x + 58pp.

Sustainable Financing of Protected Areas: A global review of challenges and options. No. 13. Lucy Emerton, Joshua Bishop and Lee Thomas, 2006, x + 97pp.

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Executive summary

Management effectiveness evaluation is defined as the assessment of how well protected areas are being managed – primarily the extent to which management is protecting values and achieving goals and objectives. The term management effectiveness reflects three main 'themes' in protected area management:

- design issues relating to both individual sites and protected area systems;
- adequacy and appropriateness of management systems and processes; and
- delivery of protected area objectives including conservation of values.

Evaluation of management effectiveness is recognised as a vital component of responsive, pro-active protected area management. As well as being an essential tool at local, regional and national level, evaluation also has an increasing international context. Nations are agreeing to report on progress in conservation to their peers through institutions such as the World Heritage Convention and the Convention on Biological Diversity. In the latter, nations have committed to develop systems of assessing management effectiveness and to report on 30 per cent of their protected areas by 2010. These and other external demands for information on status and trends in protected area management, combined with the need for more data to meet the practical challenges of managing protected areas, have led to a rapid increase in interest in monitoring and evaluation (see Chapter 1).

Four major purposes drive evaluation of management effectiveness (detailed in Chapter 2). It can:

- lead to better management in a changing environment;
- assist in effective resource allocation;
- promote accountability and transparency; and
- help involve the community, build constituency and promote protected area values.

The range of evaluation purposes combined with the great diversity of protected areas – with different values, cultural settings and management regimes – means that it is not practical to develop a single assessment tool. For this reason, it was instead decided to develop a common Framework, which provides a consistent basis for designing assessment systems, gives guidance about what to assess and provides broad criteria for assessment. Based on this Framework, different systems using a range of evaluation 'tools' can be used to conduct evaluations at different scales and depths.

The Framework for management effectiveness developed by the IUCN World Commission for Protected Areas was published in the first version of this Best Practice Guideline.[1] It is further explained and interpreted, though not substantially altered, in this version (Chapter 3). It is based on the idea that protected area management follows a process with six distinct stages, or elements:

- it begins with reviewing **context** and establishing a vision for site management (within the context of existing status and pressures),
- progresses through **planning** and
- allocation of resources (**inputs**), and
- as a result of management actions (**process**),
- eventually produces goods and services (**outputs**),
- that result in impacts or **outcomes**.

This Best Practice Guideline is not intended as a 'how-to' manual and does not contain a detailed methodology, but explains (Chapter 4) the steps in designing and conducting an assessment, through the phases of:

1. defining assessment objectives, scope and resourcing;
2. choosing and developing a methodology, including establishing an assessment team and defining indicators;
3. implementing the assessment in the field and office; and
4. interpreting, communicating and using results.

The process of conducting an assessment often has great benefits in itself, through building cooperative teams of people and encouraging the sharing of knowledge and reflection.

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[1] Hockings *et al.* (2000).

Management effectiveness evaluation is only worth doing if it results in better managed protected areas: in other words if the results of an assessment are first *interpreted* to identify some practical lessons and then *acted upon* (Chapter 5). Appropriate, targeted communication to a range of audiences is critical, as is timely feedback to those who have contributed time and information to the assessment. Public reporting of results needs to be undertaken with some care, as agencies balance the desire for increased transparency with political sensitivities. At local, regional and global level, results can be used to adapt plans and practices, adjust resource allocation, revise policies and affirm good work being undertaken.

A number of key guidelines for good practice in evaluation are presented, drawn from the experience of many practitioners across the world (Chapter 6). Important needs and directions for the future are identified:

- Make evaluation part of 'core business': move from trial and intermittent assessments to regular exercises integrated into the management and planning cycles of protected area agencies;
- Improve data coordination and rationalization of assessments and compile data: cooperative work is underway to allow more global compilation of essential reporting information;
- Further develop cost-effective, meaningful monitoring systems and indicators, with emphasis on ecological integrity assessment and indicators for social, cultural and economic factors;
- Find better ways to engage with managers and communities;
- Look for common threads: begin to draw data together to find trends, themes and lessons across regions; and
- Make a difference: ensure results are interpreted, communicated and used.

To illustrate the progress being made in management effectiveness evaluation and to further assist those interested in the topic, case studies from assessments around the world are presented and a list of relevant resources including publications and websites is also provided at the end of this book.

Preface

The first version of this document was published in 2000. At that stage, although the IUCN-WCPA Management Effectiveness Evaluation Framework had been developed over several years, it had only been field tested in a few countries. The whole concept of assessing management effectiveness of protected areas was still in its infancy. The need for methodologies to assess protected areas had been discussed by protected area practitioners for several years, but only a handful of systems had been field-tested and implemented, and there was little commitment to management effectiveness beyond a few enlightened individuals in non-governmental organizations (NGOs) and parks agencies. There was also, in consequence, little evidence of the suitability of particular methodologies to meet the needs of the vast array of different types of protected area, and little experience in implementing the findings of assessments to achieve the aim of the whole exercise: *more effective conservation*.

Six years later, the situation is very different. *Management effectiveness evaluation* is a term now well recognised in the lexicon of protected area management. Many different assessment methodologies have emerged, most of them developed using the Framework agreed by the World Conservation Union (IUCN) and its World Commission on Protected Areas (WCPA), and the number of individual protected areas that have undergone some form of evaluation has risen from a few hundred to many thousand.

Clearly, not all of this progress can be linked to the publication of the Framework, but the fact that IUCN-WCPA could agree on a basic approach has undoubtedly had an enormous influence on the way that assessment systems have developed. Perhaps even more importantly in the long term, the process of developing the Framework also helped to link practitioners involved in management effectiveness, who have continued to work together, sharing expertise and lessons learned, collaborating, arguing, swapping ideas and providing a supportive framework for learning. Together, the development of basic structures of assessment and these informal partnerships have provided much of the impetus for the rapid development of protected area assessment. It has also been a lot of fun.

In the conclusions to the first edition of the Framework we noted that success in applying assessments and in integrating monitoring and evaluation into everyday protected area management required progress on three major issues: awareness, willingness and capacity.

The issue of *awareness* certainly seems less of a problem now than it did in 2000. Evaluation of effectiveness is now recognised as being a critical step in successful management by a growing number of protected area agencies and their government departments. The Convention on Biological Diversity (CBD) and UNESCO's World Heritage Centre have both placed a priority on evaluation and are setting concrete targets for member states. Donor agencies, including The World Bank and the Global Environment Facility (GEF), are requiring that any protected areas they help to support must conduct assessments as a regular feature of the project cycle.

Meeting in Chitwan buffer zone © *Sue Stolton*

There is also more *willingness* to assess than we originally anticipated, although with some important caveats. A growing number of governments is promoting assessments and publishing the results, sometimes very publicly through press conferences, published documents and dedicated websites. Other stakeholders often welcome the chance to have a say about protected areas when assessments are participatory. However, to date these exercises have tended to involve the stronger protected area agencies and the enthusiasm to publish results is likely to diminish if the message is less encouraging. Agencies are understandably worried about publicising critical evaluations. The very success of assessments is also creating a danger of cynicism amongst staff if they are expected to complete different assessments for different donors. Some efforts at rationalization are needed.

Capacity remains an issue, sometimes in ways that we had not anticipated. Fears remain about the costs of assessments, in terms of time and money, particularly during a period when resources are generally becoming scarcer. Conversely, some agencies have found that shortage of staff and funds increases the need for assessments, to ensure that available resources are used as efficiently as possible. Such strategic actions often play out well with donors and with government treasuries. However, there are also issues of capacity in terms of the ability of staff members to implement and, probably more commonly, draw maximum benefits from an assessment; there is a large difference between simply assembling data and then going on to interpret it in terms of how to make changes to management. We have become convinced that successful implementation usually needs good training materials and support. Some proposals for capacity development are included in this edition.

We have also learned a lot since 2000; hence the justification for the new edition, which we hope is rooted more in real experience than in theory and hopes. The basic Framework remains unchanged, but we have expanded some sections where we now know more (for instance regarding monitoring outcomes and how to go about implementation). All the case studies are new or completely rewritten and more directly indicate how the Framework has been used to develop a variety of evaluation systems. We have expanded the team of authors to make sure that some of these new aspects are adequately covered. As always, this process remains incomplete; we therefore encourage anyone who uses this Guideline to let us know what works and what does not work, and to make suggestions for improvements in the future. Let us maintain the spirit of cooperation and mutual support that have made working in this field such a pleasure.

Acknowledgements

It is appropriate to first recognise the contribution of the many people who were acknowledged in the previous edition of these Guidelines – especially the work of the members of the Management Effectiveness Task Force and the WCPA Thematic Programme on Management Effectiveness of Protected Areas that replaced the Task Force in 2001.

The preparation of this second edition has drawn upon the experience of many people who have taken the theory and practice of management effectiveness evaluation forward since the publication of the first edition of these Guidelines in 2000. The participants in the January 2003 preparatory meeting for the Management Effectiveness workshop at the Vth World Parks Congress provided important input into this process. Parks Victoria, Queensland Parks and Wildlife Service, UNESCO World Heritage Centre and the Worldwide Fund for Nature are especially thanked for supporting this meeting and the subsequent workshop at the Congress itself.

Many individuals and organizations have contributed to the development of ideas presented in these Guidelines and contributed also to the practice of management effectiveness evaluation in the field. In particular we would like to acknowledge the contribution of Leonardo Lacerda, Alexander Belokurov, Liza Higgins-Zogib and Devendra Rana – Worldwide Fund for Nature; Jeff Parrish, Jamie Ervin and Ian Dutton – The Nature Conservancy; Sue Wells; Robyn James and Bill (R.W.) Carter – the University of Queensland; Caroline Stem, Richard Margoluis and Nick Salafsky – Foundations of Success; Grazia Borrini-Feyerabend; Natajaran Ishwaran – UNESCO; Josep M. Mallarach – Institució Catalana d'Historia Natural, Catalonia; Kathy MacKinnon – the World Bank; Vinod Mathur and B.C. Choudhury – Wildlife Institute of India; and Steven Woodley – Parks Canada.

Work on management effectiveness evaluation has also benefited greatly from support within protected area agencies, especially where this support comes from Chief and Senior Executives. We thank the many agency staff who have given time and support to this work, but in particular wish to thank Peter Cochrane – Parks Australia; Tony Fleming – NSW National Parks and Wildlife Service; Moses Mapesa and (formerly Robbie Robinson) – Uganda Wildlife Authority; Rauno Vaisanen – Metsähallitus, Forest and Park Service, Finland; and Geoff Vincent – Parks Victoria, Australia.

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Definitions

The **evaluation** of **management effectiveness** is generally achieved by the **assessment** of series of criteria (represented by carefully selected **indicators**) against agreed objectives or **standards**. The following definitions refer specifically to the context of protected area management effectiveness.

Management effectiveness evaluation: is defined as the assessment of how well the protected area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives. The term management effectiveness reflects three main themes:

- design issues relating to both individual sites and protected area systems;
- adequacy and appropriateness of management systems and processes; and
- delivery of protected area objectives including conservation of values.

Assessment: the measurement or estimation of an aspect of management.

Evaluation: the judgement of the status/condition or performance of some aspect of management against predetermined criteria (usually a set of standards or objectives); in this case including the objectives for which the protected areas were established.

IUCN-WCPA Management Effectiveness Evaluation Framework: a system for designing protected area management effectiveness evaluations based around six elements: context, planning, inputs, processes, outputs and outcomes. It is not a methodology, but is a guide to developing assessment systems.

Element: a major component of the evaluation Framework defined by the aspect of management that is being assessed. The elements relate to the steps in a strategic planning and management cycle. Performance within each element is assessed by reference to a number of defined criteria.

System: a specific process for doing monitoring and evaluation, generally accompanied by steps or guidance (equivalent to an evaluation approach as defined by Stem *et al.*).

Criterion: a major category of conditions or processes – quantitative or qualitative – which together helps define the thing being measured. A criterion is characterized by a set of related indicators.

Indicators: quantitative or qualitative variables that provide useful information about a criterion and can be used to help compile a picture of the status and trends in protected area effectiveness.

Tool: an instrument that aids in undertaking of evaluation – e.g. a questionnaire or scorecard (Stem *et al.* 2005).

Monitoring: collecting information on indicators repeatedly over time to discover trends in the status of the protected area and the activities and processes of management.

A lot of the terms used above are defined fairly vaguely in English; however in this document, and for this specific purpose of management effectiveness, we have tried to provide more precise definitions.

Acronyms

CBD	Convention on Biological Diversity
EoH	Enhancing our Heritage project
GEF	Global Environment Facility
IUCN	The World Conservation Union
NGO	Non-governmentalOrganization
RAPPAM	Rapid Assessment and Prioritization of Protected Area Management
TILCEPA	Theme on Indigenous and Local Communities, Equity and Protected Areas (of IUCN)
TNC	The Nature Conservancy
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCPA	World Commission on Protected Areas (of IUCN)
WDPA	World Database on Protected Areas
WWF	Worldwide Fund for Nature

1. Introduction to management effectiveness evaluation

The success of protected areas as a tool for conservation is based around the assumption that they are managed to protect the values that they contain. To be effective, management should be tailored to the particular demands of the site, given that each protected area has a variety of biological and social characteristics, pressures and uses. Achieving effective management is not an easy task – it requires adopting appropriate management objectives and governance systems, adequate and appropriate resourcing and the timely implementation of appropriate management strategies and processes. It is unlikely to be achieved fully without an approach to management that is inquiring and reflective – that seeks to understand how effective the current management regime is and how it could be improved. Information on management effectiveness is thus a cornerstone of good management.

Management effectiveness evaluation is defined as the assessment of how well the protected area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives. The term management effectiveness reflects three main themes:

- design issues relating to both individual sites and protected area systems;
- adequacy and appropriateness of management systems and processes; and
- delivery of protected area objectives including conservation of values.

These issues are discussed in detail in Chapter 3.

The diversity of protected areas means that the assessment of effectiveness needs to be tailored to the management systems in place: one system of assessment is unlikely to fit all circumstances. However, management effectiveness evaluation does have a range of common elements and processes that can form the basis of a purpose-built assessment system. It is these common elements that are described in the Framework presented in this document.

This chapter sets the scene for the rest of this volume. It discusses why protected area management effectiveness evaluation has become an important tool for measuring conservation success and includes a brief history of management effectiveness systems, illustrating the diversity of systems that have been developed.

1.1 Why is management effectiveness evaluation important?

Protected areas now cover over 10 per cent of the world's land surface and are increasing rapidly in marine areas as well. This represents a very major commitment to the protection of biodiversity, along with associated environmental services and cultural values, by local and national governments, local communities and private landowners. The people investing in protected areas, whether through voluntary donations to NGOs or through government taxes, have a right to know that these areas are being well managed. As the total number of protected areas continues to increase, so too do calls for proper accountability, good business practices and transparency in reporting.

There are many practical reasons for knowing how effectively protected areas are managed. Unfortunately, the commitment to setting aside land and water has yet to be always matched with similar commitments of resources for management. In other cases, even though management systems are in place, the pressures on protected areas are so great that their values continue to degrade. For instance a detailed study of US national parks found that virtually all of them had lost species since their inception,[2] and the situation is far more serious in many countries in the tropics. Protected areas can face a range of significant threats both from actions in the immediate vicinity and from pressures originating further away. Responding to such pressures is an urgent but often very tricky challenge if the values of protected areas are to be maintained.

[2] Newmark (1985).

Other factors are encouraging governments in particular to take the issue of management effectiveness seriously. Increasingly, nations are agreeing to report on progress in conservation to their peers in institutions such as the Convention on Biological Diversity and the World Heritage Convention, and are in consequence seeking information on status and trends in protected area management. The combination of internal and external demands, and the practical challenges of managing such large and diverse areas, has led to a rapid increase in interest in monitoring and assessment.

1.2 Developments in evaluating management effectiveness

Individual studies on the effectiveness of protected areas and protected area systems have been undertaken for at least twenty years, often by non-governmental organizations or research bodies but also by park agencies themselves. Early examples include assessments of protected areas in much of Asia for IUCN[3] and a global assessment undertaken for the IV[th] World Parks Congress.[4] However until recently such studies were generally individual and sporadic, based around experience or site visits and without any wider global structure.

Recognition of the critical role that management needs to play to secure biodiversity within protected area networks created a flurry of interest in the assessment of management effectiveness using more rigorous approaches. Much of the initial work took place in Latin America, for example in Brazil[5] and Costa Rica,[6] where systems focused particularly on management processes and technical capacity. Other initiatives looked almost exclusively at biological conditions, for instance in the UK, the Countryside Council for Wales developed an approach to monitoring Sites of Special Scientific Interest[7] and in Australia, the Great Barrier Reef Marine Park Authority and the Australian Institute of Marine Science established a programme of long-term monitoring for the Great Barrier Reef.[8]

However, there were few efforts to look at *all* aspects of protected areas, from management approaches to the final outcomes in terms of biodiversity conservation, and little attempt to involve stakeholders in assessments or to consider the social impacts of parks and reserves.

This situation changed when the World Commission on Protected Areas established a task force to look at management effectiveness following a resolution calling for greater attention to the issue at the IV[th] World Parks Congress in Venezuela. The task force decided that rather than developing one assessment system in what was clearly already a dynamic field, the role of IUCN should instead be to develop an overall framework for assessment within which a number of different approaches might fit. After a considerable amount of research and several workshops (sponsored amongst others by WWF and the World Bank) this led to the six-part assessment system initially published in the first edition of this book in 2000.

In the six years since, technical expertise and experience has continued to increase rapidly and a range of assessment systems have emerged, mostly drawing on the WCPA Framework. These fall into a number of main groupings:

- Detailed site-level assessments aimed at building monitoring systems and long-term understanding of management in an individual protected area, such as the Enhancing our Heritage system being developed for World Heritage sites (see Case Study IV, and also Case Study I for an adaptation of the system for marine protected areas);

- Much more superficial but quicker site-level systems built around questionnaires or scoring, aimed at being applied in multiple sites, such as the World Bank/WWF tracking tool (described in Case Study VI) and a related version developed for marine protected areas;[9] and

- Approaches to assessment developed specifically for use on a system-wide scale such as the WWF RAPPAM system and the systems developed in Finland, Catalonia (Spain) and New South Wales (Australia) (see case studies II, V, III and VII respectively).

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3 MacKinnon and MacKinnon (1986).

4 McNeely *et al.* (1994).

5 Ferreira *et al.* (1999).

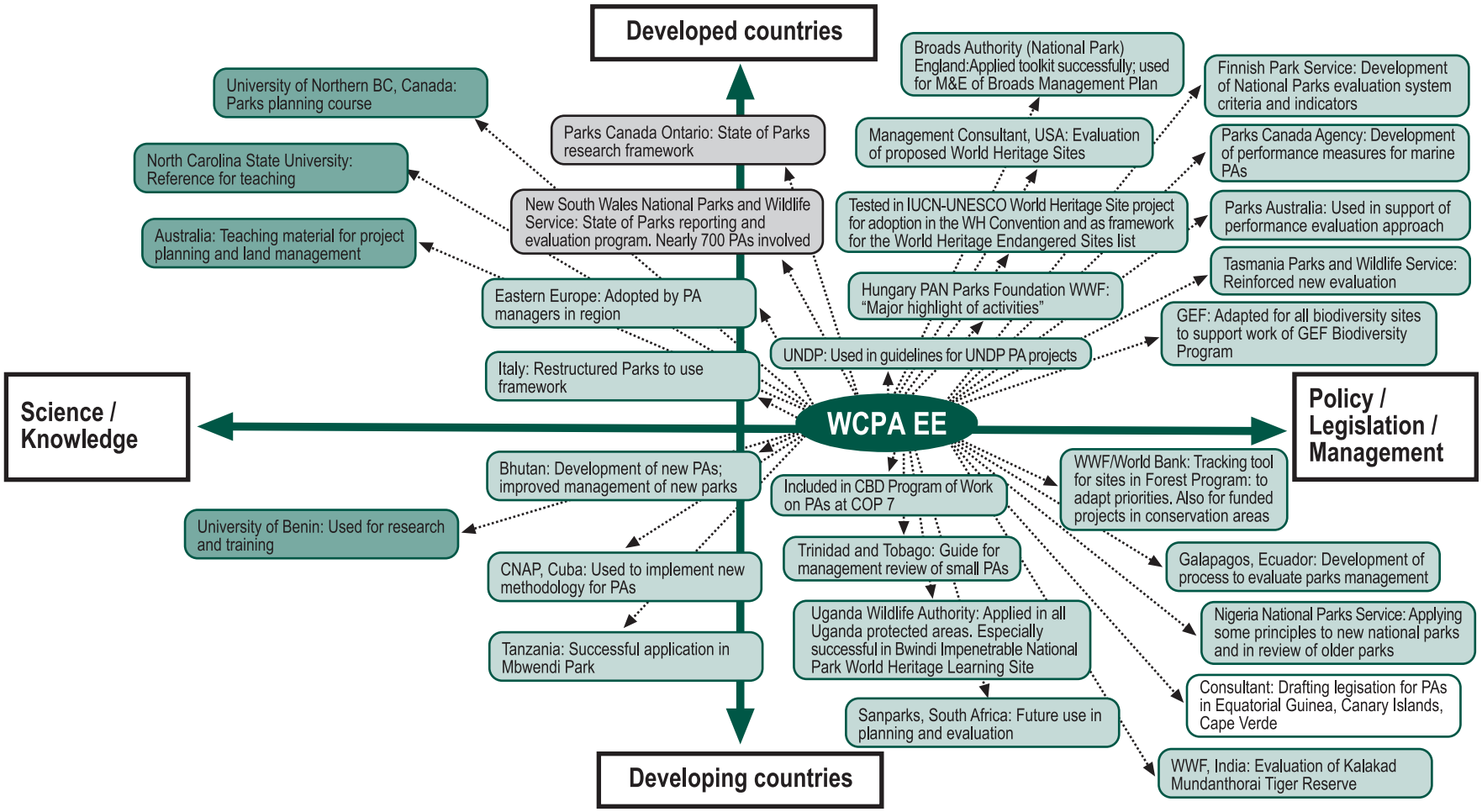
6 Cifuentes *et al.* (2000).

7 Alexander and Rowell (1999).

8 Sweatman (1997).

9 Staub and Hatziolos (2004).

Figure 1. Use of the WCPA product, *Evaluating Effectiveness,* across the world



Based on the response of 75 users (from White and Ofir, 2004).

Connection has also been made with parallel efforts in monitoring and assessment in the broader conservation field, in particular through the Conservation Measures Partnership,[10] where approaches to protected area management effectiveness and conservation project assessment show considerable overlap.

Assessments have now taken place, at one level or another, in several thousand protected areas around the world, although most of these have still been rapid assessments within a system-wide study. The large majority of protected areas have yet to undergo any formal or informal assessment of their effectiveness, but this situation appears to be changing quite rapidly.

Protected area agencies and other users have on the whole resisted adopting a single approach and most have looked at the range of tools available and produced something tailored for the needs of an individual country. For example several African countries have produced slightly different assessment systems.[11] Systems have also been created for specific biomes, for instance for marine protected areas[12] and forest protected areas.[13] The importance of flexibility in use of assessment systems and tools was stressed at a special meeting of the Convention on Biological Diversity (CBD) focusing on protected areas, held in Montecatini, Italy in June 2005. We support this plurality and encourage users to develop systems that fit individual needs.

In 2004, an independent study found widespread take-up of the protected area effectiveness Framework around the world. Figure 1 maps application of the Framework according to where and how it has been applied. The report concludes that: "As expected it has been used mainly by protected area managers and agencies for the development of assessment systems and guidelines and for the evaluation of protected area management, in developed countries such as the UK, USA, Finland, Canada, Italy and Hungary, and in the developing countries as far afield as India, Bhutan, Tanzania, Nigeria, Uganda, Benin, South Africa, Ecuador, Cuba and Trinidad and Tobago".[14]

Zebra, Ngorongoro © *Sue Stolton*

Now that tools have been developed, the next stage is to encourage their use not just as an occasional (and frequently donor-driven) exercise but as an integral part of management. Encouragement for the institutionalization of assessment gained an important boost when the CBD identified management effectiveness as a key part of its recommended Programme of Work on Protected Areas (see Appendix 1). The Programme specifically requires members to: "implement management effectiveness evaluations of at least 30 percent of each Party's protected areas by 2010 and of national protected area systems and, as appropriate, ecological networks". Responding to this important new challenge is a major factor behind the decision to publish a new edition of this book.

[10] Information about the Conservation Measures Partnership is available at www.ConservationMeasures.org

[11] Dudley *et al.* (2005).

[12] Pomeroy *et al.* (2004).

[13] Stolton *et al.* (2003).

[14] Whyte and Zofir (2004).

2. Purposes and applications of management effectiveness evaluation

This chapter examines the reasons why people want to evaluate management effectiveness and how the information derived from such assessments can be used by different groups such as park managers, senior agency staff, stakeholders and others with an interest in protected areas. Following this outline of evaluation purposes and audiences, the implications of this diversity for the design of evaluation systems are discussed.

2.1 Purposes of evaluation

There are many reasons why people want to assess management effectiveness. These different purposes may require different assessment systems and varying degrees of detail. Funding bodies, policy makers and conservation lobbyists may use the results to highlight problems and to set priorities; or to promote better management policies and practices by management agencies. Managers may wish to use evaluation results to improve their performance or to report on achievements to senior managers, the government or external stakeholders. Local communities and other stakeholders, including civil society, need to establish how far their interests are being taken into account. Increased emphasis on evaluation is in part due to changes in society, especially the increased demand for accountability, transparency and demonstrated 'value for money'.

Broadly speaking, management effectiveness evaluation can:

- enable and support an adaptive approach to management;
- assist in effective resource allocation;
- promote accountability and transparency; and
- help involve the community, build constituency and promote protected area values.

In addition to these substantive benefits, the process of assessing management effectiveness can also deliver a number of procedural benefits. Improved communication and cooperation between managers and other stakeholders is a common outcome of evaluation processes. Managers also have an opportunity to "step back" from the day-to-day concerns of their jobs and consider the issues and challenges that they face in a new light. Many managers have commented that the major benefits to them have come during the assessment process rather than from any formal report written at the end of the exercise.

In practice, evaluation results are usually used in more than one way. Information used by managers to improve their own performance (adaptive management) can also be drawn on for reporting (accountability) or can be used to improve the way funds and other resources are allocated either within a single reserve or across a protected area system (resource allocation).

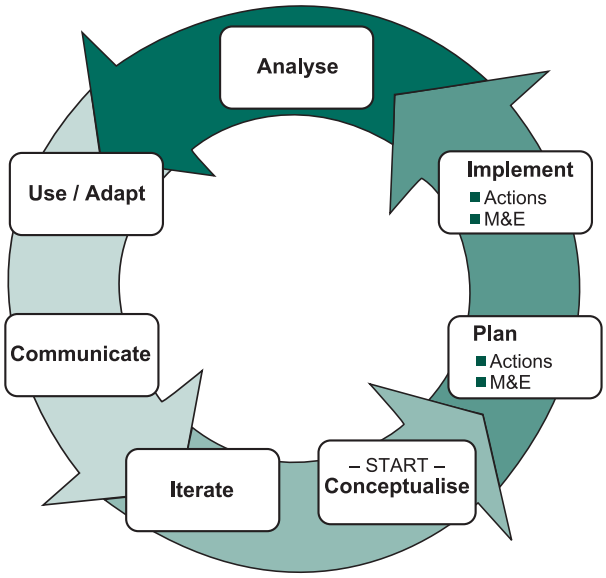
Whatever purposes it may serve, evaluation should be seen primarily as a tool to assist managers in their work, not as a system for watching and punishing managers for inadequate performance. Evaluation must be used positively to support managers and be seen as a normal part of the process of management. Nonetheless, funding agencies, NGOs and others have a legitimate right to know whether or not a protected area is achieving its stated objectives, and it should be recognised that evaluation findings will inevitably also be used for advocacy. Recent experiences around the world have demonstrated that involving external stakeholders in the assessment process and transparent sharing of the results of assessment can help to build cooperation and support for protected areas.

Adaptive management

First and foremost, evaluation should be seen as a normal part of the process of management. Adaptive management is based on a circular – rather than a linear – management process, which allows information concerning the past to feed back into and improve the way management is conducted in future[15] (Figure 2). Evaluation helps management to adapt and improve through a learning process.

[15] Holling (1978); Salafsky *et al.* (2001).

Figure 2. The adaptive management project cycle



Source: Conservation Measures Partnership (2004).

Evaluation consists of reviewing the results of actions taken and assessing whether these actions have produced the desired results. It is something that all good managers already do where the link between actions and consequences can be simply observed; for example, in assessing whether some management action has been effective in reducing the level of a localized environmental impact.

But the link between action and outcome is often not so obvious. Faced with the daily demands of their job, many protected area managers do not systematically monitor and review the results of their efforts. In the absence of such reviews, resources can be wasted on programmes that are not achieving their objectives.

As well as providing the information needed to put adaptive management in practice in a systematic way, evaluation can improve effectiveness in a number of related procedural and substantive ways – for example by:

- encouraging a learning organization and culture;
- informing management planning; and
- providing positive reinforcement when protected area management is effective.[16]

Each of these uses of evaluation information is discussed below.

The process of assessment can be an important catalyst in developing a learning culture within an organization, enabling managers to pause and reflect on what they are doing and how effective they are being (see box below). Where common problems are being addressed in different ways in a number of protected areas, assessment data can be used to compare results and allow managers to select the best approach.

Monitoring, evaluation and planning should be very closely linked processes, with monitoring and assessment information providing the basis for assessing whether goals, objectives and strategies specified in the plans are being achieved. Regular assessments of implementation of management plans can be an effective tool to ensure that management plans do not become "shelf" documents, ignored in the day-to-day management process. Availability of assessment information can be particularly important at times of formal review of plans.

Information gained in assessments of management effectiveness can be very useful for planning processes at different levels, including:

- system-wide planning and policy analysis;
- protected area management planning;
- operational planning;
- project planning.

[16] Leverington and Hockings (2004).

Adaptive Management: policy as hypothesis, management by experiment[17]

Learning is not a haphazard by-product of mistakes in policy or management. In contrast to the usual system of rewards and advancement, which tends to discourage admission of error, by using adaptive management managers and decision-makers view unanticipated outcomes as opportunities to learn, and accept learning as an integrated and valued part of the management process. Learning while doing accelerates progress towards improved policies and management.

Learning is facilitated by feedback obtained from monitoring and evaluation… Without adequate investment in feedback, learning about the consequences of policies or management actions is slow; change is cumbersome and can come too late. The result is a situation where staff simply 'muddle through'.

There can be a tendency to only focus on the negative results of evaluation and to consider that adaptive management only applies to changing management practices that are failing to achieve desired results. However it can be equally important to document when management is working effectively. For example, the New South Wales (Australia) *State of the Parks* assessment was able to demonstrate that management planning was leading to improved performance in numerous areas of park management (see Case Study VII). This supporting information can be used to justify continuation of programmes, or argue for extension of programmes more widely across a system. External and independent assessments can be particularly successful in this regard.

Assist effective resource allocation

Virtually all protected area systems around the world suffer from a shortage of resources needed to manage sites to the standards that are desirable. Globally, the estimated funding required for an effectively managed, comprehensive, adequate and representative park system is US$45 billion per year, while the actual sum provided by governments and other funding agencies is only US$6.5 billion.[18]

Managers can use the results of evaluations of management effectiveness to develop proposals for additional resources. Such proposals are more likely to win support when they can be justified on the basis of evaluation results. Assessment information can also be used to help allocate available funding within and across reserves in a protected area system. Assessments can help inform these resource allocation decisions by providing information on:

- most important values within and across sites;
- condition of values and threats to those values;
- areas of greatest need in terms of any shortfall between desired and actual outcomes; and
- relative efficiency in terms of outcomes achieved for resources invested in management.

Promote accountability and transparency

Accountability for performance is being increasingly demanded across all sectors of society and conservation management is no exception. Traditionally, concerns for accountability focused on issues of financial and managerial probity but this has now expanded to include concerns for management effectiveness. Viewed in this light, accountability is not so much about "checking up" on managers to see where they are failing, as about developing a professional approach to management. Governments and other funding or regulatory bodies wish to know whether results being achieved are commensurate with the effort and resources being expended and in line with policy and management objectives.

Protected area managers are likely to experience greater community support and trust when they provide information about what they are doing and what they are achieving – when management is seen to be open and accountable. Wide participation of stakeholders in the assessment process can be important in building credibility. It can also improve stakeholders' understanding of the challenges and constraints that face managers, often from factors that lie outside their control.

[17] Parks Canada (2000), p.3-2.

[18] Balmford *et al.* (2002).

National and international reporting on the management of protected areas is becoming increasingly common.[19] The number of national and sub-national examples of State of the Parks reporting is growing in response to increased demands for accountability and transparency. International requirements for reporting on management of specific sites already exist under the World Heritage and RAMSAR Conventions as well as an obligation to report more generally on protected area management as part of national reporting under the Convention on Biological Diversity (CBD). Reporting requirements also exist under regional agreements such as the European Natura 2000 programme.[20] These reporting requirements have not focused only or specifically on effectiveness of management, but some relevant data relating to management effectiveness have been gathered.

Increasingly, donors are seeking to institute systems for assessing management effectiveness in sites where they are providing funding or project support. The World Bank-WWF Alliance for Forest Conservation (the *Alliance*) developed a rapid site-level assessment system for use in all protected areas where the Alliance was operating (see Case Study VI). Development and use of this assessment tool was motivated by a need for the Alliance to report on achievement of their initial target of improving management of 50 million hectares of forest protected areas. It was also hoped to provide site managers with information that they could use for improving effectiveness. This same assessment system has been adopted by the Global Environment Facility (GEF) as a basis for assessing progress in improving management effectiveness in all GEF-supported protected areas and has been widely used in other situations such as Tanzanian forest reserves and community conserved areas in Zambia. Other donors such as The Nature Conservancy (TNC) and WWF International are encouraging and supporting sites to implement management effectiveness evaluations as a part of donor-supported programmes.

Moves to acknowledge private, community and Indigenous reserves as an integral part of national systems of protected areas are also creating a need for reliable and transparent systems for evaluation of management effectiveness. Acceptance of these non-governmental protected areas as legitimate and useful parts of a national system is likely to be enhanced if assessments can demonstrate that they are being effectively managed and are making a contribution to biodiversity conservation goals.

Building support

A fourth group of evaluation purposes is concerned with increasing public awareness and support, which all protected area systems need to survive and improve. Evaluation can alert the community to threats and can demonstrate the need for the community to support protected areas – sometimes active public lobbying or even serious public concern is needed to convince governments to provide better resourcing.

Management effectiveness evaluation can also be a basis for cooperation and trust between partners. For example, in the Enhancing our Heritage project (Case Study IV) in Canaima National Park, Venezuela and in Sangay National Park, Ecuador the assessment process brought stakeholders together and led to the development of joint programmes of work based around responding to the evaluation findings.

2.2 Who is interested in evaluation information?

Many groups of people are interested in information on management effectiveness of protected areas. Managers, local communities and others directly involved in management of a protected area site or system will be most interested in information that can be used to support adaptive management. Senior administrators, donors and policy makers are likely to be seeking information that can be used to improve resource allocation as well as being interested in issues of accountability. While the information relating to accountability is primarily to inform external audiences, managers will also be interested in this aspect of evaluations. Managers are likely to be especially concerned to ensure that openness and transparency in revealing information about management performance is not used to undermine political and public support but rather to build a constituency to lobby for enhanced management.

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[19] Canada, Finland, New South Wales (Australia) and Victoria (Australia) have all instituted regular State of the Parks reporting systems that assess management effectiveness across all or a majority of their protected area systems and Germany is introducing a similar system. All Governments in Australia have agreed to establish systems for assessing and reporting on management effectiveness of their protected areas (Natural Resource Management Ministerial Council (2004)). The National Parks and Conservation Association in the United States also operates a State of the Parks system that is progressively reviewing management of individual reserves within the National Parks system.

[20] European Commission (2005).

2.3 A Framework for assessing management effectiveness

Evaluation needs, aims and circumstances are diverse. Aspects of this diversity include:

- *Differing purposes and audiences for evaluation*: As outlined in Sections 2.1 and 2.2 above, there are many reasons for evaluating management effectiveness and a range of people are interested in the results. Though a single assessment methodology can collect information to meet more than one purpose and audience, the nature and depth of information required might differ. For example, information needed to support system-wide priority setting and resource allocation by policy makers may not provide the depth of analysis needed by managers for site-level adaptive management.

- *Differing scope and frequency of evaluation*: Evaluations of management effectiveness can vary in scope and frequency from one-off rapid assessments of a whole system of protected areas to regular in-depth monitoring and assessment of individual protected areas.

- *Differing capacities*: Capacities of agencies, managers and other participants involved in the assessment process vary. There is no point in developing an elaborate and intensive monitoring and assessment programme if the capacity of people to implement the programme is limited. Capacity is affected by the availability of staff with appropriate skills, the extent of pre-existing information from monitoring programmes or previous research and the available staff time and financial resources. In the long run, internal evaluations only have a chance of succeeding if they are supported by the staff charged with their implementation.

- *Differing participants*: The range of purposes, scope and capacities for evaluation will mean that different people will be involved in the assessment process. Ideally, managers at various organizational levels and representatives of interested stakeholders (e.g. local communities and Indigenous people, neighbours, NGOs, tourist operators, researchers) should all participate in the assessment process. However in some circumstances, involvement of a broad group of stakeholders is not possible – for example, involvement of local stakeholders will not always be practical if a large, system-wide evaluation is being undertaken.

One consequence of this diversity is that a single system for evaluating management effectiveness will not be able to address all needs and circumstances. It is therefore unlikely that a single common system for assessing effectiveness would be adopted around the world; by the mid 1990s (see Chapter 1) there was already a growing number of systems being developed. Too much diversity, however, limits the capacity to compare and learn across assessment systems and makes it difficult to draw general conclusions about the effectiveness of protected area management at national, regional or global levels. For this reason, IUCN-WCPA proposed a *Framework* for assessing management effectiveness. The Framework could be used to develop specific systems for assessment to match particular purposes, capacities and other needs while still retaining a common underlying logic and approach to evaluation, similar criteria and, in some cases, common assessment methods and tools. Use of a common Framework can also lend credibility and promote greater acceptance of the assessment system because people can see that the evaluation approach and assessment criteria accord with an international standard.

3. A Framework for evaluating management effectiveness

As discussed in Chapter 2, the Framework for management effectiveness evaluation developed by IUCN-WCPA provides a consistent basis for designing assessment systems without attempting to impose one standardized methodology.[21] It gives guidance about what to assess and provides broad criteria for assessment, while enabling different methodologies to be incorporated so assessment can be undertaken at different scales and depths.

This chapter will describe:

- the six elements that IUCN-WCPA considers important to measure in management effectiveness evaluations, based around a management cycle; and
- why each of these was chosen, what they mean, and some ideas about how they can be measured and related to one another.

3.1 The management cycle

The Framework is based on the principle that good protected area management should follow a cyclical process with six stages or elements, as shown in Figure 3. To understand the Evaluation Framework, we first need to outline this management cycle.

Good management needs to be rooted in a thorough understanding of the individual conditions related to a protected area, be carefully planned and implemented and include regular monitoring, leading to changes in management as required. The management cycle illustrated (Figure 3) identifies six important elements in this process that should, ideally, all be assessed if effectiveness of management is to be fully understood. Management:

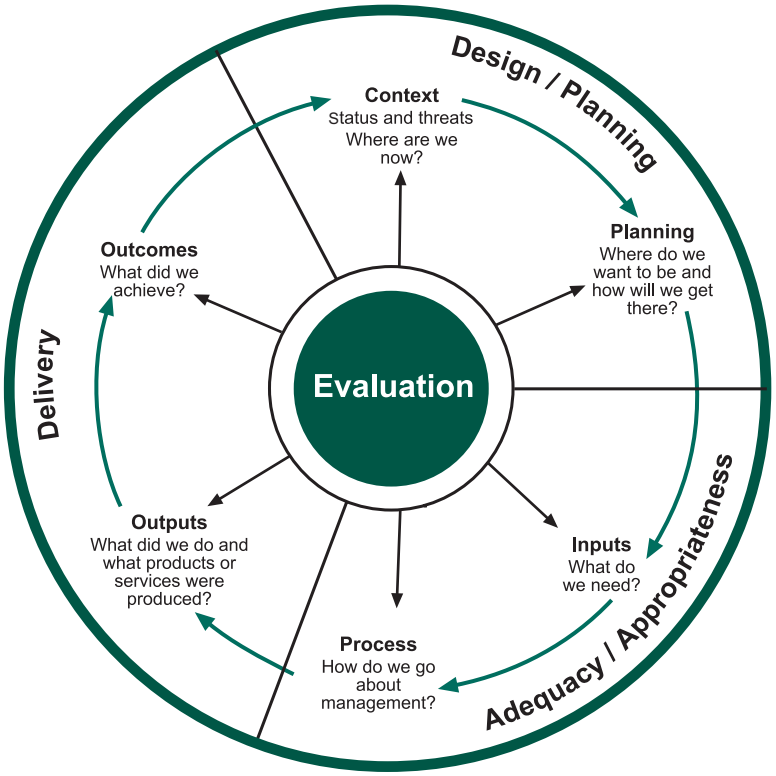
- begins with understanding the **context** of the protected area, including its values, the threats that it faces and opportunities available, its stakeholders, and the management and political environment;
- progresses through **planning**: establishing vision, goals, objectives and strategies to conserve values and reduce threats;
- allocates **inputs (**resources) of staff, money and equipment to work towards the objectives;
- implements management actions according to accepted **processes**; and
- eventually produces **outputs** (goods and services, which should usually be outlined in management plans and work plans)
- that result in impacts or **outcomes,** hopefully achieving defined goals and objectives.

It is important to understand the difference between *outputs* and *outcomes*. Outputs, as used here, refer to the achievement of identified activities or work programme targets (e.g. number of patrols run, paths built or restoration activities achieved). Outcomes reflect whether the long-term objectives are met (e.g. are plant and animal populations stable, are ecological systems functioning properly, are cultural values being maintained?). The distinction is important because it is possible to have a protected area that meets all its output targets but continues to degrade (suggesting the management strategies or activities need to be changed), or to have a badly managed protected area that nonetheless maintains its broader values.

All six elements shown in Figure 3 are important in developing an understanding of how effectively protected areas are being managed. They reflect three large "themes" of management: **design** (context and planning), **appropriateness/adequacy** (inputs and processes) and **delivery** (outputs and outcomes). This approach is summarised in Table 1.

[21] Hockings *et al.* (2000).

Figure 3. The Framework for assessing management effectiveness of protected areas



Evaluation that assesses each of the elements of Figure 3 (and the links between them) should provide a relatively comprehensive picture of management effectiveness. This kind of evaluation is regarded as having greater 'explanatory power' because it permits examination of the possible links between performance in different parts of the management cycle (for example, what is the influence of budgets or staff numbers on the processes or on outputs of management).[22]

Some evaluation studies may choose to assess only certain elements – in which case we need to interpret results with care, knowing that information is incomplete. For example, in some national or international overviews, or in cases where funds and time are very limited, an assessment might concentrate primarily on the elements that are easier to evaluate (inputs and processes). In other cases, only a representative sample of a large protected area system will be evaluated, using a complete set of indicators, to optimize efforts and resources.

Assessments usually consist of a combination of descriptive information and specific assessment methodologies. The remainder of this chapter discusses the assessment of each of the management cycle elements in turn. It explains why each element is important, looks in more detail at the concepts involved and examines the foundation of the assessment system. It does *not* provide a detailed step-by-step methodology for how each of these elements might be measured. Sources and links to field methodologies are given in the resources section at the end and can be drawn from the case studies.

3.2 Assessing context

Context: Status and threats
Where are we now?

What are the values and significance of the area?
What are the threats and opportunities?
What social, economic and political factors influence management?
Who is involved?

Why context is important?

This element provides the relevant background information needed to plan and implement management and to shape and focus an evaluation on the most important aspects of management.

[22] Leverington and Hockings (2004).

Table 1. IUCN-WCPA Framework for assessing management effectiveness of protected areas and protected area systems

	Design		Appropriateness/Adequacy		Delivery	
Elements of management cycle	**Context**	**Planning**	**Inputs**	**Process**	**Outputs**	**Outcomes**
Focus of evaluation	Assessment of importance, threats and policy environment	Assessment of protected area design and planning	Assessment of resources needed to carry out management	Assessment of the way in which management is conducted	Assessment of the implementation of management programmes and actions; delivery of products and services	Assessment of the outcomes and the extent to which they achieved objectives
Criteria that are assessed	Significance/ values Threats Vulnerability Stakeholders National context	Protected area legislation and policy Protected area system design Protected area design Management planning	Resources available to the agency Resources available to the protected area	Suitability of management processes and the extent to which established or accepted processes are being implemented	Results of management actions Services and products	Impacts: effects of management in relation to objectives

Understanding the **context** is an essential first step in both the management and the evaluation cycles. Protected areas are established to conserve special values, so understanding these values and their significance at global, national or local scale is vital for both management planning and evaluation. At the same time, we need to know how secure these values are, what threats they face and about external influences, including stakeholders with a particular emphasis on local communities. Some context elements are likely to be fairly constant, but others will change over time – for instance some threats may recede while new pressures emerge and this will have major implications for management.

Foundation of context assessment

Major aspects to be considered under the heading of context include:

- ***values and significance*** of the protected area, from both biological and socio-cultural perspectives;
- ***threats*** to the protected area such as invasive species, inappropriate resource use and extraction, and other external as well as internal threats;
- ***external influences*** ranging from national factors (economic position, policy environment, political stability) to local issues (neighbour and stakeholder relationships);
- ***stakeholders and local communities,*** including an understanding of who is involved in and who could be affected by management of the protected area.

Each of these is discussed in more detail below. Much of the information needed will often be available in a management plan, research papers, project proposals or similar documents, but for evaluation purposes the data might need to be updated, expanded or interpreted.

Values

'Value' is a slippery, subjective concept, but one that lies at the heart of the reason for having protected areas at all and hence is of critical importance to their management. Given that protected areas are usually declared to protect specific values – biological, cultural and socio-economic – then understanding what these values are is critical for management. Management planning will usually identify objectives designed to protect values, and so evaluation of management outcomes will be concerned with how well these values are conserved.

Ideally, an assessment of management effectiveness will review a site's or system's management objectives, which represent the range of values for which it is managed. However, where such values have never been made explicit, the first stage of assessment may be to identify key values, or at least to check that all relevant values have been recognised. For instance a protected area that is managed well for megafauna may not be addressing other values, such as the existence of crop wild relatives or sacred sites within its boundaries. The specification of values and targets involves an element of judgement. It is difficult to make sure that everything is

covered: values and associated targets may need to be reviewed and revised over time. A checklist of different types of values can help to make sure that broad groups of values are not forgotten when assessing context of a particular protected area (see Table 2).

Many protected areas conserve thousands of values, and it is often necessary for managers and stakeholders to select those which should be given priority in planning, management and evaluation. For example, it is impossible to individually plan for management to ensure survival of every animal species: managers usually consider broad habitats as 'surrogates' and also focus on survival of a smaller number of endangered, endemic or 'icon' species. In some management systems, such as the *Conservation Action Planning* of The Nature Conservancy (TNC), the values are reviewed and a subset of the most critical values for conservation identified; these are called 'conservation targets'[23] or 'focal management targets'[24] and used as a major focus for management and evaluation. TNC recommends the selection of 'a limited suite of species, communities and ecological systems … such that their conservation collectively will ensure the conservation of all native species within a functional landscape'.[25] More generally, assessment cannot measure everything and so representative indicators of various values need to be identified.

Although most protected areas were established for their wildlife or scenic values, they are also increasingly recognised for their role in providing social, economic and environmental benefits to the human community.[26] Many are the homelands of or significant areas for Indigenous people and other local communities. For these people, the fact that a protected area maintains natural or semi-natural ecosystems can help to maintain livelihoods – such aims are increasingly included in management plans. The significance of a protected area for populations living in or reliant upon it can be documented and included in an overall assessment of significance.

Table 2. Some types of values to be considered in assessing protected area context

Ecological	Socio-economic and cultural
Ecosystem services/ functions • Catchment management and water supply • Soil conservation • Climate and disaster mitigation • Clean air/pollution mitigation **Biodiversity** • Ecosystem level • Species level (rare and threatened, indicator species, popular species, economically or socially important species etc) • Local population level • Genetic level **Landscape and geological** • Evidence of formation and ongoing geological processes • Fossils • Special geological formations and landscape features • Water bodies and wetlands	**Cultural** • Spiritual – e.g. sacred sites • Indigenous heritage • Historical • Aesthetic/artistic **Social** • Recreation • Green space • Scenic **Economic** • Tourism • Adjacent land values • Sustainable resource harvesting **Research and education** • Benchmark sites • Research • Formal education • Interpretation

[23] Parrish *et al.* (2003).

[24] Hockings *et al.* (2005).

[25] Parrish *et al.* (2003).

[26] Borrini-Feyerabend *et al.* (2004).

Measuring the contribution of a protected area to poverty alleviation is now a prime aim of assessment in some countries and this potential is being hotly debated.[27] As a result, considerable work has been carried out on the economics of protected areas[28] to establish the role that they play in regional or national economies. Sophisticated methodologies are being developed to assess the economic benefit of protected areas, including not only payments from visitors but also services such as catchment protection and scenic amenity provided by the protected area.

Significance – local, regional, national or international?

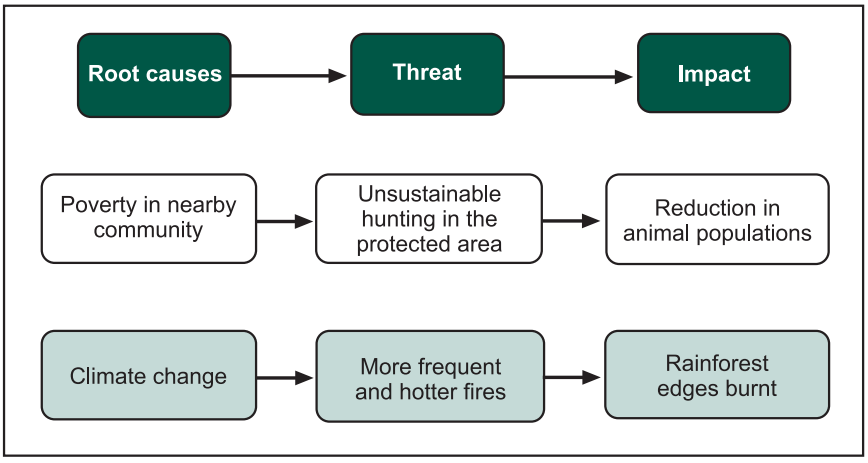
Sites can be recognised as significant at global, national or local levels for ecological, cultural, geological, landscape and aesthetic beauty. The designation of an area under international conventions or other legal instruments is a clear indication of global significance. The principal global designations are World Heritage sites (natural, mixed natural/cultural sites, and cultural landscapes), Biosphere Reserves designated under the UNESCO Man and the Biosphere Programme and Ramsar wetlands, but there are other international designations of regional or global relevance (e.g. ASEAN Heritage sites, Natura 2000 sites in Europe, sites falling within BirdLife International's globally and regionally Important Bird Areas,[29] Conservation International Hotspots,[30] Centres of Plant Diversity,[31] Key Biodiversity Areas[32] or WWF's Global 200 eco-regions.)[33]

Threats to protected areas

Few if any protected areas are immune from one type of threat or another – and many are vulnerable to a range of different pressures. Threats to protected areas include global threats related to climate change, regional-scale issues such as habitat fragmentation and localized problems such as poaching, excessive visitor impacts and waste disposal. Threats that arise from outside a protected area, such as air pollution or climate change, may be beyond the control of individual managers, but should be included within the assessment because they affect the attainment of management objectives. If such threats are identified, they have more chance of being addressed through political change and advocacy: such broad-scale threats are also particularly important in the context of global-scale reporting, such as to the CBD.

Table 3 provides a checklist of some of the types of threats and barriers to effective management that have been identified in studies of protected area management. Most assessment methodologies stress the importance of identifying both existing and potential threats, as effective management seeks to be pro-active in preventing degradation before it becomes severe. Recognising the sources of threats – that is, the underlying or root causes – and the impacts (or stresses) caused by the threats can both be important for a more complete understanding of the context. Two simple examples are shown in Figure 4. This type of analysis can be particularly important for the later interpretation of evaluation results.

Figure 4. Understanding causes and impacts of threats



[27] Scherl *et al.* (2003).

[28] e.g. Task Force on Economic Benefits of Protected Areas of the World Commission on Protected Areas (WCPA) of IUCN in collaboration with the Economics Service Unit of IUCN (1998).

[29] Grimmett and Jones (1989); Heath and Evans (2000).

[30] Mittermeier *et al.* (2004).

[31] Davis *et al.* (1995) (3 volumes).

[32] Eken *et al.* (2004).

[33] Olson and Dinerstein (1997).

Table 3. Threats and barriers to effective management of protected areas

In the early 1980s a study by IUCN (1984) summarised the kinds of threats facing 43 of the world's most threatened protected areas. The top ten reported threats were:	A subsequent survey of 135 parks in more than 50 countries (Machlis and Tichnell 1985) reported the most common threats as:	Survey of 148 national parks in South America (Amend and Amend 1985). Park managers were asked to rate their three principal problems.	IUCN 1994 Regional Survey of Protected Areas surveyed WCPA members and other protected area professionals. Figures in brackets are the percentage of WCPA regions reporting a threat	Threats to protected areas identified in IUCN-WCPA Delegate Survey conducted at Vth World Parks Congress, 2003 based on responses from 479 delegates	Barriers to effective management identified in IUCN WCPA Delegate Survey conducted at Vth World Parks Congress, 2003 based on responses from 479 delegates
Inadequate management resources	Illegal removal of animal life	Extraction of natural resources	Habitat destruction or alteration (79%)	Adjacent land use	Inadequate funding
Human encroachment	Lack of management personnel	Lack of qualified staff	Inadequate staff numbers and training (79%)	Invasive species	Inadequate monitoring
Change in water regime or hydro development	Removal of vegetation	Land tenure not clarified	Inadequate funds (71%)	Agricultural encroachment	Lack of political support
Poaching	Soil erosion	Agriculture and grazing	Pollution (65%)	Commercial overharvesting	Inadequate evaluation systems
Adjacent land development	Local attitudes	Poor park planning	Inadequate legislation, policy or administrative arrangements (65%)	Infrastructure development	Inadequate training
Inappropriate internal development (eg roads)	Conflicting demands on management	Illegal occupancy	Overharvesting (eg. timber, wildlife, water) (57%)	Poaching and illegal harvesting	Inadequate leadership
Mining and prospecting	Fire	Inappropriate or undefined park boundaries	Encroachment (57%)	Inappropriate fire regimes	Insufficient outreach and partnerships
Livestock conflicts	Human harassment of animals	Insufficient control	Poaching/illegal harvesting (57%)	Inappropriate livestock grazing	Lack of community support
Military activity	Loss of habitat	Fires	Absence of political will (57%)	Extraction of minerals and gas	Lack of enforcement
Forestry activities	Vegetation trampling	Legal occupancy	Inappropriate development Tourism impacts Impact from adjacent land use (all 50%)	Water extraction	Inadequate personnel management

Sources: IUCN (1984); Machlis and Tichnell (1985); Amend and Amend (1985); IUCN (1994); Hockings *et al.* (2005). (Data from IUCN (1994) analysed by Hockings (2002). Threats are in order, with the most commonly reported listed on the top.)

External influences – protected areas in the wider landscape

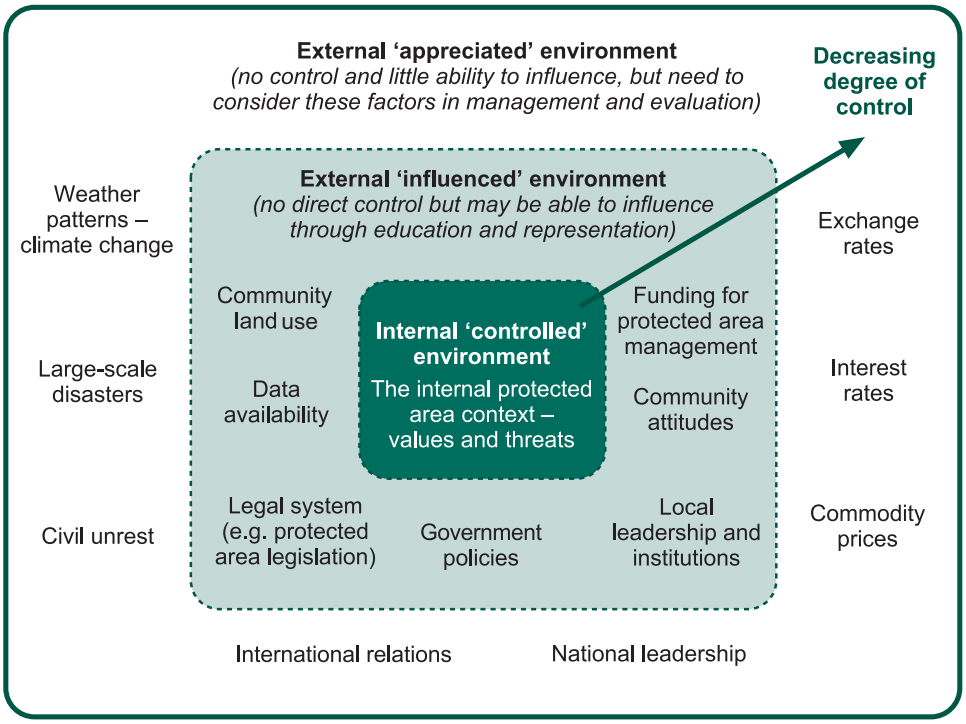
The 'management environment' of a protected area is an essential part of the context to be considered in evaluation. The management environment includes any factors external to the protected area and its management agency that could influence management effectiveness.

External factors may operate at local, regional, national or international level. As shown in Figure 5, the management environment can be visualized as a continuum, with a gradually reducing degree of 'control' by the manager as influencing factors emanate from more distant or general sources.[34] For example, factors such as conflicts, national or local politics, or pollution outside the park boundaries may be beyond the control of managers, but will have significant impacts on management and should be referred up to higher levels of government. Other factors, such as natural disasters and global economic pressures, might just need to be recognised and their influence appreciated when interpreting management effectiveness. External evaluators can help to list threats that would be politically difficult for managers to identify themselves; for instance problems coming from senior staff or politicians.

Assessments, particularly of protected area systems or of protected areas in more than one country, should consider the national context, including the priority accorded to conservation and the legislative and policy environment. Specific factors assessed relating to national context could include the proportion of the national budget allocated to protected areas and environmental conservation; the ratification of relevant international treaties and conventions such as Ramsar, the World Heritage Convention and the Convention on Biological Diversity; and recognition of the role of protected areas within national policies and strategies.

The local environment and surrounding communities are also important. For example, assessments must consider the land uses surrounding a protected area, and the extent of its isolation from or connectivity to other natural areas. Effectiveness assessments should always consider involving local communities and should at least record the quality of relationships between protected area managers and local people.

Figure 5. The protected area management environment shown in the 'degree of control' model (adapted from Cusworth and Franks (1993), p. 28)



[34] Cusworth and Franks (1993).

Stakeholders

Effective management usually includes strategic partnerships and engagement with stakeholders who influence the site's values, both positively and negatively, and who may depend on the site's resources in some way. Identification of stakeholders and partners, an understanding of their relationship to the site and its resources, and a consideration of the level of participation of these individuals, groups or organizations should be included as part of the context assessment. At this stage, the main focus is on identifying who stakeholders are, what their influence is and ideally what they think about the protected area. The extent to which these people are involved in carrying out the assessment is a separate question.

Even identifying all the stakeholder groups is complex, and will involve local communities, including in some cases nomadic communities who may only be present occasionally, and more distant people who still have strong feelings about the protected area – there are often differing opinions between these various groups. It may be worth considering giving weighting to the importance of different groups, although this is always potentially controversial. Various methods exist for ensuring that the least powerful people within communities are given adequate consideration.[35]

How does context evaluation relate to the other evaluation elements?

- Feedback from all phases of the evaluation cycle may indicate the need for changes to the protected area or project context, such as changes to broad government policy or economic incentives. These matters are generally beyond the control of managers, but evaluation reporting can bring them to the attention of other influential people.
- When evaluating other elements in the management cycle, it is also important to consider context – both the internal and the external environment – as this will be critical when interpreting results. Factors relating to the external environment can be critical to the success or failure of particular interventions and will have major influences on management of protected areas. Context assessment is very closely linked to assessment of outcomes, through the identification of key protected area values, management objectives and threats.

3.3 Assessing planning

Planning
Where do we want to be and how will we get there?

Is the legal status and tenure of the site clear?
How adequate is the protected area system?
Does the design of site allow it to function effectively?
Does the site have clear management planning?

Why is planning important?

A protected area that suffers from fundamental design flaws is unlikely to be effective, however efficiently the managing body operates, and regular assessment of the quality of planning therefore underpins much of what follows. This element of evaluation considers the design features of a protected area or a protected area system – the physical, legal and institutional factors which determine whether its management will be relatively straightforward or complicated.

Foundation of planning assessment

Key criteria to be covered in this section include:

- protected area legislation and policy;
- design of protected area systems;
- design of reserves; and
- management planning.

Protected area legislation and policy

In some assessments, an analysis of the adequacy of protected area legislation and policy may be needed. Such analysis will be particularly important if more than one type of protected area or management agency is being assessed. Note that at a national level a general consideration of legislation and policy will be part of the 'external management environment' and considered in the context assessment. In the planning element of evaluation, more specific matters are being assessed such as whether an aspect of park management is less than effective because legislation is inadequate (for example, efforts to allow Indigenous people right of access to a protected area may be hampered by outdated laws), or whether operational policies are available to clearly support management.

Design of protected area systems

Evaluations that consider the effectiveness of a protected area system as a whole need to consider the number and

[35] Colfer *et al.* (1999).

extent of protected areas within the system, and whether they are located in the best places to provide adequate representation of a region's biodiversity and other natural and cultural resources that the system aims to conserve. Increasingly, some form of 'gap analysis'[36] is conducted to assess the extent to which the range of natural and cultural values is included in protected areas. A gap analysis compares data on biodiversity distribution with information on protected area coverage and identifies those species and ecosystems that currently have inadequate coverage.

Methods and criteria for selecting areas for inclusion in a protected area network more systematically have received much attention.[37] Such methods aim to improve the effectiveness of the protected area system by ensuring that key features of interest are included within the network. For example, many protected area agencies aim to sample biodiversity consistently through ensuring that every bioregion (and subdivisions as appropriate) is represented in the park system. Where a system has clearly stated targets for acquisition in terms of area (for example 5 or 10 per cent of the land area) and/or representativeness (for example, 80 per cent of vegetation communities to be represented in the protected area system), progress can be relatively easily assessed.

Design of individual protected areas

Assessing the design of an individual protected area requires finding out how its size, location and boundaries affect its management. For example, freshwater protected areas which include only part of a river catchment might suffer from problems such as siltation of waterways, invasion of pest plants from upstream and depletion of aquatic wildlife if other parts of the catchment are not sympathetically managed. Information from the assessment of reserve design can be used to identify ways in which management effectiveness could be improved, either through changes to protected area size or boundary location (e.g. through additional acquisition to enclose complete watersheds, to exclude in-holdings of private land, and to maintain connections between reserves and other tracts of natural or semi-natural land); or through other mechanisms such as cooperative agreements with neighbours, complementary legislation, and management activities such as weed control which extend beyond the protected area boundaries.

The *size* of a reserve influences many aspects of management, though desirable size depends on management objectives. It will determine the viability or likelihood of long-term survival of many species, especially very large animals and high-level carnivores that require large home ranges or marine systems that encompass specific life cycles. A large protected area has greater resilience and ability to withstand gradual changes (for example through climate change) or sporadic major changes, such as fire, population crashes among keystone species or catastrophic pest outbreaks. Large reserves are more likely to be able to embrace a natural disturbance regime, such as fire or cyclones, without the need for active intervention, and with fewer effects on neighbours. Large multiple-use marine reserves have been shown to be particularly effective compared to small single-use marine areas in many circumstances.[38]

However, small protected areas can deliver some objectives effectively. Examples include micro-reserves to protect crop genetic diversity, sacred groves that also contain biodiversity values, small isolated coral cays where seabirds breed, and small wetland areas which are used by migratory birds. Many IUCN Category III and IV reserves are quite small.

Shape is also important, as reserves with a lower boundary to area ratio are less exposed to edge effects, including invasion by pest species. Protected areas that consist of a narrow coastal strip without room to expand landwards in case of sea-level rise, may for example be more susceptible to climate change impacts. *Connectivity* refers to the degree to which an individual protected area is connected to other protected areas within the network, or to buffer zones, corridors or "stepping stones" for migratory species – this aspect of design is increasingly important where the land outside the park is cleared or used for purposes incompatible with biodiversity conservation. The *integrity* of a reserve, or its insulation from adverse outside influences, depends not only on size and shape but also on the nature of the boundaries: for example, alignment of freshwater reserve and watershed boundaries in all but the flattest landscapes helps to reduce or eliminate water-borne pollutants from outside.

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[36] Scott *et al.* (1993); Dudley and Parrish (2006).

[37] See Davey (1998) and Barber *et al.* (2004) for reviews of the extensive literature on this topic; also Margules and Pressey (2000).

[38] Kenchington (1990).

Management planning

Protected areas and systems need sound, planned management even if they have been well designed. Clear and appropriate objectives for the protected area, supported by a management plan and adequate resources, are characteristics of effective management. Most evaluation studies ask whether plans and objectives are available to managers, whether they are up-to-date and if all the protected area values are addressed in the plan. They also assess the quality of plans – including their scope, the clarity and practicality of their aims, and their relevance to on-ground management. The existence of a system of management effectiveness evaluation, and of a process for ensuring the results of such evaluations are fed back into management decisions, are also indicators of effective planning systems. Assessments also need to get a feel for whether the plans are actually being used or just gathering dust on someone's shelves: for instance whether they have been translated into annual work plans that are implemented and assessed.

How does planning evaluation relate to the other evaluation elements?

- Feedback from other phases of the evaluation cycle may recommend changes to the design of the protected area or system, and may highlight the need for better legislation, policies and planning. Improvements or adjustments to the management plan are most likely to be recommended, but long-term problems may also suggest the need to change protected area size or boundaries.
- When evaluating other elements in the management cycle, the protected area plan, especially its objectives, target and stated outputs and tasks, will be the basis for establishing expectations and benchmarks that are used in the assessment process. Indeed, a good management plan will be the major source for identifying indicators and targets to be measured in the assessment.

3.4 Assessing inputs

Inputs
What do we need?

What resources are needed for effective management?
Are sufficient resources being devoted to managing the protected area system/site?
How are resources being applied across the various areas of management?

Why are inputs important?

Repeated assessments of protected area effectiveness suggest, not surprisingly, that the level of resources available for management often has a major impact on effectiveness. But this is also a difficult and somewhat subjective issue and virtually all managers will claim (and believe) themselves to be under-resourced. Assessments therefore need to develop a clear and unbiased picture of the inputs available and to identify gaps and shortfalls (or waste and over-spend if this is occurring).

Foundation of input assessment

Input assessments investigate the adequacy of resources – human capacity, facilities, information, operational money and equipment – for effective management. This assessment needs to consider:

- the level of resources needed;
- the extent to which these resources are available; and
- whether resources are being used and applied in the best way.

Resource needs

To estimate whether resources are adequate, the assessment first needs to establish what is needed for 'adequate' management. This initial step is not simple: it requires standards to be established and then costs estimated for the required human resources, infrastructure, equipment and operational budgets. Management plans often give guidance as to what is expected in a protected area, but the actions may not be costed and management resources and capacities are often not defined.

While various strategies to develop better sustainable financing are being discussed,[39] many management agencies, even in comparatively wealthy countries, now find that servicing all their protected areas to a desirable level is not economically possible. To tackle this problem, some systems rank parks (for example, according to the significance of values and level of threats) and set standards for park management according to the park ranking.

The accuracy of needs assessments will depend on the knowledge and experience of people making the estimation. It will be most accurate if management is divided into a series of tasks or activities and separate estimates are made of the needs of each. Demand for resources cannot be properly estimated without

[39] Lillo *et al.* (2004).

understanding the objectives of management and the current state of the biological, social and cultural environment (i.e. the *context* and *outcomes*). *Planning* therefore underpins this process. Although at first sight estimation of inputs is one of the simpler parts of an assessment, working out what is needed requires information from the rest of the evaluation.

Objective estimation of needs can strengthen proposals for funding from government, donors and other sources of support. Information on the extent and adequacy of resources available for management allows changes in staff and resource availability to be tracked over time. Figure 6 shows some of the factors influencing the resource requirements

The resources needed are influenced by both internal and external demands, but a realistic understanding of what is available is also required: there is for instance no point in planning to promote increased tourism without the resources to address this. The inter-relationship between demands and inputs is illustrated diagrammatically in Figure 6.

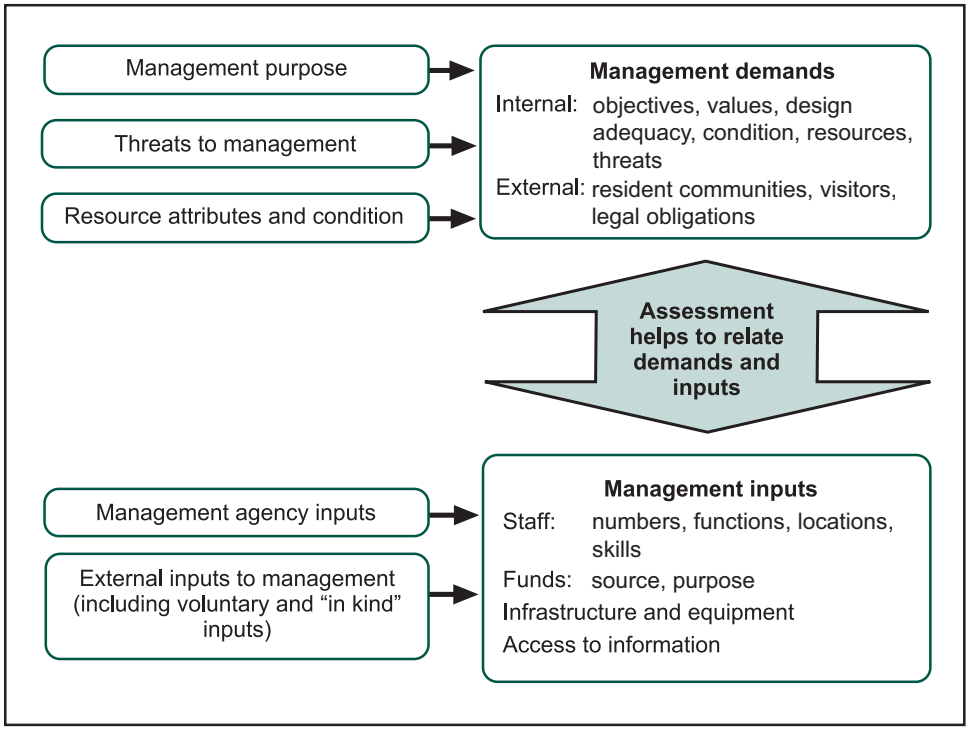
Resource availability

Once the desirable level of inputs is established, the assessment can review the availability of resources and make an objective evaluation of their adequacy. Information is usually available about *quantity* of resource – e.g. budgets, access to information, equipment, infrastructure and staff – but information about *quality* of these resources – real staff capacity, budget distribution, condition of infrastructure – is much more difficult to obtain. The level of resources available for management is then compared to the estimated requirement.

Limitations on use of financial and staffing data in the absence of contextual information have been well recognised. However, they can provide some indication of whether an area is receiving more or less resources than comparable areas in similar circumstances. Comparing sites will always be difficult because of the particular conditions that affect management requirements in each area. Benchmarking within national and regional contexts will help to minimize but not eliminate these problems. The need for contextual understanding increases from site to global scales. Comparing expenditure across time within a site or between sites in the same country has more meaning than a comparison of expenditure per unit area between countries with very different economic and social conditions.

Time series data can also assist by providing information on trends in the level of support for protected area management at a site, national or regional level.

Figure 6. The relationship between management demands and management inputs



Application of resources

Data on staffing and funding will be most useful, in the context of evaluating management effectiveness, if categorized by management purpose rather than types of expenditure, as this gives an indication of the directions and priorities of management.

Broad management categories to be used in assessing levels of input could include:

- natural resource management;
- cultural resource management;
- visitor management; and
- community liaison and development.

Understanding where staff time and resources are being directed can be critically important for interpreting other evaluation results – for example, a sharp increase in capital works funds without a corresponding increase in staff numbers can lead to effort being directed away from natural and cultural resource management. It also permits judgements to be made about the relative priority being afforded to different aspects of protected area management.

How does input evaluation relate to the other elements?

- Feedback from other phases of the evaluation cycle often recommends either a different level of input (often more funding and staff) or a different allocation and distribution of existing resources. For instance if the context assessment has highlighted threats that are currently not being addressed, or being inadequately addressed, then either more inputs are required or staff time may need to be reallocated from less urgent jobs.
- When evaluating other elements in the management cycle, the level of inputs has to be kept in mind, especially in establishing whether an output or outcome has been achieved efficiently, and whether current management levels are sustainable.

3.5 Assessing management processes

Process

How do we go about management?

Are the best systems and standards of management being followed?
Are agreed policies and procedures in place and being followed?
How can the management practices be improved?

Why is management process important?

Even well-planned and supported protected areas need sound management processes if they are to be effective. A range of accepted procedures can help, along with standards of good management. In the past, many protected areas were managed by people with excellent knowledge of ecology and wildlife but no training in management. This sometimes led to problems as staff numbers increased and expectations were raised. Today, managers are expected to deal with an increasing range of issues, including some – such as community relations, workplace safety and management of sacred sites within protected areas – that have gained a greater emphasis in the last few years. In addition, higher levels of accountability are often expected. Management processes may not have kept up with all these changes.

Foundations of process assessment

The assessment of management processes focuses on the standard of management within a protected area system or site and requires:

- definition of what systems and standards are acceptable and which are 'best practice' (benchmarks);
- decisions about which of these will be required in particular systems and individual protected areas;
- investigation of whether systems are being implemented and standards are being met; and
- recommendations as to whether the systems and standards are appropriate or could be improved.

While process evaluations alone are not a reliable guide to management effectiveness, adoption of the best possible management processes and systems is essential for good management. A regular audit of such systems can help to achieve better management outcomes.

Benchmarks, standards and best practice

The establishment of benchmarks or best practice guidelines for management can provide a good basis on which to assess management process. Some agencies have defined benchmarks for a wide range of protected area management activities through policies, procedures, manuals and best practice guidelines. These give staff – and evaluators – a very clear idea as to what is expected. For example, manuals might outline the expected design and maintenance standards for visitor facilities. Where a protected area or protected area agency has defined its own benchmarks, or has explicitly stated that it follows some more broadly defined guidelines and codes of practice published by organizations such as IUCN, then assessment is made much easier.

The notion of best practice provides a guide to assessing the appropriateness of management processes that are being used *but* it must be recognised that it is seldom at present possible to define a single "best practice" for any area of activity throughout the world except at a fairly general level. Not only will best practice vary from country to country and region to region, but it is also dependent on the circumstances that apply to different IUCN categories of protected area. Factors affecting best practice include: available resources; the nature and extent of use of the protected area and the threats that it faces; national cultural and behavioural norms; the legal and administrative framework of the country; and objectives of management. For example, a high-value popular protected area under threat from urban encroachment might require a range and standard of visitor and community education services not considered necessary in a remote, rarely visited protected area where a basic information sheet and occasional community liaison is quite sufficient. Where funds are limited, managers might make deliberate decisions about which protected areas are managed to 'best practice' standards and which are managed to just acceptable standards. Evaluation needs to look at whether these standards are in fact adequate, as well as whether they are being met.

There are an increasing number of international standards that may be relevant to all protected areas, or should at least be addressed within management plans, such as standards of treatment for staff as agreed by the International Labour Organization and best practice related to Indigenous peoples and local communities, such as those promoted by the CBD. While these provide a baseline, most protected area agencies will need to go further in making these relevant to local conditions.

Making decisions about standards for individual protected areas

If the park or system being evaluated does not have established standards, the assessment process will need to establish, at least in broad terms, what these should be. Table 4 below outlines the range of management processes that may need to be considered and some possible sources of information about these.

In a parallel process to measuring management effectiveness, efforts are being made to assess governance of protected areas[40] – that is issues of ownership, power and management responsibility and the way these are divided between government, other organizations and sectors of the community. These two types of assessment are likely to become more closely

Table 4. Subjects and sources for process standards

Management processes that need to be assessed	Possible sources of information about management processes
• Planning processes • Natural resource management, including research, monitoring and evaluation • Cultural resource management, including research, monitoring and evaluation • Visitor management • Facility and equipment maintenance • Patrol and enforcement • Communication, education and advocacy • Participation and conflict resolution including with local communities and Indigenous peoples • Staff management and training • Management of resource use by humans (extractive, tourism) • Personnel management • Budget and financial control • Governance processes • Monitoring and evaluation	• Agency policies • Relevant provisions in existing park management plans • Best practice guidelines • International agreements and treaties such as the CBD, Ramsar and UNESCO (all of which have best standards guidelines) • People with local, national or international experience in protected area management • Official international standards where they exist (e.g. environmental management systems) • Park staff • Local communities and others with a stake in the management of the area

[40] Abrams *et al.* (2003).

linked in the future, and assessment of process should generally include some measure of the effectiveness of governance systems. As protected areas become more varied in their approach to governance, with additional emphasis on community conserved areas, private reserves and co-management systems, the 'manager' will not always be a single government employee but could be a community, or a private individual, or a formal or informal committee. For now, appropriateness of the particular governance model being used might usefully be included as one of the factors being assessed under this section.

Are systems being implemented and standards being met?

Benchmarks for protected area management will set forth the ideal: that is the best way in which a particular management process should be conducted given the nature and circumstances of the park. A stepped scoring system (use of four or five steps is common) should then be established, ranging from 'complete failure' to meet management standards up to 'full compliance'.

The establishment of management standards and the assessment of performance against these standards is often best achieved through a participatory process, involving not just the protected area manager and staff, but also community representatives, external experts and other stakeholders. The level of detail contained in management standards will vary – see for example case studies on the WWF/World Bank Tracking Tool (Case Study VI) and the New South Wales State of the Parks reporting (Case Study VII). For each process, standards should address the important factors that affect management success. In most instances a core set of factors will apply but there may be additional or distinctive factors that need to be considered on a case-by-case basis. Standards will often be expressed in a descriptive rather than quantitative way, but can still be framed precisely.

The actual assessment against standards is often an exercise in judgement. It is important to establish why an aspect of management is not performed to the desired standard as this can help identify what improvements could be made; for instance whether the particular aspect of management is beyond the control of an individual manager.

Determining appropriateness of standards and improving management capacity

As well as forming the basis for process assessment, the definition of management process standards can help improve management capacity. These standards can act both as a policy document to guide staff and as a basis for planning future management programmes, since identification of barriers to better management is the first step in addressing any shortcomings. This information can also be used to support proposals for additional funds or training, either from within the agency or from external donors.

How does process evaluation relate to the other elements?

- Results from other phases of the evaluation cycle may indicate that processes are not optimal for effective or efficient management, and that some changes to the established ways of doing things are desirable – this is perhaps particularly true with respect to outputs and outcomes.
- When evaluating other elements in the management cycle, the processes need to be considered. Were results achieved because of the processes or in spite of them? Is there evidence that particular processes helped achieve outputs or outcomes in an efficient way? Staff may have strong opinions on which processes are helpful and which cause them problems.

3.6 Assessing outputs

Outputs

What did we do and what products or services were produced?

Has the management plan and work programme been implemented? What are the results/outputs of management?

Why are outputs important?

Outputs are the penultimate part of the assessment – determining if protected area managers and other stakeholders achieved what they set out to do. This has been a common approach in reporting and evaluation of conservation programmes and often forms the core information presented in annual reports and other reviews. This type of information is most useful for evaluation purposes where pre-existing plans, targets or standards have been established against which achievement can be measured – in an ideal situation there will be a management plan or work plan with a clear set of targets that have either succeeded or failed, although in many cases rather more work will be needed to collect this information.

Foundations of output assessment

Assessment of outputs looks at:

- the number or level of products and services delivered; and
- the extent to which stated actions, tasks and strategies were implemented.

Table 5. Possible types of desired outputs

Product and service delivery	Achievement of planned work programme
Numbers of users (e.g. visitor numbers to the park, numbers of people using a service, numbers of inquiries answered, numbers of researchers) Measures of the volume of work output (e.g. numbers of meetings held with local communities, numbers of patrols undertaken, extent of area surveyed in a research programme, numbers of prosecutions instigated) Measures of physical outputs (e.g. length of park boundary delineated and marked, numbers of brochures produced or distributed, number and value of development projects completed)	Actual work programme versus planned work programme (e.g. numbers of patrols undertaken, extent to which planned capital works programme has been completed) Actual versus planned expenditure Extent of implementation of management plan or other programme-planning document (usually relates to longer-term activities than an annual work programme)

Information on outputs can generally be found in annual reports and other review activities carried out by protected area management. Where clear targets are not available for the assessment, these will have to be identified and some of the most important elements are outlined in Table 5 below.

Reviews of work programme achievement and expenditure are common internal management tools. Broad-scale reviews of implementation of planning commitments are often used as a major element in external audits or programme reviews. This type of output assessment is important in establishing accountability. However, its full value as an evaluation tool is achieved only if it is integrated back into the planning and management cycle.

Results from this type of monitoring can be used to consider why some planned activities have not been undertaken and then either change processes or obtain more resources to rectify the problem; or revise the plan both during its life and at the end of the planning cycle.

Output assessment does not address the question of whether the plans are appropriate or adequate, but simply whether they are being implemented. The adequacy of planning systems and the plans themselves are better assessed by *process* and *outcome* approaches to evaluation respectively.

How does output evaluation relate to the other elements?

- Outputs need to be assessed in relation to the inputs available and the processes used – we cannot expect a high output level if resourcing is inadequate or there are no systems to help deliver them.
- The level of outputs – i.e. whether targets for activities and services have been achieved – will be a major test as to whether other elements of the cycle are functioning adequately. Output monitoring can help ensure that management plans are not ignored in the day-to-day business of managing a protected area. As monitoring results build over time, judgements can be made about whether current levels of resources will allow the plan to be fully implemented and which topics within the plan require more or less attention. If most actions and policies proposed in a management plan remain unimplemented, this may indicate a critical shortage of management resources or a lack of acceptance of the plan by staff. However, if implementation is proceeding well, but there is evidence that the desired outcomes are not being achieved, new strategies or policies may be required.

3.7 Assessing outcomes

Outcomes
What did we achieve?

Has management resulted in the achievement of the objectives of, and desired outcomes for, the protected area or system?

Why are outcomes important?

Outcome assessment is vitally important because it measures the real effects of management actions: whether management is maintaining the core values for which the protected area was established. Even if other aspects of management are assessed as highly effective, a protected area will fail if it loses its core values (this would suggest that problems beyond the protected area boundaries need to be addressed.) Although outcomes are almost certainly the single most important of the elements, they are also often the most difficult and most expensive to measure.

Foundation of outcomes assessment

A number of specific issues usually need to be addressed:

- identification of desired outcomes;
- options for outcome evaluation and monitoring;
- the condition of values including biodiversity;
- whether socio-economic and cultural conditions remained constant or improved; and
- whether specific management objectives were achieved and threats abated.

Identification of desired outcomes

Evaluations of outcome need to be based upon a clear understanding of what management is aiming to accomplish[41] and what specific values are to be conserved. Outcome assessment is most meaningful where concrete objectives for management have been specified in national legislation, NGO or community policies, site-specific management plans or project plans.[42] In these cases the assessment can move quickly to data gathering and analysis. Unfortunately desired outcomes are not always expressed so clearly: sometimes objectives are framed in terms of activities to be undertaken rather than results to be achieved; sometimes no explicit management objectives have been set; and in other cases objectives are too vague to be assessed – for example, stating that 'biodiversity should be conserved' without a clear statement of what this means in the particular area.

The importance of establishing clear, measurable, outcome-based objectives as a basis for management cannot be stressed too much. It is fundamental, not only to the assessment of management effectiveness but to the whole process of management itself.[43]

Setting up an outcome-based monitoring and evaluation programme is likely to highlight areas where objectives are unclear, lack specificity or are phrased in terms of outputs rather than outcomes. These objectives should be clarified and re-stated in an appropriate form[44] – thus setting up a monitoring system will be closely related to management planning and other elements in the assessment.

Similarly, if a primary conservation objective is to conserve the key values, the clear expression of these values (see section 3.2 on Context assessment) is very useful for outcome assessment. This suggests that we need to think about outcome monitoring at an early stage in developing an evaluation: it is for this reason that values are identified as part of the context element of the IUCN-WCPA Framework. The assessment of the state of conservation of these values then occurs as part of outcome evaluation.

Fauna monitoring © *Chris Mitchell, QPWS*

Options for outcome evaluation and monitoring

Outcome evaluation usually needs to estimate the current status of a value, the extent to which a threat has been reduced or the extent to which other objectives of

41 MacKinnon *et al.* (1986); Mason (1997); Hockings (1998).
42 Leverington and Hockings (2004).
43 MacKinnon *et al.* (1986).
44 Jones (2000).

management have been achieved, and the change in this status over the period of management being assessed. Examples include estimating the viability of a population of an endangered animal, the integrity of a cultural site, and the level of cooperation with a local community.

How do we go about this estimation? In some cases, a qualitative opinion from one or more people may be all that is available. For example, a rapid survey may simply record the protected area manager's opinion that a cultural site is well conserved. Qualitative observations can be valuable when recorded systematically, especially when a 'round-table' comprising experts, local knowledge and traditional knowledge can be convened.

Detailed scientific data from a monitoring programme is often sought to provide a more rigorous picture of what is happening. However, monitoring is expensive; and the management of large systems or protected areas with multiple objectives and many values, usually with limited resources, means that monitoring efforts must be carefully targeted and well designed. The particular indicators chosen for monitoring should if possible provide at least some information on as wide a range of values as possible – for example healthy populations of an animal with a large home-range will often say something as well about the overall health of the ecosystem. Because the specific objectives for management will be different for each protected area, the content of monitoring and evaluation programmes for assessing outcomes will be correspondingly diverse. As discussed in Context assessment (Section 3.2), methods for choosing the targets for both management and for monitoring and evaluation have been refined in recent projects such as Enhancing Our Heritage[45] and The Nature Conservancy's Conservation Action Programs.[46]

To monitor status of any value, it is usually necessary to decide:

- what *attributes* will be considered;
- what *indicators* of this attribute will be measured/assessed; and
- *methods* to be used in measuring the indicator.

Some examples of attributes, indicators and methods of measurements for three very different values are given in Table 6. Building monitoring systems will be a key part of many long-term attempts at measuring outcomes.

Often a rating system will be used to report on the status: a discussion of this in relation to ecological integrity is contained in the following section.

Table 6. Example of monitoring attributes, indicators and methods

Value	Attributes	Indicators	Method
Population of an endangered animal	Breeding success	Number of breeding females at sites x,y,z	Counting nests
	Mortality rate	Proportion of population dying each year	Tag and recapture
Integrity of an Indigenous art site	Visibility of artwork	Vibrancy and clarity compared with previous years	Photo-monitoring and analysis
	Disturbance level of site	Evidence of graffiti, trampling and soil compaction	Photo-monitoring and soil compaction measures
Level of cooperation with local community	Proportion of community supporting the protected area	Number of incursions by local people recorded	Patrol database
		Report of positive progress at meetings	Subjective quarterly reports reviewed

[45] Hockings *et al.* (2004).

[46] The Nature Conservancy (2005).

Assessing ecological integrity and threats status

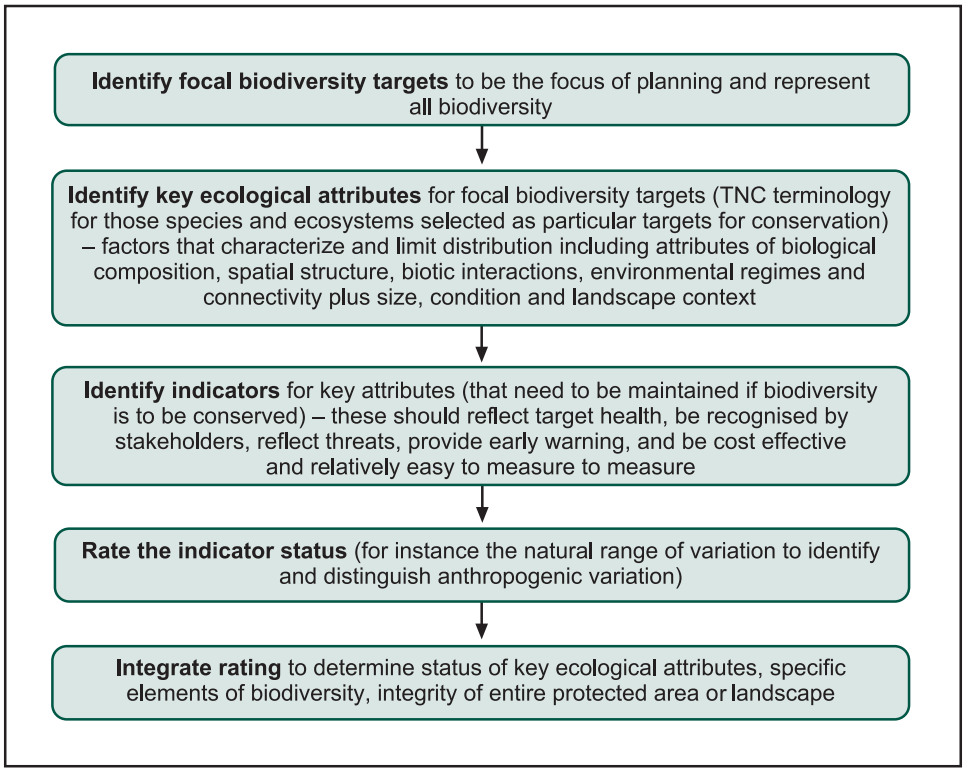
Most protected areas are managed to conserve a range – sometimes a vast range – of natural values, including ecosystem function and services, biodiversity at all levels from landscape and ecosystem through species and population to genetic; and human-wildlife interactions. Monitoring and evaluating ecological integrity and threats to it is a significant topic of research and discussion at present. While every protected area has its own values and objectives, some organizations have standardized the issues and areas to be measured in each park. For example, Parks Canada attempts to answer the following questions for each park:[47]

- Is the park losing native species?
- Are selected indicators within acceptable ranges?
- Are herbivores and predators playing their role?
- Are biological communities at a mix of ages and spacing that will support native biodiversity?
- Are productivity and decomposition operating within acceptable limits?
- Is the system cycling nutrients within acceptable limits?
- Are key physical processes supporting biodiversity?
- What are the key stressors we are concerned about?

To answer such questions and to evaluate the achievement of ecologically-related objectives, monitoring information based on solid science is highly desirable. To obtain such information, indicators are chosen for each value, objective or question, and methods to measure and report on these indicators are developed. (See Chapter 4 for more information on indicators and methods.)

The Nature Conservancy's Conservation Action Planning methodology[48] [49] has been used to measure ecological integrity in many different systems. The process is summarised in Figure 7.

Figure 7. The Nature Conservancy's Conservation Action Planning methodology for monitoring ecological integrity



[47] Parks Canada (2000).

[48] TNC (2003).

[49] Parrish *et al.* (2003).

Ratings are often used to report on the status of indicators and outcomes in a 'report-card' format which can easily be understood by managers. These ratings (usually poor/fair/good/very good or A,B,C,D) need to be built on a solid foundation.

In the TNC methodology, thresholds are carefully defined,[50] so each rating has a clear meaning and reflects whether the indicator falls within an acceptable range of variation (see Table 7).

Many aspects of this methodology can be applied to assessing outcomes related to social and cultural values as well.

Expedition National Park, Australia © *Robert Ashdown, QPWS*

Table 7. Method for illustrating outcome ratings

Very good (optimal)	Ecologically desirable status, requires little human intervention
Good (OK)	Within acceptable range of variation; requires some intervention
Fair (significant concern)	Outside acceptable range of variation but with intervention can be restored
Poor (imminent loss)	Outside acceptable range of variation; requires major intervention

Assessing the status of social and cultural values

Cultural heritage values and objectives relate to both material culture (art sites, buildings, traditional roads and pathways etc.) and non-material aspects such as people's connections to land, ceremonies, stories, songs, dances and ways of life.

While cultural values, especially the non-material aspects, are not always easy to define, they can be recorded, have associated indicators, and be assessed and rated in much the same way as the ecological values discussed above. For example, condition attributes and indicators for an ancient building might relate to the extent to which its structure remains whole and safe, while an Indigenous group's stories might be evaluated (preferably by the group themselves) in terms of their transmission to and adoption by the younger generations. In both cases, an 'acceptable range of variation' can be defined and the assessment can rate whether the conservation objectives have been achieved.

Social, economic and institutional indicators are typically not as well developed and not as commonly utilized as biological and physical indicators in natural protected area management. However this may change and it is interesting to note, for instance, that the UNESCO World Heritage Centre is considering extending the type of assessments undertaken in natural World Heritage sites to their cultural equivalents.

Of particular importance to local and Indigenous communities are the recognition and maintenance of traditional rights and land tenure, the existence of effective dispute resolution mechanisms, involvement in management decision-making processes, and the incorporation of traditional ecological knowledge into planning.

If there are no specific objectives defined in a management plan or other documentation, international standards and conventions on human rights can be a good starting point for developing community and cultural indicators. The subsistence values of protected area resources such as non-timber forest products are frequently under-recognised in management planning and effectiveness evaluations. The monitoring and assessment of social, economic and institutional indicators in protected areas should also be linked with

[50] Braun (2005).

broader landscape issues, and closer linkages with sustainability frameworks such as State of Environment reports are needed.

A better integration of social, economic and institutional indicators across a range of programmes will enable a better understanding of protected area impacts and of broader regional trends outside of protected areas.

Sangay community discussion © *Marc Hockings*

How does outcome evaluation relate to the other elements?

- Understanding linkages between outcomes and other elements of the management cycle (context, planning, inputs, processes and outputs) is a key step in identifying how management can be improved: i.e. in driving adaptive management. Rather than seeking to prove 'cause and 'effect' relationships, the analysis focuses on the 'explanatory power' of all the elements in the cycle and considering how the outcome can be best explained.
- If evaluation results are applied appropriately, the learning from this analysis will be used to improve management effectiveness by addressing whatever shortcomings are within the control or under the influence of managers. Outcome evaluation will then feed back into the other elements by providing the ultimate test of effectiveness. For example, inputs may have been adequate according to the needs assessment, but if outcomes were not achieved because of inadequate staffing, the needs assessment might be revised.

3.8 Conclusions

This chapter has explained the philosophy behind the six elements in the evaluation Framework and why we maintain that all are important in measuring management effectiveness. When carrying out an assessment, it is important to recognise that each element may interact with the other five and a consideration of all is needed to understand what is going on in the reserve. For example, if an objective of maintaining an animal population has not been achieved, this could be explained by any one or a combination of the following factors:

- context: severe drought leading to reduced food supply;
- planning: the park area too small or too isolated to support a viable population;
- input: no resources available to enforce hunting bans;
- process: staff not trained to recognise habitat conducted a control burn in breeding season, killing all the young; or
- output: the planned release of breeding-age females did not occur in time.

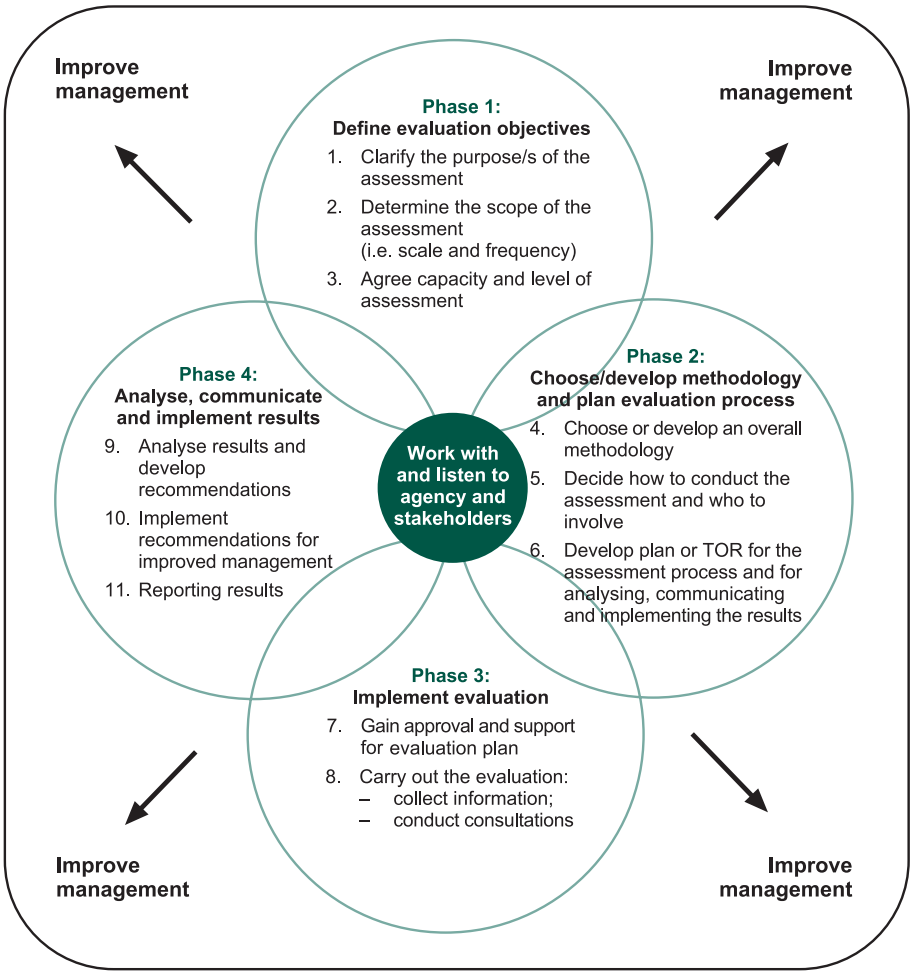
Chapter 5 details further methods for analysing and interpreting evaluation results.

4. Applying the Framework

A number of common steps are needed to plan an evaluation of management effectiveness within the Framework outlined in Chapter 3. These remain roughly the same for assessments aimed at individual protected areas and at protected area systems. Figure 8 presents the four major phases of the evaluation process:

- Defining evaluation objectives;
- Choosing/developing a methodology and planning the evaluation process;
- Implementing the evaluation;
- Analysing, communicating and implementing the results.

Figure 8. The four major phases of the assessment process



This chapter looks at the first three steps while Chapter 5 considers the final phase of analysing and communicating the results. It is important to consider all phases together when planning the evaluation. The process of undertaking an evaluation of management effectiveness is an iterative process which may be adjusted as a result of lessons learned from the process and as further assessments are undertaken.

4.1 Agreeing evaluation objectives (Phase 1)

The objectives of an evaluation are defined by considering its **purpose** and **scope** in light of the **resources** available and the subsequent **level** of the assessment to be attempted. Because the Framework is adaptable it can be applied to a range of different needs.

Clarifying the purpose/s of the assessment

As outlined in Chapter 2, there are four major purposes of management effectiveness evaluation (supporting adaptive management, deciding on resource allocation, addressing questions of accountability and building support for protected areas). These purposes will influence how the assessment is designed and implemented. Often the evaluation can be designed to fulfil several purposes and a range of reporting requirements; for instance both to help the manager and to provide information for reporting at national or international level (see Case Study II on the use of the RAPPAM methodology in Papua New Guinea). Whatever the primary purpose, consideration should be given to the fact that any publicly available evaluation may be used by others for quite different means; for instance an assessment aimed at improving management may be picked up and used by campaign groups.

Determining the scope of the evaluation

The scope is determined by (1) the **scale** of the evaluation process, i.e. whether the investigation is limited to one or a few sites or aims to consider a protected area system (or even a number of national systems), and (2) the **frequency** of assessments, which can range from a one-off study to continual monitoring and associated assessments undertaken on a regular basis.

Scale: the type of evaluation undertaken is likely to change depending on how widely the assessment is aimed. There are several possible levels:

- Individual protected area;
- Group of protected areas (grouped geographically, by biome or linked to specific projects);
- All protected areas managed by a single agency;
- All protected areas within a country;
- Comparisons of protected areas between countries.

At agency and national scales, evaluation needs to include both the effectiveness with which individual sites within the system are managed and also agency or system-wide issues that affect the overall operation and effectiveness of the protected area network. Evaluation at any scale needs to allow for the variations that apply in different countries, systems and categories of protected areas. Where a single agency is responsible for managing all protected areas within a country, the agency and national scales will be identical. However, in many countries more than one agency is responsible for managing protected areas and in these cases it may be desirable to look at both the individual agencies and the overall national picture (see Case Study III on Catalonia and Case Study VII on New South Wales for examples of regional assessments). The user groups will also vary with the scale of assessment. At the scale of an individual protected area, the main interest will come from managers and perhaps also local communities; managers are most likely to need information that they can use for adaptive management and accountability purposes. However, for high-profile parks, advocacy groups may also show a strong interest. At the national and global levels, a wider range of external users will be interested in assessments that can be used for lobbying, accountability, programme planning and priority setting.

Frequency: the purpose of the assessment is clearly linked to the frequency at which assessments are carried out. For example, an NGO reviewing a national protected area system for advocacy purposes might carry out a one-off assessment, while protected area authorities might best establish the effectiveness of individual sites through regular assessments at agreed intervals.

In general, evaluation is most useful as a tool for improving management effectiveness if it is repeated at regular intervals, because this gives better information on trends and also shows if management changes are improving site condition. Evaluation which encompasses all the elements of the Framework can be carried on a regular cycle, for instance between every two or five years. Alternatively, different elements of the Framework can be assessed at differing intervals depending on the management component being assessed. *Inputs* and *outputs* could be assessed annually (often linked with preparation of annual reports, work plans and budgets), while *context* and *outcomes* could be assessed at less frequent periods (e.g. 3–5 years, or linked with revisions of the management plan). Repeated evaluation exercises allow for site management and site challenges (such as threats) to be tracked over time, help identify improvements needed and determine the effectiveness of adaptive management.

As many assessments are developed within projects run by NGOs or as requirements of major funding bodies, the scope of the project may also be affected by the resources made available for assessment within projects or by timescales imposed by project managers.

Agreeing capacity and level of evaluation

The **level** of the evaluation, i.e. whether it is a relatively quick assessment based on available data or a more in-

depth assessment based on established and detailed monitoring of a site or system's objectives, will be determined by the purpose, the **resources** available and the organizational capacity and willingness to undertake an assessment.

The quickest and cheapest assessments need little or no additional field research and use established assessment methodologies. This type of evaluation will rely largely on literature research and the informed opinions of site or system managers and/or independent assessors, assessing the *context* of the protected area network or individual site along with the appropriateness of *planning*, *inputs* and *processes* of management and limited assessment of *outputs* and *outcomes*. A more detailed assessment is likely to include some additional monitoring, particularly of *outputs* and *outcomes* of management and the methodologies. The most detailed and thorough assessments will place the greatest emphasis on monitoring the extent of achievement of management objectives through focussing on *outputs* and *outcomes* as well as of *context, planning, inputs* and *processes*.

The level of the evaluation could also be determined by the availability of information: an in-depth evaluation can be achieved quite easily and quickly where comprehensive monitoring and research information exists and is easily accessible; whilst in other protected areas even a seemingly data-poor assessment may take considerable time to achieve, if information sources are scattered or protected areas are hard to access or cover very large areas.

4.2 Agreeing methodology and planning the assessment process (Phase 2)

There are already a suite of tools available for monitoring and evaluation within protected areas, ranging from different assessment methodologies to detailed guidelines for monitoring. Some users choose to select one particular system and apply this as it is: others look at a variety of existing tools and develop something slightly different adapted to individual circumstances.

Choosing or developing an approach

Since the first edition of the IUCN-WCPA Framework was published in 2000, there has been a great deal of thought put into developing, testing and implementing associated methodologies. Most of these, as well as insights into their use and discussions of results, are publicly available (see case studies in Chapter 7). Their use or adaptation can save considerable resources as well as allowing comparability of results between projects or sites. Adopting or adapting a particular system does not mean all of the indicators, survey methods or reporting formats of a previous project need to be used. These can and should be tailored to suit local needs and realities (though there are obvious advantages in using standard techniques and questions where they are applicable.). For example:

- sections that do not apply should be omitted from an evaluation;
- evaluations could use a combination of several different tools or methodologies (such as a rapid assessment questionnaire to look at inputs and processes combined with an in-depth assessment of biodiversity and cultural outcomes);
- increased emphasis and additional questions or indicators could be added in areas of particular importance to a specific site or system.

Even where new methodologies are developed, the wealth of resources and experiences that have already been gathered in undertaking the evaluation of management effectiveness can be considered. When developing methodologies from first principles it may be best to start with a fairly simple system which can be adapted and developed into a more sophisticated system as participants gain experience as to what works best.

Practitioners have listed the following characteristics of good evaluation methods and tools.[51] Although, these may not all be essential for every evaluation method, they provide a useful standard against which to judge methodologies being considered:

- Cost-effective – if they are too expensive they will not be adopted;
- Replicable – to allow comparability across sites and times;
- Robust and statistically valid – must be able to withstand scrutiny;
- Simple – very complex tools can alienate field staff and stakeholders;
- Field-tested – pilot studies before major projects are essential;
- Documented – in manuals or other formats so that they can be reviewed;
- Credible, honest and non-corrupt – the results need to be shown to be genuine;

[51] Adapted from Leverington and Hockings (2004).

- Able to yield unambiguous results – or to have the greatest explanatory power possible;
- Congruent – between management and community expectations;
- Efficient – the assessment process should draw on and review longer-term monitoring where possible, but should not be overly time-consuming; and
- Adaptable – it should be possible to improve methodologies over time.

Deciding how to conduct the evaluation and who to involve

Assessments can be completed internally, i.e. self-assessment, or be carried out by external 'facilitators', or by using a mixture of both approaches. There are advantages and disadvantages in both approaches. Perhaps even more importantly, an increasing number of assessments are also opening up to input from other stakeholders.

External assessors: It may be beneficial to involve external facilitators or volunteers who will be impartial, bring a freshness of vision and have expertise in assessment procedures; they are also likely to see things from a different cultural context and perhaps pick up issues that have been missed within a particular context or country. The evaluation of protected areas in Catalonia (Case Study III) used up to a hundred evaluators! External facilitators can also take pressure off managers, if time and resources are limited and if it is politically difficult for people within a protected area agency to identify particular problems. On the other hand, people coming from outside might have only a limited knowledge of the area and its issues and the time spent on learning is a real cost in time and money (particularly when consultants are used). When outsiders complete the evaluation they also often take with them much of the information and perspectives gained, which are then no longer available to management. Unfortunately, local managers and local communities have sometimes been marginalized in evaluations of international conservation projects carried out by teams of visiting experts who may only visit the area for a brief period.

Internal assessors: Self-assessment has the benefit, particularly if written into a management plan, of being seen as a regular and useful part of on-going assessment and adaptation of management, and ensures staff spend time thinking about their own performance, rather than relying on external facilitators to do this. As such, the results of evaluations carried out by staff may be more readily applied at the site than those carried out externally. However, assessments involving only those directly involved in management may lack credibility, especially if there are any controversial issues – for instance staff may be justifiably worried about criticising their superiors or identifying issues that are politically sensitive. Protected area personnel and stakeholders may have limited experience of evaluation techniques and have little time unless the assessment is written into their work schedules. The Enhancing our Heritage methodology (see Case Study IV) uses a modified form of self-assessment through partnerships between park staff and other stakeholders.

Some mixture of the two approaches may be valuable. The objectives of the assessment will help guide the evaluation system. External evaluators (consultants, academics, funding agency staff) commonly focus on questions relevant to external bodies, i.e. accountability. Internal evaluators commonly focus on issues of relevance to the managers (i.e. efficiency and effectiveness of work elements without really questioning the overall programme). If undertaking monitoring and assessment of management is built into the site's management plan the ideal scenario is likely to be that monitoring and assessment is undertaken on a regular basis by staff, with external facilitators being involved in a review of progress say every three or five years.

Participatory approaches: Protected area management practice has increasingly moved towards the inclusion of local communities, neighbours and other stakeholders in planning and decision making, and now more frequently in co-management. This participatory approach should wherever possible also apply to the assessment of management effectiveness. Ideally the assessment process should involve a partnership between many players. Depending on circumstances, this may include any of the following: local managers, senior agency managers, government agencies in different sectors, different tiers of government, local communities, Indigenous peoples, NGOs, donors, international convention staff, local experts (i.e. naturalists, volunteer workers), scientists, private sector bodies involved in management of protected areas and representatives of other sectors and interests.

There are several issues to bear in mind to help ensure effective stakeholder involvement in evaluation. In particular, stakeholders/partners should be regularly informed about:

- the planning process for monitoring and evaluation and their own role in the process;
- the opportunities to participate in the evaluation exercise;

- the issues that they will be asked for their opinion on;
- how their opinions will be used;
- how they will be informed on the progress of the evaluation and the final outcomes; and
- how the results will be used (reporting, adaptive management etc).

It is also important to consider how to manage any conflicts that may arise from the discussion of management performance. Once all the partners have been identified, it will be necessary to clarify expectations and roles, and in particular to avoid giving participants a false impression of what the assessment offers. It is also necessary to establish a team to lead the assessment. Some partners will be involved in the design and execution of the assessment system, while for others it may be sufficient to know that an assessment is being carried out and to have periodic access to the results.

For the evaluation process to be rigorous, particularly if it is based on the self-assessment approach, it is advisable to build a team of stakeholder representatives to work with managers to develop and agree the monitoring and assessment process. This team should include both key protected area personnel (e.g. the site manager) and a number of other individuals involved in management issues. Local people frequently have an intimate knowledge of a protected area but often little say in how it is managed. Their participation in the evaluation process is therefore important both because they may have information and insights not shared by managers and because their views on the site are closely bound up with its overall success. Involving partners and local people in the assessment can also help increase their understanding of the issues managers are trying to deal with and can make them more supportive of the site (this subject is dealt with in more detail in the Best Practice Protected Area Guidelines Series No. 11 on *Indigenous and Local Communities and Protected Areas*).[52]

Pressures, including underlying causes, often affect protected areas from well beyond their boundaries. Engaging a wide range of stakeholders in the assessment, including for example those sections of government and industry that influence the site, is also important, albeit likely to add both time and expense to the evaluation.

Finally, having one or more 'champions', either within a management agency or outside it, to follow through the evaluation process and to facilitate and encourage implementation will help ensure the smooth running of the process and the integration of results.

Developing a plan or terms of reference for the evaluation process

Before the evaluation process begins it is useful to develop a plan for the evaluation procedures that clearly states the issues discussed above, i.e.:

- the objectives of the evaluation (purpose, scale and scope of the process);
- the methodology being used; and
- who will carry out the evaluation and who will be involved (including team leaders, protected area staff and stakeholders/partners) and what their responsibilities will be.

Details of how it is intended to implement and communicate the findings of the evaluation (these issues are discussed in more detail in Chapter 5), should also be included in the plan, for instance:

- an outline of the final reporting and communication of results;
- mechanisms for disseminating the findings;
- mechanisms for incorporating the results into management; and
- how the material gathered and used during the assessment, and information on how the assessment was carried out, will be archived.

Plans may either take the form of a terms of reference for a project-based evaluation or can be included within, or supplemented to, a general management plan or agency activity plan when evaluation is to become part of the regular activities of a protected area management.

While a plan is important, it may be necessary to adjust and develop the planned implementation process during the assessment. At the beginning of the assessment, it may not be clear what information is available and what is important. If particular issues or challenges emerge, the assessment may have to expand to look at these in more detail; conversely there may be little point in following through plans to look at potentially controversial issues if early discussions with stakeholders find that there is little conflict. Outcome monitoring is in particular likely to change and develop as more is learnt about the site, its potential and the challenges that it faces.

[52] Borrini-Feyerabend *et al.* (2004).

Evaluation planning should include an early consideration of communication of the results. This step is critical to getting maximum advantage out of the work. In particular, there is a need to consider what material might be restricted to internal use only and what material will be publicly available. In some cases, the audience might only be the organization that requested the evaluation, but often a much wider audience is interested in the results. It may be possible to multiply the positive effects of the evaluation greatly by judicious communication. However, mismanagement of the information can just as easily have negative effects.

4.3 Implementing evaluation (Phase 3)

After the planning, the actual process of assessment is a time-limited and often quite intense exercise, followed by a process of analysis and writing up. Once underway, the finalization should be as fast as possible, so recipients of the report still remember details of what happened during the assessment itself and so that momentum and enthusiasm are maintained.

Gaining approval and support for evaluation plan

Before the evaluation process begins it is important to gain support and approval of the plan from all parties involved; this helps ensure buy-in both to the process and, at least implicitly, to any results that might emerge. It means, for example, gaining approval for the indicators chosen for measurement, the process of collecting and analysing data and the form in which the final report will be produced.

Carrying out the evaluation

The steps that are likely to be taken to complete an evaluation are summarised below and in Figure 9.

These will result in:

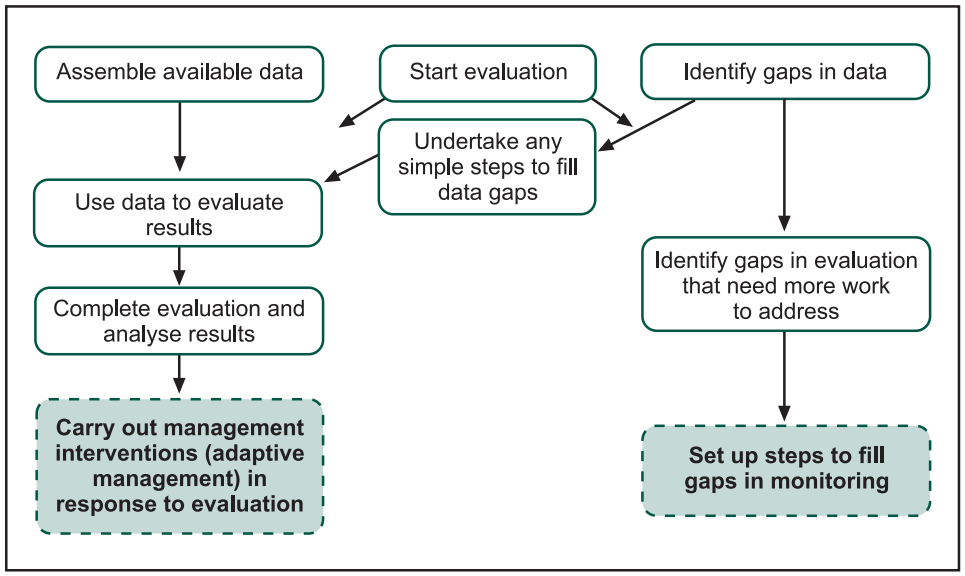
- Adapting and improving management, making new or better interventions in response to the assessment results (see Chapter 5)
- Development of long-term monitoring programmes where gaps exist (see Chapter 3)

Information used in the evaluation can come from a variety of sources. Data collection involves extracting relevant information from key sources such as monitoring reports, research projects, management plans, biological surveys and sighting records, annual operation plans and visitor records. If there is not an appropriate monitoring programme in place then the evaluation will inevitably be incomplete. However, it will still provide useful information for management. As monitoring systems are improved, assessments will be able to draw on better information.

Consultation with stakeholders will range from individual interviews through to small meetings or workshops. Usually consultations take place at the beginning of the assessment, to help to gather information and compile the draft evaluation and towards the end of the process as a forum for discussing and revising the draft evaluation. For the latter, it may be necessary to simplify or translate the preliminary evaluation results into local languages for some stakeholders to ensure their input.

Finally, it is important when undertaking the evaluation to adequately record the sources of the data, to record, if possible, data strengths and weaknesses, and to ensure that source data is archived and can be referred to in subsequent evaluations.

Figure 9. Steps taken in the evaluation process



5. Analysing and communicating results of evaluation

Evaluation is only worth doing if it results in more effectively managed protected areas; in other words if the results of an assessment are first *interpreted* to identify some practical lessons and then *acted upon*. Although this sounds obvious it is by no means always applied in practice. Many assessments remain as partially completed exercises or locked away in reports or academic papers that have few positive impacts for the protected areas or biodiversity conservation. Unused studies undermine future evaluation because they frustrate the staff members and other stakeholders who have devoted time to help assessors, and make it more difficult to raise funds for monitoring.

Good evaluation should therefore include a period of reflection to work out the implications of what has been learned, leading to some clear recommendations for action. In most cases assessments also require the careful reporting of results. This chapter looks at the final phase (phase 4 in the evaluation process illustrated in Figure 8). It is divided into **four** sections: looking at the importance of proper **analysis** of the results, leading to appropriate **recommendations** and then to **communication** and **implementation** of the resulting recommendations (i.e. adaptive management).

5.1 Analysing the results

Most assessments draw on information that has been collected over time through various forms of monitoring (see Chapter 3). Monitoring is generally expensive in terms of time or money and the data collected only becomes useful once it has been evaluated. Evaluations seek to interpret available information, looking at trends and implications (particularly when assessments can be compared over time) and to find causal links and relationships between context, planning, input, processes, outputs and outcomes. Given the expense involved, monitoring systems should be tailored to fit the needs of assessments to make sure that the most useful information is collected.

Most assessments will draw on and in turn produce a large mass of data that can initially appear quite unrelated. If an assessment is one of a series over time then the quantity of the information increases even more and can produce enough facts and figures to keep researchers working for years. However, assessments are primarily practical tools for managers and results are most useful if they can be produced fairly quickly. A balance is needed between the richness of the information and the speed at which it can be assimilated: a combination of approaches to both presentation and analysis of results is often desirable. Some options are outlined below:

- The first level of analysis is a simple **compilation of collected data**, either for one site or across sites, usually in the form of tables and graphs. Many users will want the raw data for their own analysis; putting this together in an easily usable form means that the survey can be reassessed later by other users who are looking for different information or who are compiling broader-based studies.
- Some evaluators find a **'SWOT' analysis** a useful tool for analysing information further, usually carried out in a workshop with agency staff and/or other stakeholders. SWOT stands for "*strengths, weaknesses, opportunities and threats*" and involves categorizing data and initial assessments under one or another of these headings. This method can provide a quick summary of management effectiveness in a format that is appropriate for communication with busy upper-level managers and politicians and is also a valuable way of identifying next steps for management.
- Many evaluation systems use simple **scores**, which summarise a lot of data into one number. Scores provide a quick and easy way for an audience to determine comparative conditions. Examples can be seen in the evaluations discussed in the RAPPAM method and World Bank Tracking Tool (see Case Studies II and VI). While protected area managers generally want more detailed reporting, quantitative data and analysis, scores are attractive to policy makers and NGOs as they give an instant overview of relative success and a way of comparing protected areas. However, scores risk over-simplifying complex issues, distorting results and being misinterpreted by those both supportive of or opposed to a particular protected area. Some

explanation should therefore accompany "scorecard" reports. Some of the best systems using scoring are accompanied by a large amount of supportive data. For instance, Parks Canada reports its system of ecological monitoring in a very simple diagrammatic form, but this draws on a large amount of information that is also available to those who want to look deeper.[53]

- Results of assessments can also be measured against **agreed standards**, which might vary from numerical targets (for instance relating to populations of key species) to descriptive conditions. In total, carefully selected targets and standards should provide a reasonably good picture of overall conditions in the protected area. This means that it is important to choose a broad and balanced list of targets; if elements are omitted then assessment is similarly likely to miss important aspects of overall protected area condition. Attainment of standards is also seldom clear-cut and usually requires value judgements by assessors or inspectors. The Nature Conservancy's Conservation Action Planning (CAP) methodology is an example of an approach that employs carefully selected targets both to plan management of a site and as the basis of monitoring progress.[54]
- It may be possible for more advanced **statistical analyses** to be conducted, looking at trends in data and attempting to draw out broader patterns. However, the resulting statistics will only be as good as the data that they draw upon. Manipulating results through summing and averaging, or assigning weights to different indicators, and through the use of scales and indexes can give misleading results, particularly if the data are limited in either quantity or quality. In particular, any qualitative data that is turned into quantitative data should be treated with care and its limitations fully recognised.

Comparative analysis

Analysis is often strengthened by looking at changes over time or space; such as by comparing several protected areas within a system or measuring how the effectiveness of a single protected area changes over time.

Comparison between protected areas can be valuable but needs to be treated with caution, particularly if different assessors have been involved (or even different assessment systems). The WWF RAPPAM system is designed to assess all the protected areas within a country or district, in a workshop situation where managers provide a certain amount of peer review for each other (see Case Study II). Comparisons are useful for identifying trends (including for instance common threats or weaknesses) that may need to be addressed at a systems level and also to identify protected areas that are particularly stronger or weaker than average. Comparing between countries also provides interesting data but here the risks of distortion are comparatively greater and results should always be treated with caution.

Comparing individual protected areas over time is probably more valuable. It is usually worth repeating assessments at intervals to check on progress and to identify trends. Several protected area systems are now developing 'State of the Parks' evaluations that they intend to apply every few years; Metsähallitus Natural Heritage Services in Finland published the first of what are intended to be five-yearly assessments in 2005 (see Case Study V) and Parks Canada has already published several editions of its ecological monitoring studies. Except in the case of special-purpose single-event evaluations, repeat evaluations are almost always desirable and it is important to adopt an assessment system with low enough costs to allow this. Very simple assessments could be applied annually, while more expensive, time-consuming exercises will probably only be worth undertaking every few years. Assessment does not need to cover all aspects, every single time. For example, most protected area managers will wish to track implementation of management plans and work plans quite regularly, and evaluations are often required at a regular basis for specific projects within protected areas.

The desire to compare between evaluations over time is sometimes in conflict with the opportunity to improve the assessment system. Evaluation is itself a learning experience, and better indicators, changed circumstances, and access to improved technology will all tend to shape evaluation projects over time. Participatory evaluations, by their nature, need to be flexible and respond to people's needs and perceptions. However, changing methodology or indicators will obviously make it much more difficult to compare results over time. This is an inevitable tension and there is no sure way of addressing the problem. In general

[53] Stephen Woodley, pers.comm. (2004).

[54] The Nature Conservancy (2000).

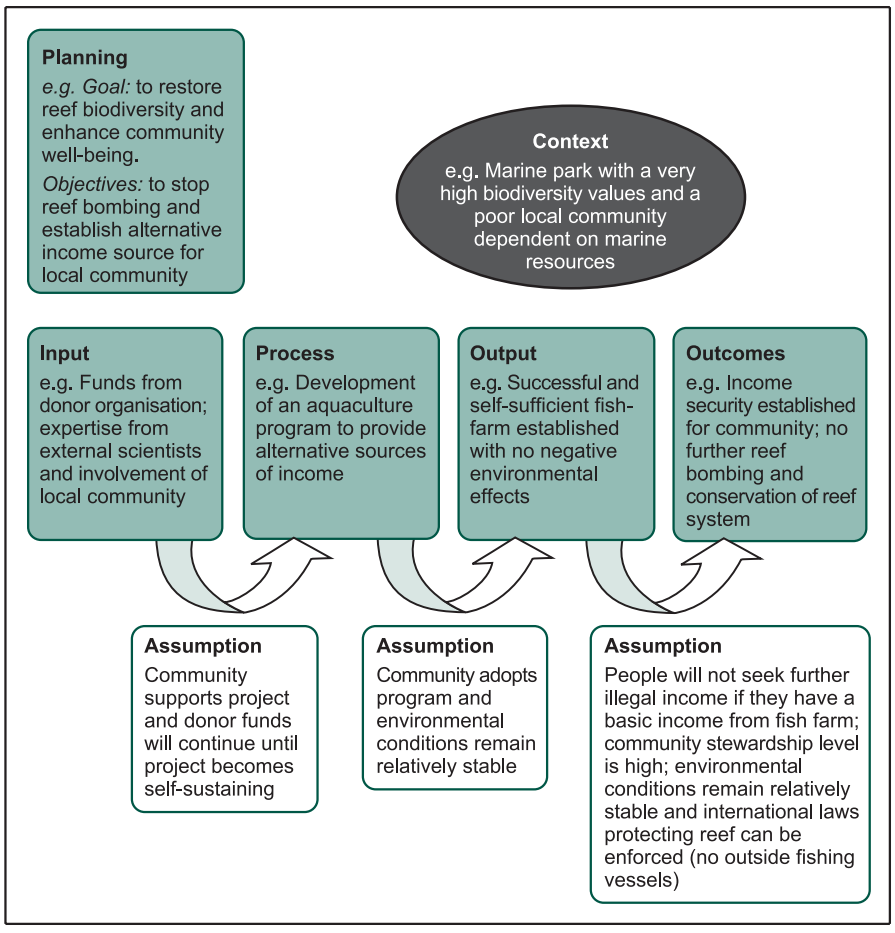
changes should be minimized to those that are really important, and statistical and other possible adjustments made to help keep results comparable.

Explaining results

An assessment of all six of the elements in the IUCN-WCPA Framework should provide information on both the extent to which management is achieving its own targets and on the effectiveness of the protected area in maintaining biodiversity and other values. An important part of the accompanying analysis should be to identify the extent to which measured outcomes are due to management interventions or to other factors, which may be beyond a manager's control. It is possible to have a well-managed protected area that still loses biodiversity (for instance because of climate change) and conversely even quite inefficiently managed protected areas may in some circumstances still maintain their values. It is important to understand the causes of success or failure of management: without such an analysis attempts to improve performance may be ineffective.

Evaluation can help show the effectiveness of management and indicate trends in biodiversity but does not necessarily explain *why* certain changes occur. For example, fluctuations in populations of particular species could be due to natural cycling or the result of factors such as encroachment, disease or changing weather patterns. Increased arrests of poachers could be because enforcement has improved or because there are more poachers to catch, and so on. A good evaluation system will provide sufficient data to help explain changes, giving us some ideas as to why outcomes have been achieved or not achieved. Information about context, planning, inputs, processes and outputs help interpret to what extent outcomes are due to particular interventions. Evaluation will often turn up particular questions or problems that require dedicated studies of their own. Explaining results is sometimes easier if evaluators use a simple model. Figure 10 gives an example that links the six elements of the management effectiveness Framework for a marine protected area, showing how different elements are linked, what assumptions have been made and what factors could influence outcomes.[55]

Figure 10. Assumptions linking the elements of the management cycle



[55] Leverington and Hockings (2004).

People trained in scientific or other disciplines that put high value on analysis often forget how long it took them to learn the associated skills; they assume that everyone will be able to draw meaningful lessons from masses of data. This is not true, so data interpretation is an important part of a good evaluation. Ideally interpretation should involve staff involved in management but if necessary outside experts can be used; in the latter case they should devote time to explaining not only the lessons learned but also how these have been deduced.

5.2 Drawing conclusions and recommendations

The evaluation should conclude by drawing together some key *conclusions*. The conclusions in turn should lead on to a series of *recommendations* for the protected area manager and perhaps also for the protected area agency or managing body. Recommendations should:

- ensure that any advice is clear and specific enough to improve conservation practices and realistic enough to ensure feasible solutions are found for priority topics.
- include short- and long-term priorities and a timescale and budget (with additional funding needs where required). Short-term actions should be clear, concrete, achievable within time and resource constraints, and prioritized. Long-term recommendations should identify resource and policy changes needed for their implementation.
- feed back into management systems to influence future plans, resource allocation and actions. Evaluations that are integrated into the managing agency's culture and processes are more successful and effective in improving management in the long term.
- focus primarily on actions for the manager and rangers but where necessary also identify responses needed beyond the park boundaries.
- be monitored, through annual work plans and also future assessments, to check whether identified actions have been undertaken and also (not the same thing) whether these have been successful in addressing challenges.

Findings and recommendations of evaluations need to feed back into management systems to influence future plans, resource allocations and management actions. Evaluations that are integrated into the managing agency's culture and processes are more successful and effective in improving management performance in the long term. The NSW NPWS Case Study (VII) illustrates how the IUCN-WCPA Management Effectiveness Evaluation Framework has provided the foundation for development of a broader Park Management Framework, which aims to deliver this integrated approach.

The recommendations from an evaluation will usually be more complex than a simple list of jobs to be done. They may include the need to fill gaps in knowledge, for instance by extra monitoring, research projects or through reference to experience in other protected areas. If the assessment throws up serious gaps in our understanding that need to be filled by monitoring, actions may include adapting the assessment process itself.

Perhaps most fundamentally, assessments sometimes need to address more basic issues such as the management objectives of the protected area or the aims of management. Particularly in the case of long-established protected areas, management priorities may have changed over time or perhaps never been set very clearly. In these cases assessors might suggest that managers step back a little and look at management objectives and accompanying management plans.

5.3 Communicating and reporting results and recommendations

Reporting the results of an evaluation can pose considerable challenges for park authorities. The form of the report depends to a large extent on why the assessment was carried out, but it should be remembered that any written report accessible to the public can and probably will be used for a variety of purposes. Planning the assessment should include an early consideration of communication and of the audiences for the evaluation (see Chapter 4). Possible methods of communication include reports in hard copy and on the internet, attractive publications and brochures to increase public interest, presentations to managers, decision makers, interest groups and other stakeholders, field days and special events, media coverage and displays.

- The simplest presentation is a **verbal report** from the assessor to protected area staff or managers, or others who have commissioned the evaluation. A good assessor should be able to include initial analysis within a verbal report. Such an approach is seldom enough in itself – and some more permanent record of the assessment should be available – but is valuable in that it allows

immediate questions and feedback, which in turn can influence the final written report. A verbal presentation is often a good way of getting results out to the people who matter as quickly as possible. In cultures where oral presentations are given more weight than their written equivalents, the verbal report may be the form in which most users receive the results and it is therefore important that this also contains key recommendations and suggestions for adaptive management.

- Verbal presentations can be greatly strengthened by providing speaking notes, **PowerPoint** presentations or overheads. These are particularly valuable if some of the audience are not hearing the presentation in their first language as it will help them to follow what is being said. A PowerPoint can be printed as a permanent record, or passed to other people in electronic form. If assessors leave behind a good PowerPoint presentation it can also be used by people who have heard the presentation to summarise results for other audiences.
- **Written reports** are usually an important part of evaluation. Many reports effectively remain as internal documents for protected area managers and local stakeholders. Part of the process of building institutional support for assessment is making the reporting process a standard part of management rather than greeted with particular fanfare. Reports addressing more controversial issues are likely to attract greater interest. Assessments are increasingly likely to be used as the basis for international reporting to institutions such as the Convention on Biological Diversity.

Whether a report is primarily intended for park managers or for the public, it should usually have a number of standard components:

- A clear summary including key conclusions and recommendations;
- An introduction that lays out the context of the assessment, why it was carried out, the methodology used and people consulted;
- A summary of data and analysis (where the data sets are very large this may be in summary form only or accessible in simple form through the web or on request);
- Clear analysis including a description of how this was carried out;
- Detailed recommendations.

Analysis should include identification of strengths and weaknesses of management, along with recommendations about how these could be improved. But in many cases it is also worth including consideration of limitations and flaws in the assessment process itself and recommendations for improvements in the future.

Several reports or presentations with different levels of detail for different audiences might be appropriate for one evaluation; for instance a summary report or a press release may be more useful to some readers than the full document. Method of presentation, language and terminology used in evaluations should be commonly understandable, though more technical language will be appropriate for selected audiences. Use of electronic publishing and the internet has helped to spread information more widely; for instance in Finland Metsähallitus has set up a dedicated web page for its evaluation report. The internet can be particularly appropriate for regular reporting and for large amounts of information where people are likely to want to see only a fraction at one time. Distribution of some hard copy reports is often needed in addition.

The politics of reporting is complicated and can backfire. Political problems have arisen in several reporting exercises. For instance in Brazil problems arose when agency staff felt they were being openly criticised and in New South Wales, Australia, a generally positive report on the state's protected areas was selectively quoted in a hostile article by a local journalist. Distorted publicity can be used to undermine support for protected areas. However, such challenges face any institution reporting on their performance and careful management can minimize risks of misrepresentation or political backlash. Key steps include:

- Involving all participants in an assessment so that they know the contents of a report and have had a chance to comment before it becomes public (which doesn't mean that the assessors should necessarily accept all comments);
- Ensuring that the protected area agency has a clearly identified strategy for addressing key concerns and implementing recommendations before the report is released;
- Trying to ensure a public release to many people rather than leaking the results gradually over time (although this may conflict with the need to involve stakeholders).

Generally transparency is the best option. But this does not necessarily mean that everything should be public. Careful thought needs to be given to what results

should be reported outside a 'confidential' audience: for example, scores or comments that relate directly to individuals might be grouped or otherwise reported to avoid potential repercussions on participants and the undermining of future assessments.

Evaluators should also be aware that spending months to conduct detailed analyses and produce attractive reports might be futile if the evaluation is out of date by the time it is disseminated. "*Note that if early results show that current management is failing to achieve the objectives, it is essential that decision makers get the facts [in a timely fashion]…and know what needs to be done to improve management. If the results of evaluations don't get back to and influence those who can change ongoing management, the benefits of the evaluation can be lost.*"[56]

5.4 Implementing recommendations

The main purpose of protected area evaluations should be to encourage and strengthen adaptive management. Implementation is in the form of actions such as responding to threats, increasing local participation or strengthening financial management. Although we tend to think of adaptive management as something involving primarily protected area managers and their staff, some actions may also be needed at a higher level, for example within a protected area agency or government.

Two key factors determine whether evaluation findings will make a practical difference to management: (1) a high level of commitment to the evaluation by managers and owners of the protected areas and (2) adequate mechanisms, capacity and resources to address the findings and recommendations.

Commitment or willingness to change

Depending on what aspects of protected area management the evaluation has identified as needing improvement – or as being vital to continue – the cooperation of a range of people and institutions might be needed to improve management effectiveness. This may not be the responsibility of the evaluation team, but the step of identifying who should be responsible for implementing each recommendation is important. There may need to be considerable thought put into how the relevant people can be not only informed, but where necessary persuaded or obliged to do their part in improving management. This is often a 'missing link' in ensuring that evaluations lead to better management – for instance if on-ground staff are keen to see improvement but senior staff block changes, or vice versa – little might be achieved, even if the capacity for improvement is present.

A few examples of mechanisms to gain commitment are shown in Table 8 (note that some will be appropriate only for organizations which are free to engage in public and political advocacy).

The success of implementation relies on the support of protected area staff at all levels, who need to see the assessment as a positive tool for them to use rather than a judgemental interference in their work. In "learning organisations" adaptive management is seen as a normal process and people are keen to learn from mistakes or problems. However, such a perception is easier to write about than to achieve and experience suggests that in many situations staff initially react quite negatively to the idea of assessment. Support comes gradually over time and once positive benefits are seen. Reporting correctly and sensitively is a key element in this process of building trust.

Capacity development

Apart from willingness and commitment, *capacity* is the other primary factor influencing the extent to which the recommendations of evaluations are implemented. Capacity includes knowledge and skills; and availability of resources including time, money, equipment and facilities.

When capacity seems likely to be a limiting factor in improving management effectiveness, several approaches are possible:

- Shortcomings in skills and knowledge can be addressed by targetted training; assistance from volunteers; and cooperation with external scientists or other partners;
- Additional resources (additional government funding or external funding; donated equipment etc) can be sought from a range of sources. The evaluation findings should assist in identifying the needs and in showing how additional resourcing will improve management;
- Existing resources can be reallocated to different tasks or areas according to recommended priorities;
- Cheaper or less resource-hungry methods of carrying out some management activities can be sought. For example, sometimes sharing of equipment, facilities or human resources can be very efficient; and

[56] Jones (2000).

Table 8. Examples of strategies to ensure recommendations are implemented

Identified need for change	People responsible	Possible mechanisms
National/ high-level policies, plans, legislation or activities are not assisting good management	Politicians, high-level decision-makers, advocacy groups	Political representations in appropriate manner; public awareness-raising
Size or design of the protected area or system needs improvement (e.g. through further acquisition of land)	Senior management staff, local communities, politicians, funding organisations	Representations to funding organisations, public awareness- raising and advocacy; good scientific evidence.
Overall resourcing of park or system is inadequate	Management agency, funding organisations, or government treasury (depending on level of problem)	Reporting of values, issues and recommendations. Representations through appropriate means – may include public advocacy
Allocation of resources, management standards, planning and protected area policies need to be improved	Senior staff in management agency or other management partners	Gaining support from most senior executive or relevant Minister; ensuring senior staff are well informed and understand the changes needed and the likely benefits. Writing changes into contracts or work agreements
Management objectives need to be altered to better reflect values and threats	Management staff, support staff (all levels) and community	Write changes into management plans, guidelines and work programmes
Some accepted activities and guidelines do not lead to desired outcomes and need to be altered	Management staff, support staff and community	Write changes into guidelines and work programmes. Explain and gain support from management staff and interested or affected community members

- It can be accepted that some recommendations, while worthwhile, may not be implemented immediately, but can be kept in mind if capacity increases.

An important output from an evaluation process can be a capacity development plan. Directly basing such plans on evaluation results can result in a useful and robust approach to improving actual management effectiveness, by:

- *Ensuring relevance*: The assessment ensures that actions to strengthen capacity focus directly on the most debilitating management weaknesses and urgent threats.
- *Identifying priorities*: Depending on the scale of the evaluation, it may result in a prioritisation of the most vulnerable and threatened protected areas in a system.
- *Engendering support*: By engaging with key stakeholders throughout the process of assessing management effectiveness, prioritising relevant capacities, and developing an inter-institutional plan, this approach encourages broad-based support among multiple actors.

Field monitoring © *Robert Ashdown, QPWS*

Strengthening capacity to effectively manage national protected area systems Experiences from Mexico

Management effectiveness assessments can provide a means of focussing capacity investments on key conservation issues. Methodologies which focus on assessing national systems of protected areas (such as RAPPAM) link the most urgent threats and relative biological importance of individual protected areas into national prioritisation exercises for conservation actions.

The Mexican Protected Area Agency (Comisión Nacional de Áreas Naturales Protegidas), Pronatura, TNC and WWF, are designing a national strategy to strengthen protected area management based on an integrated assessment of capacity needs and management effectiveness. Pronatura, a Mexican NGO with extensive expertise in protected areas, social issues and evaluation methodologies, is coordinating the effort. Mexico's objectives for designing their national capacity strengthening strategy are to:

- Achieve broad consensus on the highest priority capacity-development needs.
- Design a plan with broad ownership of different public, NGO, and community actors for strengthening capacity to address those needs.
- Fulfil their commitment to the Convention on Biological Diversity's Programme of Work on Protected Areas.

This process includes a series of seven regional workshops with preparatory interviews beforehand. These regional workshops will identify:

1. Trends in threat, management weaknesses, and relative biological importance.
2. Key conservation issues that need to be resolved based on these factors.
3. Capacities needing strengthening to be able to resolves these issues.
4. Opportunities and activities for addressing these capacity needs.

A national roll up of the seven sub-national workshops will identify common needs that can be best addressed by nation-wide activities. The result of this process will be a national and series of sub regional inter-institutional work plans to strengthen effective management of the national protected area system.

6. The way forward: guidelines, needs and directions

The previous chapters have introduced the concept of management effectiveness and the IUCN-WCPA Management Effectiveness Evaluation Framework; suggested some steps in designing and implementing an evaluation exercise; and summarised principles for interpreting the results and using these to help improve management.

As discussed in these chapters and illustrated in the case studies and suggested readings, there have been great advances in the theory and practice of evaluation since the first edition of this Framework was published in 2000. A large number of people around the world have been involved in this process. The work being undertaken by colleagues in protected area management agencies, NGOs, donor organizations, universities and other institutions throughout the world is rapidly advancing the art and science of evaluation and their contribution is acknowledged.

However, people working in the field also recognise that there are still significant gaps in our understanding and in the practice of management effectiveness assessments. For example, there are identified needs for improved methods for rapid assessment of ecological integrity; for understanding social, cultural and economic impacts; for ensuring assessments are participatory; for better data storage and sharing; and for linking to other initiatives such as state of environment reporting.[57]

This chapter briefly outlines what we think should be the major directions for development of management effectiveness evaluation over the rest of this decade, and summarises some of the current progress towards these aims. We also present some guidelines for conducting evaluations (see box). The recommendations in this chapter draw from a wide pool of expertise, having been compiled from a number of international fora over recent years – most significantly activities connected with the Vth World Parks Congress, a major meeting of people involved in protected area management from around the globe held in 2003.

Make evaluation part of 'core business'

There is broad agreement that management effectiveness evaluation needs to become more systematic and better incorporated into the regular and required work of protected area agencies. Organizations throughout the world need to move from experimentation and opportunistic tests to committed assessments. As discussed in chapters 1 and 2 and shown in the case studies, there are many signs that this is already happening.

To support the better adoption of management effectiveness evaluation, the IUCN-WCPA, NGOs, park management agencies and academic institutions are cooperating to further develop methodologies, to train and support staff across many countries, and to share and compare information.

While these developments are very positive, barriers to the implementation of management effectiveness evaluations remain in many agencies, including the lack of a conducive environment for undertaking assessments, the absence of an 'assessment culture' in many areas, a lack of understanding of and support for assessments by communities and protected area staff, and fear of the political and sometimes controversial nature of assessments. A major aim for the next few years is to build on the experience of the small number of protected area agencies who have pioneered incorporating transparent assessments into their organisational culture and business cycle.

Improve coordination and rationalization of assessments and compile data

As discussed earlier, there are already a number of different assessment systems available for adoption in different parts of the world and for different purposes. It is important to have a clear understanding of the purpose and utility of each system before beginning assessments. The system selected has to match the needs of the country or the site. It is hoped that this revised Framework will provide some assistance to people in selecting and developing suitable systems.

[57] Hockings *et al.* (2004).

Problems can arise when donor organizations require specific systems to be implemented to track a project's progress. As many protected areas have several donor run projects running at any one time, this can sometimes result in several different assessment systems being used in the same protected area at the same time. This can lead to confusion, frustration and ineffective use of resources. It is suggested that it is more effective for countries to adapt systems to fit their needs, or to build from assessments already occurring to meet the needs of donors. Some coordination between donor organizations may also be needed.

To assist in the best use of data and coordination of effort, there are plans to develop international datasets which will allow comparison and wide interpretation of information. Appropriate safeguards for confidential and sensitive information and acknowledgment of data ownership will be essential. A system to link management effectiveness information to the World Database on Protected Areas is planned.

On a more local scale, good management of information has been identified as a major issue for monitoring and evaluation. Frequently, valuable information and critical insights in relation to protected area management are not communicated to the managers, or are lost with staff changes or the death or departure of knowledgeable local people, scientists or NGO workers.

Further develop cost-effective, meaningful monitoring systems and indicators

While great progress has been made in recent years, more work needs to be done to:

- Assess **ecological integrity** in ways that are meaningful but achievable. This involves further research and testing of the best ways to choose which values should be assessed, and to develop and measure indicators (see Chapter 3). In particular, practitioners have expressed a need for relatively rapid methods to monitor the state of biodiversity values.
- Monitor the conservation of **cultural values**. This topic is generally regarded as lagging well behind the establishment of protocols and indicators relating to natural values.
- Assess the impacts of protected on surrounding communities. The development and use of **social and economic indicators** still requires substantial work and these factors are often neglected in outcome assessments. Of particular importance to local and Indigenous communities are the recognition and maintenance of traditional rights and land tenure, the existence of effective dispute resolution mechanisms, involvement in management decision-making processes, and the incorporation of traditional ecological knowledge into planning.

Find more effective ways to engage managers and communities

The importance of having adequate participation in assessments has been raised repeatedly as an issue by people working in the field. Even where assessments are carried out to meet specific needs of donors, governments, senior management or external parties, many of the potential benefits can be lost, and results may be inaccurate, if there is inadequate involvement of people living in and around the protected area, who are often most knowledgeable about many of its values. There have been some very successful examples of partnerships with local and Indigenous communities in terms of biodiversity monitoring, particularly of species where people have a direct interest, such as non-timber forest products, fish stocks in marine protected areas, or problem animals.

The advantages of broad participation have to be balanced with the additional time and cost, and with possible concerns about information confidentiality. Protected area managers are sometimes reluctant to seek inputs from too many external stakeholders. There are also dangers of raising expectations unrealistically; if people are asked their opinions this will raise expectations that may not be met in practice. However, as a general principle we need to find better ways to ensure that the right people are involved and that assessments are supported by managers and the community, rather than being seen as an imposition from outside.

Look for common threads

As results from many assessments – from South Africa to Russia; from Costa Rica to Australia – become available and common datasets are developed, it is time to begin drawing threads together and finding what common themes emerge. What are the major emerging threats to protected areas? In different countries, regions or biomes, to what extent are protected areas conserving biodiversity? Is this projected to change in the coming decade? Are protected areas helping Indigenous and local peoples to conserve their culture and to make a living, or are they causing more hardship?

Individual protected area assessments have been used to help adaptive management for some years. We are now reaching the stage when enough information is available

to inform policy aimed at improving management at regional and global level as well. A global survey of management effectiveness is underway and in particular, we will be looking for trends in what characterises successful and efficient management of protected areas.

Make a difference - ensure results are interpreted, communicated and used

As discussed in Chapter 5, assessments that are not interpreted, communicated to the right people and used to improve management are worse than useless, as those involved may be frustrated by the process and thus unwilling to participate in future evaluations. All those who require or initiate assessments need to ensure that the results are not buried in unread reports or emails, but are instead carefully interpreted, communicated in meaningful and culturally appropriate ways to the right people, and used to make a positive difference to protected area management.

In some cases it appears to be unclear who should take responsibility for communicating finding and for using the results to initiate change. For example, senior agency managers have been known to dismiss assessment exercises as a waste of time because there has been no resultant improvement, when in fact results were never communicated to field managers. As discussed in Chapter 4, the final and crucial stage of management effectiveness evaluation needs to be planned for in the initial assessment plan, in the reporting stage and at every stage in between. We are concerned that while there is certainly growing enthusiasm for undertaking assessment exercises; this has not yet been matched to the same extent by efforts to integrate results back into management.

The issue of working with evaluation results which are less than totally positive remains a challenge. While many organisations in theory embrace greater accountability and openness, in practice no senior manager or politician wants to be seen as ineffective. Evaluators need to work with managers and others to ensure that reasonable and helpful ways are found to work with such information. Time series data demonstrating gradual improvement can help gain support by showing progress, even though desired levels of performance have not yet been achieved. Incorporating all six elements of the IUCN-WCPA Framework in the evaluation can also be important in gaining a full understanding of the constraints under which management is operating. In reality, most reasonable people understand that the challenges facing protected area managers are significant and that perfect performance is an almost impossible, if laudable, objective. Indeed, a management effectiveness evaluation which claims to show perfect or near perfect performance across a protected area system is likely to lack credibility in the eyes of many people.

Conclusion

The world in the 21st century is experiencing dramatic changes – from climate change and the invasions of pest species to expanding communication networks and more complex governance structures – and we expect these changes to become even more frequent. We believe that protected areas can be a successful strategy for conservation even though they might be subject to adverse weather events, fragmentation, pressures from increasing populations, greater demands for resources, changing social attitudes, and violent conflicts raging around and even within them.

Effective protected area management in the future will depend on an ability to anticipate, respond, and adapt to changes both locally and globally. Communities, NGOs and government agencies need to cooperate, but our response times have to be rapid – we cannot afford to take years to reach agreement, to change things that don't work, or to react to new challenges. This does not mean that we lose sight of the core reasons for which protected areas exist: conservation of park values for posterity requires that we effectively manage and protect key attributes for which the parks were declared. We need to build on the best ideas and practices of the past and combine them with inspiration, innovation and initiative for the future.

Evaluation of management effectiveness provides a vital mechanism for this approach to management: it encourages us to learn from both our successes and our mistakes, to adapt and change good ideas to suit our local circumstances, to cooperate with all the partners in management, and to have an open, enquiring attitude so we can respond to any challenges which come our way.

It is hoped that this Best Practice Guideline and other IUCN-WCPA initiatives in management effectiveness evaluation, in conjunction with the excellent work being undertaken by numerous colleagues across the world, will help managers to build stronger protected areas for the future.

Guidelines for evaluating management effectiveness of protected areas

The following guidelines have been adapted from the first edition of this publication and added to from some of the key 'lessons learnt' by practitioners in management effectiveness evaluation over the past five years.

Evaluation is part of an effective management cycle

Effective evaluation needs a high level of support and commitment from protected area management agencies as well as from other parties involved. Evaluation of management effectiveness should be incorporated into the core business of protected area agencies.

Assessments can benefit from being based on a credible and tested Framework

- A consistent and accepted approach such as the IUCN-WCPA Framework provides a solid theoretical and practical basis for developing management effectiveness assessment systems, and enhances the capacity to harmonise information across different systems.
- Evaluation exercises that assess each of the six elements in the Framework and the links between them are most desirable, as these build up a relatively comprehensive picture of management effectiveness. This kind of evaluation is regarded as having greater 'explanatory power'.

Management objectives and standards are needed

- It is critical that the key values, management goals and objectives for the protected area have been spelt out clearly. Standards against which inputs, processes and outputs can be judged are also important.

Evaluation works best with a clear plan

- A clear purpose, scope and objectives for the assessment are needed. It is important at the beginning of an evaluation project to know exactly what it is expected to achieve, and to understand the levels of resourcing and support that can be expected. Agreement among all partners on criteria, assessment objectives and broad questions is important before a more detailed methodology is selected or developed.

The methodology needs to suit the purpose

- We should learn from others and use or adapt existing methodologies if possible. Methodologies should be as compatible as possible.
- Tools need to be appropriate and responsive to needs. Flexibility should be retained – an iterative approach is helpful. Methodologies should be improved over time.

Indicators need to be carefully chosen

- Indicators need to be as cost-effective as possible. It is desirable for indicators to have some explanatory power, or be able to link with other indicators to explain causes and effects. Social, economic and cultural indicators as well as those related to natural systems are needed.
- The limitations of indicators need to be understood. There is a danger that evaluations can over-simplify reality by interpreting indicators to mean more than they really do.

Good communication, team-building and stakeholder involvement is essential in all phases of the project.

- Gaining approval, trust and cooperation of stakeholders, especially the managers of the protected areas to be evaluated, is critical and must be ensured throughout the assessment. Assessment systems should be established with a non-threatening stance to overcome mutual suspicion. If the evaluation is perceived to be likely to 'punish' participants or to reduce their resources, they are unlikely to be helpful to the process.
- Care needs to be taken to ensure all stakeholders have an opportunity to express their viewpoints.

A long-term evaluation plan with a good monitoring programme is preferable

- For all except special-purpose single-event evaluations, it is desirable to repeat similar measures at intervals. Standardized reporting allows comparisons across sites, across time, and to meet multiple reporting requirements. The system should be capable of showing changes through time.
- Evaluation of management effectiveness is best if it is backed up by robust, long-term monitoring.
- Evaluation must make the most of what information is available (where necessary, interpreting qualitative and anecdotal information), and should drive the establishment of a future monitoring programme, which is targeted to find out the most critical information.

Evaluation findings must be communicated and used positively

- Advice from evaluation needs to be clear and specific enough to improve conservation practices and it needs to be realistic, addressing priority topics and feasible solutions.
- Adaptive management and action learning approaches work on the philosophy that the assessment process itself it is vital learning experience, which enhances and transforms management. Evaluation often has impacts on management well before a formal report is prepared.
- Short-term benefits of evaluation should be demonstrated clearly wherever possible.
- Assessment planning should include an early consideration of communication and of the evaluation audiences. The way that findings are reported must suit the intended audiences. Timeliness of reporting is critical to making it useful.
- Evaluations should spell out need for planned change or should encourage reinforcement of what is going well at site or organizational level.
- Recommendations should include short-term actions, which are clear, concrete, achievable within time and resource constraints and prioritised; as well as long-term and other recommendations that enable managers to take advantage of potential increased resources and opportunities.
- Evaluation findings, wherever possible, should be positive, identifying challenges rather than apportioning blame.
- Findings and recommendations of evaluation need to feed back into management systems to influence future plans, resource allocations and management actions. Evaluations that are integrated into the managing agency's culture and processes are more successful and effective in improving management performance in the long term.
- Two key factors that determine whether evaluation findings will 'make a difference' are:
  - a high level of commitment to the evaluation by managers and owners of the protected areas; and
  - adequate mechanisms, capacity and resources to address the findings and recommendations.

7. Case studies

7.1 Introduction

This second edition of the IUCN-WCPA Framework includes seven case studies (we could have included many more). Each of the studies is of an assessment system that has been widely implemented, and which draws upon the Framework discussed in the pages above. Together these approaches have been used to assess over 2,000 protected areas worldwide. Indeed, it was partly the wealth of new experience gained from using the Framework and various associated approaches over the last few years that gave impetus for this second edition. All of the authors of the current edition have been involved in using at least one of the methodologies discussed below, and many of those either organizing assessments, taking part in assessments or managers of parks that have been assessed have taken part in workshops considering best practices and lessons learned from assessment and evaluation. We have aimed to include their experiences and insights in the pages above.

Further details of the approaches described and available reports on these evaluations can be found in the resources section which follows the case studies. The resources section also includes information on other assessment approaches that have been developed; we could have filled several volumes of case study material!

The case studies provide examples of several different types of assessment, undertaken for different reasons and by a range of organizations, including NGOs, donors and government agencies. An example of a detailed site-level assessment, aimed at building monitoring systems and long-term understanding of management in individual protected areas, is given in Case Study IV: the Enhancing our Heritage system being developed for World Heritage sites. Case Study I provides details of how this system was adapted for marine protected areas in the Western Indian Ocean.

An example of a site-level system built around a quick-to-use questionnaire and scoring tools, which is aimed at being applied in multiple sites, is given in Case Study VI: the World Bank/WWF Tracking Tool.

Approaches to assessment developed specifically for use on a system-wide scale are illustrated in Case Study II: the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology. This system was adapted for use in the assessment of Finnish National Parks, which is detailed in Case Study V.

Case Studies III, Catalonia (Spain), and VII, New South Wales (Australia), provide examples of tailor-made assessment approaches developed for regional protected areas using the IUCN-WCPA Framework and drawing on the experiences of other assessment approaches.

Case Study I

Evaluation of marine protected areas in the Western Indian Ocean

by Sue Wells

Fishers' workshop during the assessment of Kisite Marine Park, Kenya © *Sue Wells*

Introduction

Over the last decade, countries of the Western Indian Ocean (the mainland states of eastern Africa and the island states of the Indian Ocean) have greatly increased their investment in marine protected areas (MPAs), of which there are now over 50. There are however serious concerns about the effectiveness of their management. As a result, a workbook has been prepared by IUCN's Eastern African Regional Office (IUCN-EARO) to help sites carry out assessments of management effectiveness, in order to increase understanding of where management improvements and capacity strengthening are required.[58]

The workbook follows the IUCN-WCPA Framework closely; the methodology has been adapted from that developed through the UN Foundation/UNESCO/IUCN-WCPA project *Enhancing our Heritage*.[59] It uses worksheets for each of the six elements (context, planning, inputs, processes, outputs and outcomes) and recommends that they are adapted to individual MPAs. A small 'implementation team', comprising MPA personnel, key stakeholders and sometimes consultants, leads the assessment and ensures that data are collected and worksheets compiled. Staff and stakeholders review the worksheets in consultative workshops, and a report and recommendations are produced. The assessments can be carried out over a relatively short period of time (e.g. 3–4 months) and should therefore complement (rather than be an alternative to) the more detailed method developed by WCPA-Marine which focuses on identifying and using indicators to assess outputs and outcomes.[60]

Testing the workbook

As part of the process of preparing the workbook, an early draft was tested in eight MPAs in Eastern Africa in 2003.[61] The MPAs were selected to represent a range of management types and situations:

- **Five in Kenya**: Malindi Marine Park and Reserve, Watamu Marine Park and Reserve, Kiunga Reserve, Mombasa Marine Park and Reserve and

[58] Wells and Manghubai (2005).
[59] Hockings *et al.* (2004).
[60] Pomeroy *et al.* (2004).
[61] Wells (2004).

Kisite Marine Park/Mpunguti Marine Reserve; these are all relatively well established government-managed sites but vary in size, resources and the management issues to be addressed.

- **Two in Tanzania**: Mnazi Bay-Ruvuma Estuary Marine Park and Mafia Island Marine Park; these are both government-managed, but with strong community involvement. Mafia Island Marine Park has been established for 10 years, but at the time of the assessment, Mnazi Bay-Ruvuma Estuary Marine Park had been gazetted for only two years.
- **One in Seychelles**: Cousin Island Special Reserve; this small protected area is managed by an NGO, Nature Seychelles.

Each site was provided with a small sum (US$2000–3000) to cover some of the costs, such as meetings or hiring additional assistance. The MPAs themselves were expected to provide in-kind support (e.g. staff time, use of vehicles), and financial input where possible, particularly since the aim was to make assessments a regular part of the management cycle. The assessment started with an introductory workshop for the eight sites, organized and facilitated by IUCN-EARO, at which the methodology was explained.

An implementation team was formed for each site. Teams varied in composition, although all teams comprised predominantly MPA staff. At Watamu Marine Park and Reserve, however, the team included representatives from non-governmental and community-based organizations, as well as a Japanese volunteer; at Kisite the team included one of the key village elders. In Kenya, a national co-ordinating team was also established because of the large number of sites, comprising staff from the Kenya Wildlife Service Coast office in Mombasa, to provide technical and logistical assistance.

Introductory training workshop on assessing management effectiveness for all the pilot sites in the project. © *Sue Wells*

The implementation teams drew up a work plan for the assessment and compiled the worksheets with assistance from the national co-ordinators and technical support from IUCN-EARO. All sites followed the same general approach, but made minor modifications according to their needs. Some of the MPAs developed a questionnaire that was used to collect information and opinions in a workshop setting, as the worksheets were found to be too complex for some of the community stakeholders (e.g. fishermen and boat operators). The completed sheets were reviewed by stakeholders at workshops, informal meetings or through correspondence.

Assessment results

The assessments showed the following:

- At the longer-established MPAs, the basic capacity for management has been developed but all lacked adequate staff and assured funding.
- Stakeholders were often very ignorant of the MPA aims, the legislation relating to it and how it operates, indicating that awareness raising may need to be more carefully targeted.
- Enforcement arrangements had been set up in all cases, with boundaries and zones demarcated, although the design often had flaws and enforcement was rarely adequate; few MPA staff could explain the basis for the location of boundaries or zoning schemes.
- Although the assessments should have included an analysis of the financial status of the MPAs, most sites lacked the skills or capacity for this. At Mafia Island Marine Park, a simple analysis revealed the very large size of donor contributions compared to government or other financial support. The situation was probably similar at the other sites, demonstrating the effort that will be required if MPAs in this region are to become financially sustainable.
- Most of the MPAs have objectives that relate both to biodiversity conservation and improved livelihoods, but in many cases these are insufficiently defined for measuring progress. The assessments helped staff and stakeholders to identify the most important elements of 'biodiversity' (i.e. the management targets) and their management needs. For example, coral reefs were key features of all the MPAs but often little thought had been given to how these should be managed.

- All the MPAs had management plans but these were often issue-driven (i.e. based on an analysis of the threats to the area at the time the plan was prepared) rather than objective-oriented, and thus did not lay out a strategy for achieving the overall goal of the MPA.
- The lack of any best practice standards in the MPAs (apart from Cousin Island) made assessment of management 'process' or performance difficult. The final version of the workbook therefore incorporates the draft protected area standards prepared by IUCN[62] and these could be adapted by each MPA.
- In most cases data were not available to show the progress made towards achieving the objectives as few sites had good baseline surveys from before protection started.
- All MPAs undertook some monitoring, but this was often inappropriately designed, or inadequately maintained to provide datasets showing long-term trends, even though some of the Kenyan MPAs had been protected for over 30 years. The main monitoring programmes were for coral reef health (mainly fish and corals), and in some cases mangroves and turtle nesting. There are indications that the Kenyan Marine Parks (no-fishing areas), which have the longest-running monitoring programmes for coral reefs, are effective in enhancing fish populations. Impacts that MPA management might have had on corals themselves, however, may have been largely obscured by the El Niño-associated coral bleaching event of 1998, which caused widespread coral mortality reaching 50–90 per cent in some areas. Cousin Island was exceptional in having a model sea bird monitoring programme, the results of which were used in the management of the reserve. Socio-economic monitoring is limited at all sites, although there had been investment in staff training; data on fish catch and tourism are available at some sites, but often not in a form that could readily be used for the assessment.
- The results of monitoring and research activities were often not easily available to MPA managers and staff, particularly when carried out by external research organizations.

Using the assessment results

Most sites have acted on at least some of the recommendations from the assessments. The following are some examples.

Revision or preparation of management plans: In Kenya, the management plans should be reviewed every five years, and the plans for all sites were thus due for revision. The assessments of Malindi and Watamu MPAs had led to the recommendation that these sites, which currently have a joint plan, should have separate management plans as there are sufficient differences between the two areas. The annual work plan and budget for these sites now includes a review of the management plan. It was also proposed that some form of co-ordinating mechanism to ensure joint management of common issues, such as the Marine Reserve (which encompasses the two Marine Parks) should be established. Mnazi Bay Marine Park in Tanzania used the assessment as a capacity-building exercise to help identify the issues to be taken into consideration in the preparation of their management plan, which has now been completed. At Cousin Island Special Reserve, the results of the assessment were used in the revision of the management plan.

Improvements in monitoring and research programmes: At Cousin Island, the assessment highlighted the lack of monitoring in the marine environment and so the wardens are now monitoring two coral reef sites. The assessment also triggered a study to look at impacts of bleaching on reef fish, the purchase of new diving equipment and a dive boat, and a concerted effort to attract more researchers to Cousin Island, which has already had very positive results. Similarly, considerable effort has gone into improving the monitoring programme and developing research activities at Mafia Island Marine Park. A permanent staff member has been engaged for this purpose. Monitoring of reef benthos and fishing effort has been improved, a research protocol developed and a research advisory committee formed.

Strengthening the legislative framework: The assessment of Mafia Island Marine Park identified weaknesses in the legislative framework which are now being addressed: regulations have been drafted, and the main Act has been reviewed and the draft submitted to Parliament.

[62] Carabias *et al.* (2004).

Capacity building for MPA personnel: The assessments identified the need for further training at many of the sites. In Kenya, a refresher course for MPA managers is being held and new MPA managers are being trained. An international visiting warden system (Experience Exchange Programme) has now been started for Cousin Island to help build staff skills.

Strengthening stakeholder involvement: The assessment at Cousin Island found that the Management Authority had difficulty in identifying "stakeholders". A study is therefore being initiated to examine perceptions of people on neighbouring Praslin Island, and extension work will be carried out with fishers, school children and other groups. Proposals to increase the time that the island is open to tourists are also being considered. At Mafia Island Marine Park, environmental education is being strengthened through the formation of school and village environmental clubs and production of materials such as brochures, T-shirts, and calendars.

Lessons learned

All the MPAs involved found a benefit in the process, even though the concept of self-assessment is not yet well accepted in the three countries surveyed. This is particularly the case where government institutions are involved. Some MPA staff found it difficult to acknowledge areas where improvement was needed, for fear that this might result in some form of retribution. It is therefore very important to provide adequate introduction to the assessment process, and to obtain the support of senior management levels from the beginning.

The assessments helped MPA staff to think about the reasons behind the establishment of the site, how their management activities can have an impact on both biodiversity and stakeholders, and how even small, insignificant, management issues can affect the overall success of an MPA.

All the assessments showed that better communications are needed with stakeholders and, in some cases, the assessment was the first time that the MPA staff had approached a stakeholder group for information and opinions. In all cases, the stakeholders expressed great appreciation of the exercise, and assessments can therefore be used to increase participation. Where some stakeholder groups use a local language, it is essential that the materials are clearly explained in this language, and that questionnaires or key worksheets are translated.

It is also essential that the worksheets are adapted to the skills and level of understanding of the implementation team; where this is not possible (e.g. if MPA staff lack the necessary computer skills) outside assistance should be brought in.

MPA workshop © *Sue Wells*

The assessments demonstrated the urgent need for more structured and sustainable monitoring programmes, using methods that permit participation of MPA personnel and ensuring that the results are reported back to managers with advice on how to adapt management actions. Mechanisms are required to ensure that copies of data and results are kept at each MPA site, and that the results are understood and available to all MPA staff.

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Case Study II

RAPPAM: Rapid Assessment and Prioritization of Protected Area Management: a methodology for assessing protected area networks

by Liza Higgins-Zogib and Leonardo Lacerda, Protected Areas Initiative, WWF International

RAPPAM Workshop in LAO PDR © *Liza Higgins-Zogib*

Introduction

Implemented in over twenty countries and in more than 850 protected areas (see Table 9), WWF's Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology[63] is currently the most widely used approach to carry out rapid assessments of the management effectiveness of protected area networks. RAPPAM provides policy makers and protected area authorities with a relatively quick and easy method to identify major trends and issues that need to be addressed for improving management effectiveness in any given system of protected areas – be it in a country, region or ecoregion. As such, with limited funds, authorities responsible for managing systems of protected areas have been able to analyse the range of major threats facing their protected area systems and to:

- get a broad overview of the most pressing management issues they face;
- look at how the system as a whole is functioning and performing; and
- agree on needed corrective steps that will lead to improved system-level management effectiveness.

Beyond anecdotal evidence, it is still too early to report on the extent to which protected area management authorities have adhered to and actually implemented the major recommendations stemming from these RAPPAM assessments. But the experiences accumulated during the repeated applications of the methodology have taught us important lessons. A few case studies and some of the key lessons learned thus far are discussed below.

As the Parties to the CBD have made commitments to assess their protected area systems by 2010, many more countries, provinces and states have expressed interest in using RAPPAM. Key challenges for the future are to ensure that there is sufficient funding and technical support for helping protected area management authorities to carry out such assessments; ensure a prompt and meaningful response to the recommendations produced as a result of the assessment process; systematically record the decisions related to the recommendations and their impact in actually improving management effectiveness; and ensure that system-wide protected area assessments become a periodic routine in the management process of management authorities, and not a one-off exercise.

[63] The RAPPAM methodology was developed for WWF by Dr Jamison Ervin.

Table 9. Countries where RAPPAM assessments have been conducted (by December 2005)

Region	Country	Date	Scope of assessment
Asia-Pacific	Bhutan	2002	4 Protected Areas (PAs)
Asia-Pacific	Cambodia	2004	All 26 national-level PAs
Asia-Pacific	China	2001	88 PAs of the Forests of the Upper Yangtze ecoregion
Asia-Pacific	Lao PDR	2003	All 20 national-level PAs
Asia-Pacific	India	2004	PAs of the Eastern Himalayas (8 Arunachal Pradesh, 7 Sikkim)
Asia-Pacific	Indonesia	2004	All 41 National Parks
Asia-Pacific	Malaysia	2005	18 Category II PAs
Asia-Pacific	Nepal	2003/04	All 16 PAs
Asia-Pacific	Papua, Indonesia	2005	41 PAs
Asia-Pacific	Papua New Guinea	2002/05	51 PAs (all existing conservation areas plus four proposed marine areas)
Asia-Pacific	Vietnam	2004	19 National Parks in the Truong Son ecoregion (Greater Annamites)
Africa-Madagascar	Cameroon	2002	30 PAs
Africa-Madagascar	Ghana	2002	3 PA complexes
Africa-Madagascar	South Africa	2002	110 PAs of KwaZulu Natal province
Europe/Mid. East	Bulgaria	2004	All 18 National Parks
Europe/Mid. East	Czech Republic	2004	3 landscape PAs and 2 National Parks
Europe/Mid. East	Georgia	2003	All 18 PAs
Europe/Mid. East	Mongolia	2005	31 PAs
Europe/Mid. East	Russia	2001/02	197 PAs (all Federal level)
Europe/Mid. East	Slovakia	2004	9 National Parks
Europe/Mid. East	Turkey	2005	36 National Parks
Europe/Mid. East	Finland	2004	70 PAs
Latin America	Bolivia	2004	All 21 National PAs
Latin America	Brazil	2004	21 PAs of São Paulo State

Overview of the methodology

The RAPPAM methodology is designed for broad-level comparisons among many protected areas that together make a protected area network or system. It can:

- Identify management strengths and weaknesses;
- Analyse the scope, severity, prevalence and distribution of a variety of threats and pressures;
- Identify areas of high ecological and social importance and vulnerability;
- Indicate the urgency and conservation priority for individual protected areas;
- Help to develop and prioritize appropriate policy interventions and follow-up steps to improve protected area management effectiveness.

It can also answer a number of important questions:

- What are the main threats affecting the protected area system, and how serious are they?
- How do protected areas compare with one another in terms of infrastructure and management capacity? And how do they compare in effectively producing outputs and conservation outcomes as a result of their management?

- What is the urgency for taking actions in each protected area?
- What is the overall level of integrity and degradation of each protected area? What are the important gaps in representation, and what steps can be taken?
- How well do national and local policies support the effective management of protected areas? Are there gaps in legislation and what are the governance improvements that are needed?
- What are the most strategic interventions to improve the entire system?

Although it can be applied to a single protected area, RAPPAM is *not* designed to provide detailed, site-level adaptive management guidance to protected area managers. Also, as a rapid assessment tool, it does not provide detailed information about conservation outcomes. Other site-level specific tools are available in the conservation literature.

RAPPAM has been designed to be consistent with the WCPA Framework (see Table 10).

Table 10. Elements of the RAPPAM questionnaire which fit with the IUCN-WCPA Framework

Context	Protected area design and planning	Inputs	Management processes	Management outputs	Outcomes
Threats Biological importance Socio-economic importance Vulnerability Protected area policies Policy environment	Protected area objectives Legal security Site design and planning Protected area system design	Staff Communication and information Infrastructure Finances	Management planning Management practices Research, monitoring and evaluation	Threat prevention Site restoration Wildlife management Community outreach Visitor management Infrastructure outputs Planning outputs Monitoring Training Research	Pressures

There are five steps in the RAPPAM process:

1. Determine the scope of the assessment;
2. Assess existing information for each protected area;
3. Administer the RAPPAM questionnaire;
4. Analyse the findings;
5. Identify next steps and recommendations.

In general the most thorough and effective approach to implementing this methodology is to hold an interactive workshop or series of workshops in which protected area managers, policy makers, and other stakeholders participate fully in evaluating the protected areas, analysing the results and identifying subsequent next steps and priorities.

RAPPAM workshops usually take three days. Two-day workshops have been held, but in these cases the agenda has been very tight with little time available for group and plenary discussions. The costs depend largely on where the workshop is held. Where possible it is advisable to hold the workshop inside a protected area as many of the discussion points during the workshop will be represented right outside the door. However, these logistics are usually the choice of the government Ministry (or other protected area authority), who will be the lead player in the workshop.

Getting the right participants to the workshop is critical – and the broader the stakeholder group present, the more accurate the results. It is important to have at least the manager of each park present at the workshop, as well as top-level participation from the appropriate government ministry. If deemed appropriate, donors can be invited, in the hope that they engage in helping with follow-up steps, as can other international and local NGOs present in the country or region. This helps build support for implementing recommendations that stem from the workshop. Other stakeholders such as community representatives, tourism operators and university staff strengthen the results. And even if in the end, there is disagreement between park staff and community members for example, points raised by the community can still be reflected in the RAPPAM report and taken into consideration.

Using the methodology

RAPPAM has been used in a diverse range of countries with different scopes. It has been employed in a number of different ways, using a mix of approaches. The following case studies illustrate the methodology's flexibility and outline how it has been used in three very different situations. The cases of South Africa and Brazil illustrate the use of RAPPAM for assessing state and provincial-level systems of protected areas, made up of sites classified under different IUCN categories. The case of Papua New Guinea illustrates the application of the method for a country-wide assessment, in a protected area system that is largely based within community-owned sites.

South Africa

KwaZulu Natal (KZN) Province of South Africa was one of the first full assessments using RAPPAM, and remains to date one of the most thorough. The purpose of the evaluation was to give a broad perspective and guidance to KZN Wildlife, the body responsible for the conservation of biodiversity in the province, as to problems and priorities with respect to protected area management. The 110 protected areas of the province, ranging in size from 5ha to over 50,000ha, and covering a wide spectrum of IUCN categories, were included in the assessment.

Process: After the scope of the assessment had been decided, and prior to the implementation of the questionnaire, KZN Parks & Wildlife staff were requested to gather all appropriate biological and management information and have it available for a series of project workshops. The RAPPAM questionnaire was then applied at six interactive workshops. They were organized in such a way that all relevant staff from a particular sub-region participated. This included the regional head, the sub-region head or chief conservator, protected area managers, and the district and community conservation officers.

After the first round of workshops had taken place and preliminary analysis of the data undertaken, a further set of meetings with senior staff from each region took place. These meetings were aimed at giving decision-making staff initial exposure to the evaluation results, and at gauging the usefulness of the outcomes in terms of the likely impact on decision making. After the data were fully analysed and preliminary recommendations developed, these were presented to the organization's Biodiversity Forum for discussion and adoption.

Results: Among the findings and recommendations, analysis of pressures and threats revealed that budget for the traditional management activity of poaching control far outweighed the funds available for the much more pervasive and damaging threat of invasive alien plants. So, as a direct result of the RAPPAM exercise, resource allocation procedures were reviewed and adapted to reflect a more systematic prioritization process, using the methodology.

RAPPAM Workshop in PNG © *Liza Higgins-Zogib*

Brazil

In 2004 the São Paulo Forestry Institute, the Forestry Foundation of São Paulo and WWF-Brazil led a RAPPAM assessment of 772,696ha in the 32 protected areas of São Paulo State. The State includes the largest remnants of the highly endangered Atlantic Forest in Brazil, and an evaluation of the management effectiveness of the state-level protected areas was seen to be both timely and necessary, particularly because the great majority of protected areas in São Paulo are under the management of the state and not of the federal government of Brazil.

The objective of the RAPPAM exercise was to gauge the effectiveness of the system of protected areas in the state, discuss issues of representation, and highlight the strengths and weaknesses of three specific areas: management, protection and finance.

Process: First, the RAPPAM questionnaire was adapted to local circumstances through a number of participatory workshops involving protected area managers, staff and representatives of advisory or consultative councils and partner institutions. This was followed by several regional workshops where initial data was collected and a more general workshop in São Paulo to gather system-level data. Smaller-scale workshops were held to encourage active participation. The regional workshops were held over two days, the first to fill in the questionnaire, and the second to review, adjust and allow for comparison and clarification.

Results: After the data were collected, the findings were analysed and some concrete next steps and recommendations were identified.

The level of participation during this process was a particular highlight and led to engagement and commitment to a clear set of very tangible, time-bound recommendations, each assigned to the appropriate agency or department. The identification of some key representation gaps and how they will be filled, the establishment of a strong communications outreach programme, and the implementation of a number of sustained income-generating activities, including payment for environmental services, illustrate some of the key recommendations.

Papua New Guinea

The overall goal of a RAPPAM assessment carried out in Papua New Guinea (PNG) between 2003 and 2005 was to review and improve the management effectiveness of the protected area system. Because of the nature of the country, this was a very different (and relatively lengthy) assessment process. Some more specific objectives were set for individual protected areas and the system as a whole:

Individual protected areas:

- understand whether individual protected areas are achieving their conservation goals and are supported by landholding communities;
- identify threats and pressures to individual protected areas and across the system;
- consider how effectively protected areas contribute to the livelihoods and aspirations of communities; and
- make recommendations for improving on-the-ground management in protected areas.

Protected area system:

- review the strengths and weaknesses of government and NGO support to PAs;
- understand which approaches and tools are effective in helping communities to manage their natural resources;
- explore mechanisms to reduce conflict between protected areas and other land uses;
- examine how best to apply the resources and skills of government and non-government agencies to strengthen the protected area system; and
- recommend steps to improve protected area policy and practice.

Process: PNG has more than 800 languages, immense cultural diversity and a system of customary tenure, resulting in the RAPPAM exercise being carried out in an entirely different manner to the other case studies discussed.

To address these differences, a team made up of WWF, The Department of Environment and Conservation (DEC), PNG Forest Authority, Research and Conservation Foundation, The Village Development Trust, The Nature Conservancy, and Conservation International, together:

- collected primary data;
- added questions relevant for PNG on livelihoods, traditional management systems, community entry, and community management;
- conducted simplified questionnaires in the village using visual (PRA) methods;
- worked with groups of villagers and local officials; and
- approached the assessment as a learning experience for protected area communities.

Each of the 51 protected areas was visited by a RAPPAM team. Many of the areas had not been visited by the government or NGOs for over a decade. Some communities visited did not even know that their land was a protected area! The RAPPAM visits were therefore useful in their own right.

Results: Results of the RAPPAM process and final workshop included:

- Review of the strengths and weaknesses of protected area management in PNG;
- Analysis of main pressures and threats to the PNG protected area system;
- A "Rescue Strategy" including concrete recommendations and next steps for further improvements (protected area management policy, objectives, practices and resource allocation);
- Updated database and protected area register of the status and management of individual PAs; and
- Mapping of individual protected areas and the protected area system.

The RAPPAM assessment has provided a sound platform from which to make a meaningful difference to the level of management of PNG's conservation areas. Moreover the other half of the island (Papua, Indonesia) has also undertaken a RAPPAM exercise and results will

be consolidated and used to formulate a strategy for the whole island of New Guinea, home to Asia's biggest and most diverse rainforest.

Lessons learned

Ensure the government protected area authority leads the assessment process: The implementation of a system-wide assessment such as RAPPAM is a fundamental function to be performed by the management agency. NGOs can help with some funding and technical assistance, but the protected area authority must be fully in charge of the assessment process, as it is the one ultimately responsible for implementing the recommendations and improving the system.

Develop partnerships with other NGOs present in the country or region: In most cases, RAPPAM has been implemented in partnership with other organizations. The Indonesian assessment is a case in point. The Government of Indonesia, WWF, The Nature Conservancy, Conservation International, Wildlife Conservation Society, The Natural Resources Management III, Wetlands International Indonesia, BirdLife Indonesia, and Fauna and Flora Indonesia all came together for the RAPPAM assessment. Such collaboration is helpful for developing commitments for implementing the agreed assessment priority recommendations.

Choose a useful assessment scope: RAPPAM is seen at its best when a larger number of protected areas are included in the assessment. The assessment scope should be carefully thought out. If there are too many protected areas in a country or region to assess all of them, the assessment can choose to just include specific IUCN protected area management categories or priority regions. For example, in Malaysia limited resources meant that the RAPPAM assessment was only carried out for IUCN Category II protected areas.

Administer the questionnaire through interactive workshops: This has been the case in most countries with PNG being a notable exception because of the diverse cultural situation and customary tenure regime. Simply getting all of the protected area managers together with decision-makers, NGOs and other stakeholders to discuss management issues, identify the threats to protected areas, and agree on key recommendations has proved to be very useful. In addition to valuing of the opinion of those closest to the field (managers, rangers, etc), such workshops serve the purpose of building capacity among field staff about the technical and managerial issues that are most relevant to protected area management. Finally, it also builds an agreed vision among field and headquarters-based staff and partners about the key priorities to work jointly on.

Think carefully about assessment objectives and adapt the method to local needs: Decision makers and protected area managers must see the usefulness and necessity of such an evaluation. The assessment objectives need to be thought out, discussed and agreed at the senior level within protected area management authorities. A review of other existing methods and an adaptation of RAPPAM to address specific issues that are relevant locally need to be made. For this purpose, the constitution of a "RAPPAM Working Group" with representatives from the government, key NGOs, and other stakeholders has proven to be most useful for defining and clarifying objectives, defining the scope, and agreeing on methodological adaptations.

Launch the report at an event if possible: Announcing the key findings and recommendations of the assessment at a high-level public event should be planned ahead. It can help in three ways to: 1. raise the profile of the protected area system among key target audiences (e.g., members of parliament or state legislature); 2. raise awareness and generate commitments for the funding that is needed for the implementation of key recommendations (e.g., by inviting existing and potential donors to the protected area system); and 3. generate a public commitment at the governmental level for following up on the assessment.

Make clear, concrete, do-able recommendations: To ensure that the RAPPAM reports do not sit on the shelf and gather dust, the recommendations must be turned into target-oriented, time-bound action points, clearly assigned to the appropriate parties. A key recommendation is that such assessments are carried out periodically (each 4–5 years), and become an integral part of the business process of the protected area management authority.

Ensure participation and engagement of local communities and other relevant stakeholders in assessments, but plan carefully for their input: While in an ideal world local communities would participate in RAPPAM assessment workshops as stakeholders with an equal input, the experience shows a mixed review. There are no fixed formulas for ensuring other stakeholders' participation. Experience has shown that garnering their input at the preparatory, regional workshops is more effective than attempting to do so at a national-level workshop setting.

Case Study III

Evaluation of the protected area system of Catalonia, Spain

by Josep M. Mallarach

Els Encantats, Parc Nacional © *Xavier Sabaté i Rotés*

Introduction

The evaluation of the protected area system of Catalonia, Spain (2002–03) was the first to assess the effectiveness of an entire system of protected areas within Spain, and one of the first in the European Union to be conducted by an external, independent scientific organization, based on the IUCN-WCPA Framework.

Catalonia is an Autonomous Community of Spain, a quasi federal state, where natural areas protection is the responsibility of regional governments. Challenges for natural heritage conservation in Catalonia are complex. With a population of seven million, plus 15 million tourists in summer, Catalonia is one of the most heavily industrialized regions of Europe. At the same time, it has a rich biodiversity, from alpine ecosystems up to 3000m high to the Mediterranean coasts, from steppe areas to wet deciduous forests and wetlands. This diversity is reflected in its over 3400 vascular flora taxa: twice as many species as most central or northern European countries.

The Catalan Ministry for the Environment and Housing is the main responsible agency for legislation, planning and management of protected areas. The Catalonia system includes 148 protected areas (terrestrial, marine and a combination of both) with a combined surface equivalent to 21 per cent of the Catalonia's land. These areas were created from 1955–1993 mostly through the Natural Areas Plan of 1992 and are organized around 10 different legal types of protection.

The evaluation of protected areas was conducted by the Catalan Institution for Natural History *(Institució Catalana d'Història Natural,* ICHN), the oldest and most influential scientific organization in Catalonia. The evaluation was external, participatory and independent, though it received the support and collaboration of the Ministry for the Environment and Housing, as well as economic support from Foundation *Territori i Paisatge de Caixa Catalunya* (a savings bank) and the *Diputació de Girona* (a local authority). In addition, several research centres from three Catalan universities collaborated in the evaluation, helping in the application of a limited number of indicators for the entire system.

Purpose and objectives

The goals of the project were:

- to introduce the practice of protected area evaluation to Spain following a sound, internationally accepted methodology;
- to disseminate the findings of the evaluation to the public;
- to help improve the condition of the protected area system in Catalonia.

The main objectives were to assess the condition of the entire system of protected areas in Catalonia, and to be a 'Living Observatory' of the Action Plan for the protected areas of Spain of 2000,[64] thus becoming a significant reference for future evaluations of protected areas in other regions of Spain, as well as other European countries.

Thus, the evaluation was not intended to assess if the protected area system was sufficient to conserve biodiversity in the long run. Neither was it to assess whether the protected area system included a representative sample of landscapes, as recommended by the Landscape European Convention.[65] Rather, its goal was to assess the planning and management effectiveness of the existing system.

Process

Since it was the first protected area evaluation to be conducted in Spain, it took a long time to set up, develop and complete the process of assessment. The main steps in this process are summarised below:

In November 2000 the ICHN organized a workshop to adapt the WCPA Framework to the particular situation of Catalonia. Next, six reporters worked on the first draft of 87 indicators.

During 2001 the definition of the indicators was completed, and funding was secured to conduct a pilot plan. In February 2002, a seminar was held about the scope of the evaluation and the methodology to be used.

From March to May 2002 a pilot evaluation was conducted in seven protected areas, representing a sample of the system: from large mountain natural parks, to small steppe natural areas or marine strict nature preserves. The purpose was to test the methodology and refine and adjust the indicators.

In July 2002 the coordinators organized seven seminars in different parts of Catalonia to explain the methodology to the 130 evaluators, making sure that everybody had a sufficient understanding of it. Then began the actual data compilation for evaluation, which lasted six months.

Once the protected area evaluations were completed, the evaluators sent all the forms in electronic format to the managers, asking them to comment on the findings. Once this step was completed, both the evaluation and the managers' comments were sent to the secretariat of the ICHN, where all the forms were reviewed and checked for completion and coherence. When a problem was found, the responsible evaluator was required to solve it.

In January 2003, data analysis was carried out using a database created for the task. The next two months were spent elaborating the proposed analysis with the input of all the evaluators. Later, several workshops were conducted to discuss the analysis, until a consensus was reached to validate the interpretation. This was a delicate process, since several indicators are dependent on the management objectives of the area. For instance, an increase in environmental education programmes is considered positive within a natural park, but it is negative within a small strict preserve.

The active participation and support of the Ministry of the Environment and Housing proved to be very useful.

From September 2003 to the present the dissemination of the methodology and results of the evaluation project has been done at four levels: Catalonia, Spain, Europe and the international community.

Main findings

Although all 148 protected areas were independently evaluated, the findings were reported at the system level, using different aggregation criteria. Some of the main findings are summarised below:

The protected area system in Catalonia is quite large (the second largest in Spain) and includes a considerable number of elements of high geological, botanical, wildlife, cultural and spiritual value, despite the fact that only ecological values were used to identify the protected area systems set up in 1992.

The 10 different legal types of protected areas are equivalent to level I–V of the IUCN management categories. Levels of protection are low, in general: 93.5 per cent of the protected area system is under category V type of regulations, which is not appropriate in many cases. Moreover, a large number of legal and economic instruments have not been put into force. The lack of

[64] Múgica and Gómez-Limón (2003).

[65] European Landscape Convention (2000).

planning, funding and problems of ecological connectivity are among the main deficiencies. The instruments that have been better applied in relation to their objectives, are: National Park, Special Plan, and Peripherical Protection Zone. Conversely, the use of legislation to implement Natural Sites of National Interest, Strict Nature Preserves and Wildlife Nature Preserves has caused more confusion.

Negative pressures of variable significance have impacted on almost 75 per cent of the protected area system area. Negative impacts include infrastructure development, peripheral urban sprawl, irrigation projects, wild fires, tourist pressure, extractive activities, poaching, etc. Impact combination and iteration creates significant threats for the integrity of a number of protected areas, specially small ones containing fragile elements. Fifty-one per cent of the protected areas have an area of less than 10km^2.

The resources available to face these threats have not been sufficient in most cases. Only 36 protected areas have a management team and only 26 protected areas have management plans. The total budget for protected areas with active management is about 30 million euros, but 71 per cent of it is concentrated in six protected areas.

The effectiveness of the protected areas has been lower than is desirable, but higher than critics expected. Limiting factors include inadequate legislation, low degree of administrative coordination, lack of resources, low coherence between action plans and actions performed, low application of discipline measures, and a lack of performance evaluation for individual protected areas. That explains why 40 per cent of the protected areas have suffered from severe to high negative impacts since declaration, which has resulted, in some cases, in the loss of some values that justified its establishment.

On the whole, economic subsidies for the local population have been low, and collaboration agreements with private owners exceptional, despite the fact that a major part of the protected area system is under private ownership, and that 36 per cent of the protected areas have local residents inside its boundaries. The socio-economic impact of the protected areas has been positive in a number of cases, and neutral in the rest. Public use of protected areas is generally high and keeps increasing. The system receives more than 11 million visitors per year, a factor which is in itself becoming a major stress for some protected areas.

Conservation outcomes have been very variable. Although some protected areas have been positive, a large number have seen neutral conservation outcomes and in some cases there is evidence of negative results, meaning that protected area managers have not had the power or the means to stop or reduce significant negative pressures. However, despite the fact that the lack of resources is acknowledged as a serious hindrance for all parties, no direct relationship has been found between available outputs and outcomes. Rather the most significant relation appears to be between pressures and impacts and outcomes. This means that protected areas that have had more losses are those that had suffered more pressures and impacts, and the amount of resources that the managers have had at their disposal is not a significant factor.

Use of the evaluation

In a country with almost no experience in evaluating the efficiency of public policies, to make public, in its entirety, the findings of a performance evaluation of a complex protected area system such as that of Catalonia has had a significant intrinsic and educational value. A summary of the results of the evaluation has already been published[66] and will soon be published in its entirety.[67]

At the end of the official public presentation of the findings, the Minister for Environment and Housing of Catalonia congratulated the authors on a good job. He stated that his Department accepted the results of the evaluation in their entirety, wished to make them widely known and declared the will to undertake an action plan based on the findings of the evaluation. This may be possible, since among the main short-term objectives of the current Catalan government is a new legal framework for the protection of the natural heritage and biodiversity of Catalonia and the establishment of a new agency of nature conservation.

Furthermore, the evaluation is regarded as a significant tool to improve planning and management of the protected area system of Catalonia. This will require the development of a participatory Action Plan based on the guidelines of the Action Plan for the protected areas of Spain, which takes into consideration the results of the evaluation.[68]

[66] Mallarach, Vila and Vargas (2004).

[67] Mallarach (2005).

[68] Múgica and Gómez-Limón (2003).

Lessons learned

Among the many valuable lessons learned during the process, one can point out the following:

- The positive impact that a committed NGO can make on assessing the management of protected areas, even in countries which lack tradition in this matter.
- The value of an iterative, participatory process to adapt the WCPA Framework to a particular situation. The pilot plan allowed substantial refinements, even at the end of the process when further simplifications were introduced.
- The critical importance of the support of the key agencies, local governments and other private NGOs, without which the evaluation could not have been performed.
- The complexity of coordinating over one hundred different evaluators with different backgrounds, experience levels and knowledge of protected areas.
- The need to provide appropriate training and ensure effective coordination between the evaluators during the entire process.
- The frequent difficulty of getting significant data from public local and regional authorities that are not used to being evaluated and have a variable level of distrust towards this process.
- The positive reaction of most stakeholders: policy-makers, managers, planners and evaluators – who all acknowledged that they have learned a great deal from this evaluation.
- For some types of protected areas (mainly Strict Nature Preserves, Wildlife Preserves and some Nature Parks) the problems identified are so serious that it is advisable to undertake evaluations at the individual protected area level, as soon as possible.
- The potentially significant impact of the evaluation findings are in part due to the fact that there is currently a new government in Catalonia which is better disposed towards effectiveness evaluation and public participation in protected area management.

Holy mountain of Montserrat © *Josep Maria Mallarach*

Case Study IV

Enhancing our Heritage: monitoring and managing for success in natural World Heritage sites

by Sue Stolton, Equilibrium, José Courrau, University of Queensland and Moses Mapesa, Uganda Wildlife Authority

Community meeting to discuss assessment of Bwindi Impenetrable National Park © *Marc Hockings*

Introduction

The UNESCO/IUCN *Enhancing our Heritage* (EoH) project, funded by the United Nations Foundation, is aiming to improve monitoring and evaluation in natural World Heritage sites. The project team, from Europe and Latin America and managed by the University of Queensland, Australia, is working with staff and partners in nine pilot World Heritage sites in Africa (Bwindi Impenetrable National Park, Uganda; Serengeti National Park, Tanzania and Aldabra Atoll, Seychelles), Asia (Keoladeo National Park, India; Kaziranga National Park, India and Royal Chitwan National Park, Nepal) and Latin America (Río Plátano Biosphere Reserve, Honduras; Sangay National Park, Ecuador and Canaima National Park, Venezuela) to develop and test management assessment methods.

Natural World Heritage sites protect areas of 'outstanding universal values' for science, conservation or natural beauty. Given this significance, it is critical that managers have the information and support systems needed to manage sites effectively, and that the global community has the confidence that their values are being maintained. World Heritage signatory States have already implemented a 'World Heritage in Danger' list, reactive monitoring missions and requirements for periodic reporting by State Parties. But these 'external' mechanisms, however valuable, cannot replace the need for regular monitoring and assessment by managers themselves.

Developing an assessment process

Rather than impose one top-down system for the assessment of World Heritage sites, the EoH project is developing and testing a toolkit of methodologies, detailed in the *World Heritage Management Effectiveness Workbook,*[69] which will help managers and stakeholders assess current activities, identify gaps and discuss how problems might be addressed. The WCPA Framework is the unifying theme around which the Workbook is structured. Indicators and tools for assessing each component of the Framework are suggested to build up a picture of the adequacy and appropriateness of management and the extent to which objectives are being achieved.

The workbook includes 11 tools (Table 11) which are based on a variety of best practices in protected area, and in particular World Heritage, assessment. Many of the tools draw from the experiences in Fraser Island World

[69] Hockings *et al.* (2005).

Heritage site, Australia and from a joint WWF and IUCN project to develop assessment methods in Central Africa, in particular at the Dja World Heritage site, Cameroon. The tools for identifying objectives are based on those developed by The Nature Conservancy (TNC) for use in the USA and Central and South America. The threat assessment also draws on work by TNC and the Biodiversity Support Program. The methodology developed for assessing outcomes was inspired by existing systems used by Parks Canada, TNC and Kruger National Park in South Africa.

Table 11. EoH Workbook Methodologies

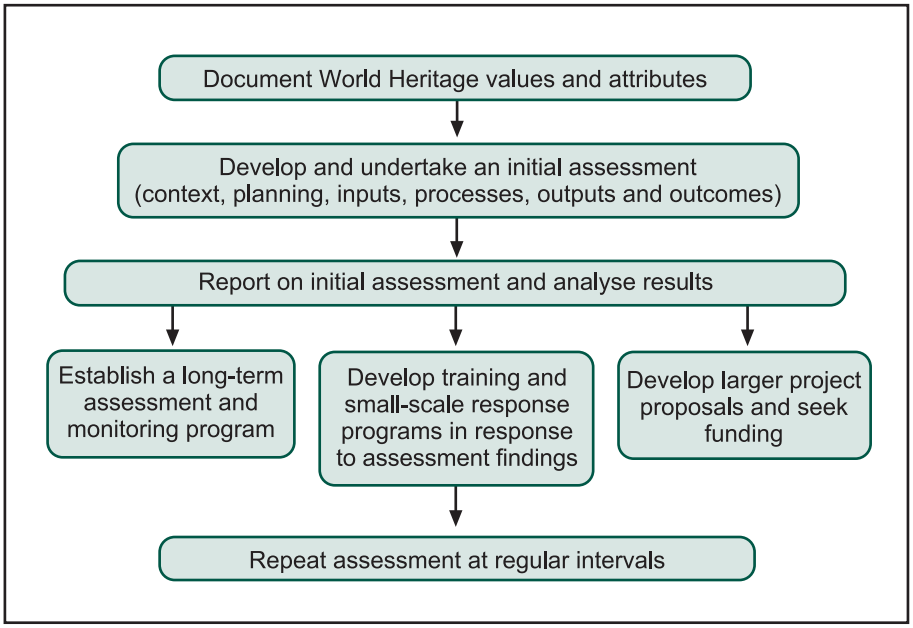
Context
Identifying management values and objectives
Identifying threats
Relationships with stakeholders/partners
Review of national context
Planning
Assessment of management planning
Design assessment
Inputs
Assessment of management needs and input processes
Assessment of management processes
Outputs
Assessment of management plan implementation
Assessment of work/site output indicators
Outcomes
Monitoring and assessing the outcomes of management

The workbook is designed for use in all natural World Heritage sites, and can be adapted to suit the needs of all protected areas. Like other protected areas, World Heritage sites vary greatly in their objectives, management approach, resources, and capacity for assessment and monitoring. Many of the tools are thus very general and need to be adapted to suit a site's own needs and realities. The assessment tools can be used either to supplement existing assessment activities through helping to ensure all components of the Framework are assessed; as a point of reference to develop new tools that fit special conditions; or to build a complete assessment system from the start.

The EoH project is aiding sites, both with technical expertise and financial assistance, to complete an initial assessment of the management effectiveness (in year one of the project) and a second assessment (in year four). The initial assessment is used to gain baseline data on the current situation at the site. Information can also be used to develop additional monitoring and assessment systems and to formulate small-scale responses or larger-scale proposals for areas where adaptations to management have been identified (for instance additional staff training or equipment needs). The initial assessment was also used to test the various methodologies developed to assess the elements of the IUCN-WCPA Framework. Following feedback from the sites, the workbook has been revised and, hopefully, improved.

The main project steps for each site are illustrated in Figure 11.

Figure 11. Enhancing our Heritage: assessment and evaluation methodology



By the end of the project, it is hoped that the pilot sites will have:

- established assessment, monitoring and reporting programmes for assessing management effectiveness and the state of conservation of World Heritage values;
- site managers and others trained in the application of assessment and monitoring techniques;
- integration of assessment and monitoring into management practices;
- established or improved communication and co-operation between site managers, local communities and NGOs, research organizations, regional training institutions and other key experts and stakeholders, which will provide a solid basis for the continuation of assessment and monitoring beyond the life of the project;
- improved management in areas of identified deficiency (this can be achieved through training programmes and small-scale support provided through the project); and
- project proposals prepared and funding sought for large-scale projects required to address identified deficiencies.

Results of the project to date

The EoH project has two major aims:

- to establish and integrate assessment, monitoring and reporting programmes; and
- to implement the findings of assessments by providing support for training, small-scale interventions and if possible assistance in preparing and funding large-scale projects.

The first aim is the most challenging and for most sites means changes in management culture and practice. Such changes are not always easy to make. Success is generally dependent on the understanding by managers and management agency staff of the benefits of monitoring and assessment, and the capacity within the World Heritage site to institute change. The project has found that one of the best ways to develop new systems and approaches to monitoring and assessment in sites is to work with managers and staff during periods of management review, for instance during the development or revision of a general management plan. It is also important, if possible, to institutionalize monitoring and assessments at the agency level. In several countries, the development of monitoring and assessment at one pilot site has led to plans to institute assessments across the national protected area network.

One positive sign of the sites' willingness to assess management effectiveness is that, while the project design provided for completion of two assessments (at the start and end of project), most sites have completed, or plan to complete, additional voluntary assessments at the project mid-point. One reason for this was that many sites were unable to complete assessments of all WCPA Framework elements during the initial assessment because of lack of information or capacity to gather information. These additional assessments also provide an indicator of the long-term sustainability of assessments at the project sites.

However, there has been mixed success in integrating the results of assessment and resulting adaptive management with management planning; reinforcing the underlying need to ensure that sites are both willing and able to undertake the implementation of this type of monitoring and assessment.

Funding is also important. The project has provided each site with approximately US$30,000 per year for four years to undertake the assessment and develop effective assessment processes and monitoring systems. The funding is deliberately fairly low to encourage sites to either self-fund or find small amounts of additional funding to continue the assessment process once the project has been completed.

Lessons learned

To date some clear lessons can be drawn from the processes of introducing the assessment of management effectiveness at the nine World Heritage sites. These can be grouped around four main themes, which are discussed in more detail below:

- Working in partnership
- Effective management systems
- Developing clear management targets
- Increasing site knowledge

Working in partnership

The underlying premise of the EoH Project is that World Heritage sites undertake assessment of their own management effectiveness. For the self-assessment process to be rigorous it is essential that site managers assemble a team of stakeholder representatives to work with them to develop and support the monitoring and assessment process. Such partnerships are also important to avoid overlapping of activities by different stakeholders and thus maximize the use of their resources. Although all the sites were already engaged in some form of stakeholder dialogue, in most cases this

tended to be a one-way conversation used to provide or elicit information rather than working with stakeholders to share information and opinions and ensure effective site management. The project requirement for site implementation teams to undertake the project, who then work with a wider group of stakeholders to develop and ratify the initial assessment, has reinforced this need to build strong and coherent local teams to work together to assess management. In some instances it is clear from the initial assessment reports that opportunities for stakeholder input need to be strengthened. There remains a strong tendency for reports produced solely or largely by managers to present a 'positive' view of management, with limited external input.

Two examples from Latin America highlight the importance of partnerships. In **Canaima National Park**, Venezuela, the project has been perceived as an opportunity to combine the separate efforts of civil society, government, local governments and Indigenous groups. The local team, which includes civil society, the private sector, government (local and national), Indigenous groups and the National Guard within a park, has demonstrated capacity and commitment to implement the project. The people involved quickly identified themselves as a team and have ensured that all stakeholders involved in the project are actively engaged in project implementation. However, at the **Río Plátano Biosphere Reserve** in Honduras it became clear during the introductory and planning workshop that those involved in the reserve had little experience of working together as a team. It is also evident that unsolved issues between the various organizations have affected the implementation of the initial assessment. In particular, the participation of stakeholders and the integration of existing information monitoring and assessment has been limited.

Effective organization and business management

It is difficult to manage effectively without basic business management systems. The initial assessment of management resulted in recommendations developed for three different levels of response:

- straightforward changes in management practices; followed by
- small-scale projects that could enhance capacity; and only then
- larger-scale projects to address major management issues.

The project has helped in developing some basic management structures for pilot sites. For example, **Aldabra Atoll** in the Seychelles is managed by the Seychelles Island Foundation (SIF), with headquarters on Mahé 1,000km from Aldabra. Developing a more strategic and planned management structure has been identified as an important step forward for SIF and Aldabra. Following the initial assessment, the EoH project has contributed to improving the implementation of the management plan (and in 2006 will assist in the revision of the plan), to developing SIF's organizational strategies and systems, both at Aldabra and SIF Headquarters, and to researching sustainable financing options for the management of the Atoll. Specific outputs have been the training of SIF staff in budget preparation and, through a partnership with Shell Foundation and Shell International, the development of business planning skills.

Ground truthing satellite imagery, a possible tool for monitoring in Keoladeo National Park © *Sue Stolton*

Developing clear management targets

The first step in the assessment of management effectiveness is to define site values and associated management objectives. These values include the key attributes that underlie nomination as a World Heritage site. For sites important to biodiversity, these values should ideally reflect not only unique or threatened/endangered species or ecosystems, but all the biological diversity (including terrestrial, freshwater and marine diversity) to ensure sustained ecological function. Site values however should also reflect other natural values such as geological or representative ecological processes, as well as any cultural or social values that are locally, nationally or globally important to stakeholders. It proved a challenge to agree on management objectives, in several of the pilot sites, particularly for the areas that did not have agreed or effective management plans.

Sangay National Park in Ecuador protects a spectrum of ecosystems, from tropical rainforests to glaciers, in the Eastern Cordillera region of the Andes. Its

isolation provides protection to indigenous species, such as the mountain tapir, spectacled bear and the Andean condor. Management of the site has tended to be species-orientated despite the size and variety of the site. The EoH project has worked with managers of the park and stakeholders to identify park values and management targets, which can then provide the focus for assessment, planning and management of the park in the future. The management plan for the park has already been revised to take account of this new understanding of park values and objectives. Over the next few years EoH will help to develop monitoring (to determine baseline data) and management strategies for this broader vision of site values.

Increasing site knowledge

There is an on-going need to collect data and develop, expand or refine monitoring systems to assess the overall condition of the site and to ensure that site management is leading to the expected conservation outcomes. For World Heritage sites in particular, the implementation of the World Heritage Convention requires regular reporting on the conservation status of the nominated World Heritage values. The assessment of outcomes, i.e. whether management is actually protecting the unique values for which the site was designated, is therefore clearly a crucial element of any assessment of management effectiveness, but is also the most difficult to measure.

The EoH methodology for outcome assessment is based on the setting of clear management objectives and assessment of threats, with an associated set of indicators to measure the status of these objectives and threats (which can be measured against a set of agreed thresholds). Regular monitoring of indicators then enables the assessment of objectives and threats and highlights any changes required in management activities or priorities. Effective research and monitoring are thus critical for outcome assessment. Even in sites which have been the subject of years of research, the project's approach to systematic assessment of management effectiveness and, in particular the assessment of outcomes, has highlighted serious gaps in the knowledge base and monitoring activities.

Bwindi Impenetrable National Park is managed by the Uganda Wildlife Authority (UWA) primarily to conserve its mountain forests and associated wildlife, including mountain gorillas. Gorilla-based tourism provides a major source of income for Bwindi, UWA and the local population. However, the park management and Bwindi-based Institute of Tropical Forest Conservation recognise the need for knowledge and assessment of a far wider range of species and interactions. The EoH project has thus provided funds to help update vegetation maps; assess endemic species, especially lesser known plants and animals; research the sustainability of local non-timber forest product harvesting and assess systems that monitor such harvesting; and evaluate methods for minimizing crop raiding by wild animals, including the research and testing of new methods and deterrents.

Serengeti National Park in Tanzania is justifiably world famous for protecting vast herds of migrating animals and associated biodiversity and has been the subject of considerable research and monitoring efforts over the last fifty years. However, the first assessment of the eight conservation targets and associated key ecological attributes, developed by Serengeti management staff and researchers as a focus for the management of the Serengeti ecosystem, found considerable gaps in information. This made a full assessment impossible. The EoH project is therefore working with the Park's ecologist to develop base-line data and monitoring programmes to measure indicators related to population pressure and extent of cultivation near migratory routes, fire patterns and extent of dry season fires, forest extent and cover, and the threat of human disturbance to rhino population.

Monitoring lion populations in Serengeti National Park © *Nigel Dudley*

Bwindi Impenetrable National Park

Moses Mapesa, Director, Uganda Wildlife Authority

The process provided an opportunity for in-house evaluation and evaluation by partners (outsiders) moreover at a relatively low monetary cost. The process of assessment specifically made us aware of the following:

- In-house staff have tremendous potential to take on various roles at relatively low costs. They are able to comprehend the system of assessment and undertake it once given a few tips.
- The process provides an opportunity to review management values, objectives, approaches and targets and allows for a re-focus of efforts on critical areas.
- The process can also be used for evaluation of individual staff efforts more positively. Many times staff are scared of evaluations and will even tell lies because they fear for jobs. But when they undertake the evaluation themselves, they have to be honest especially when they know that it will not result in victimization.
- The partners, especially the community members and leaders who have often been very critical of management (and sometimes antagonistic), were very supportive and objective during the assessment because the process allows them to get more informed about management and the interventions including the constraints and challenges and are now able to give their assessment from an informed standpoint.
- Fortunately for Bwindi, the partners had already been involved in the planning process. The evaluation therefore provided a participatory feed-back mechanism, moreover with field visits as opposed to just written reports some of which find some officers too busy to study them.
- Compared to an external evaluation by a team of experts, this process is quite cheap, affordable and practical. In any case external evaluation reports are sometimes rejected or explained away by management and even some of the good recommendations are not taken on. On the other hand external evaluations still rely on the same people (staff and partners) and simply compile a report to their credit and the staff feel cheated.
- The process brings together all stakeholders in the management of the site and allows for a second opportunity after joint annual operations planning to review who has done what and ensure complementarity and avoid duplication.

Case Study V

Management effectiveness evaluation of Finland's protected areas

by Mervi Heinonen, Metsähallitus Natural Heritage Services

Carrying out the assessment of Finland's national parks © *Nigel Dudley*

Introduction

A comprehensive international management effectiveness evaluation of the Finnish protected area system was commissioned by the Metsähallitus Natural Heritage Services (NHS) and organized in cooperation with the Ministry of the Environment and stakeholders in 2004. The evaluation report was published in 2005.[70]

The evaluation was carried out in accordance with the Programme of Work on Protected Areas of the Convention on Biodiversity (CBD) approved in Malaysia in 2004. It has been Finland's aim to support the ambitious realization of the CBD in halting the loss of biodiversity by 2010. Protected areas and good protected area management play a key role in attaining this goal.

The evaluation results indicate that substantial progress has taken place since the first evaluation was carried out on Finnish protected areas by Harold Eidsvik of Canada and Hans Bibelriether of Germany in 1994. The report provides insight into the management of Finland's most valuable natural sites and how effectively the financial and other means granted to the NHS are used. It also shows how successful the result-oriented guidance and creation of operating conditions for protected areas have been.

Simultaneously with this evaluation, the Ministry of the Environment financed an assessment of how Finland has reached its general biodiversity targets through measures of various fields of administration.[71] Together with the detailed international review on protected areas, it offers a good foundation for understanding conservation in Finland.

Protected areas in Finland

Finland has a well developed network of protected areas covering about 10 percent of its total area. Protected areas are spread around the country but most of the area protected is in the far north. There are generally no permanent settlements in protected areas and no logging, although reindeer herding and subsistence hunting is allowed in the three northern regions.

The protected areas on state land are mostly administrated and managed by the Natural Heritage Services (NHS). The agency is part of Metsähallitus, which is also responsible for management of state forest land. Most funding for the NHS comes from the state.

The backbone of the Finnish protected area system is a network of national parks, strict nature reserves and

[70] Gilligan *et al.* (2005).

[71] Hildén *et al.* (2005).

wilderness areas on state land (Table 12). Most of the areas consisting of representative forest, mire and fell habitats are situated in Northern Finland, but there are also several national parks in the southern part of the country. There are currently 35 national parks managed by the NHS, registering over 1.2 million visitors in 2004 (Finland has 5.2 million inhabitants). One national park and a few other protected areas are managed by the Finnish Forest Research Institute.

Figure 12. Management effectiveness assessment process in Finland

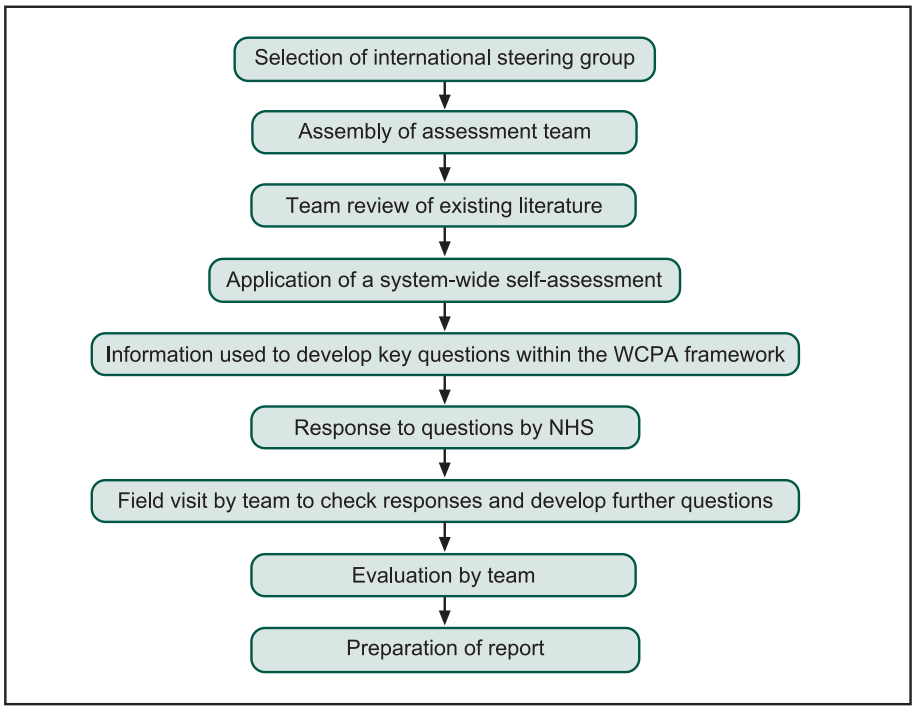


Table 12. Protected areas in Finland (January 2005)

Protected areas	Number	Area (km^2)
National parks	35	8,200
Strict nature reserves	19	1,540
Mire reserves	173	4,530
Protected herb-rich forest areas	53	13
Protected old-growth forest areas	92	100
Grey seal protection areas	7	190
Other protected areas on state land	39	470
Protected areas established by Metsähallitus	24	8
Protected areas on private land	4,037	1,564
Total	**4,479**	**16,441**
Wilderness areas	12	14,890
Total	**4,491**	**31,331**

Another main element in the Finnish protected area system is a series of sites belonging to national conservation programmes for particular ecosystems and their species assemblages. Specific national conservation programmes have been established for mires, herb-rich forests, waterfowl wetlands, shores (both inland and coastal waters) and old-growth forests. Many areas, especially those for mires or old-growth forests, are large, but most sites particularly in the south are small. The conservation programmes include areas both on state and privately-owned land.

Since Finland joined the European Union (EU) in 1995, a national Natura 2000 network has been created, mostly of areas already protected. This network of sites has the overall goal of protecting biodiversity within the EU. It is composed of two main types of site: Special Protected Areas designated under the EU Birds Directive (1979/409/EEC) and Special Areas of Conservation designated under the EU Habitats Directive (1992/43/EEC). Finland's Natura 2000 network was approved by the European Commission on January 13,

2005. The Finnish network covers a total of 59,930km^2 of which Metsähallitus has 42,840km^2, equalling 71 per cent.

Implementing the assessment

The management effectiveness evaluation of the Finnish protected areas was conducted using the IUCN-WCPA Framework[72] adapted to the conditions of Finland. In accordance to the Framework, the elements of the management cycle considered were context, planning, resources, process, outputs and outcomes.

An international steering group was identified to help to develop and comment on the assessment. The aim was to represent key institutions with an interest in Finland's environment and, by including two representatives from IUCN, help drive the international effort to increase protected area management effectiveness.

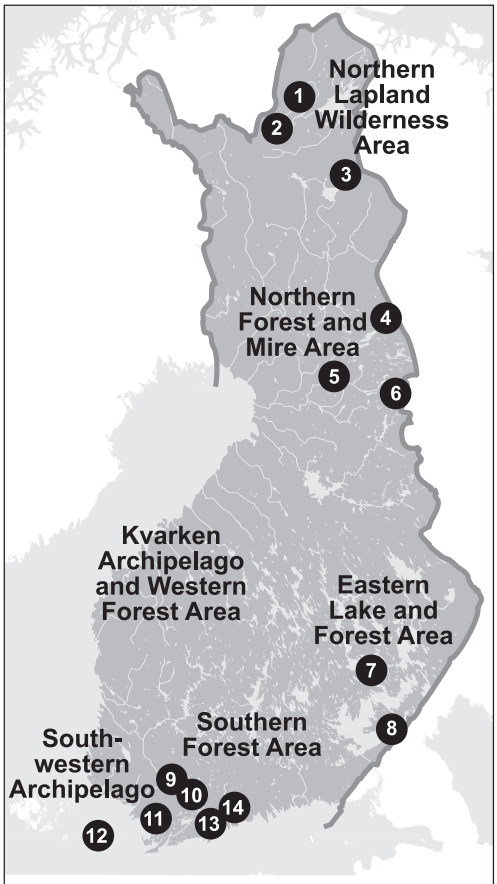
A four person evaluation team was identified and appointed, including someone with specific experience in running a comparable protected area programme, someone with expertise in Natura 2000, a representative from a conservation NGO and a local expert.

The management effectiveness evaluation assessment process is shown in Figure 12. The evaluation team first reviewed a large amount of literature. Park managers in Finland also completed a self-assessment questionnaire, modified from the WWF RAPPAM system (see Case Study II).[73]

The assessment included 70 of the nearly 500 statutory protected areas, including the national parks, strict nature reserves, wilderness reserves and national hiking areas. Drawing on these, the team developed a series of specific questions based on the WCPA Framework. To assist in focusing the evaluation work a set of assessment criteria were drafted for each question. The questions were answered by the NHS staff and they formed the core of the assessment and the subsequent report. The management effectiveness evaluation was finalized by a field assessment, which included visits to representative protected area sites (Figure 13) as well as meetings with NHS staff and representatives of directing and financing ministries, local stakeholder groups and NGOs.

Figure 13. Management effectiveness evaluation sites in Finland.

The protected areas were selected to represent a range of different habitats in different parts of the country, with parks of high and low visitation.



1. Siida Northern Lapland Nature Centre
2. Lemmenjoki National Park
3. Urho Kekkonen National Park
4. Oulanka National Park
5. Syöte National Park and Iso-Syöte Hiking Area
6. Hossa Hiking Area
7. Linnansaari National Park
8. Siikalahti Nature Reserve
9. Torronsuo National Park
10. Liesjärvi National Park
11. Teijo Hiking Area
12. Archipelago National Park
13. Nuuksio National Park
14. Headquarters Vantaa

[72] Hockings *et al.* (2000).

[73] Ervin (2003).

Carrying out the assessment of Finland's national parks © *Nigel Dudley*

Main results

The evaluation gave the general rating that Finland's protected areas are well managed, and with some exceptions, they appeared to be achieving their aims of conserving biodiversity. However, the evaluators gave a number of recommendations for improvements, summed up into ten areas of suggested action. Some of these relate to the Finnish context specifically, while all reflect the goals and targets of the CBD Programme of Work on Protected Areas.

- An **ecosystem approach** in planning was recommended to integrate protected areas with the land and water mosaics surrounding them to form effective ecological networks. Regional landscape plans for conservation were suggested to involve innovative partnerships with private landowners, local communities and other state land managers.
- **System planning** was recommended to be supported by national strategies addressing invasive species and climate change. In addition a gap analysis of threatened species was suggested to see whether current conservation actions are adequate.
- **Site planning** for management was observed to be falling behind schedule; strategic targets and milestones were recommended to finish and update this process. Periodical risk assessment was suggested to help to focus planning on sites in greatest need of action.
- **Conservation outcomes** in view of the evaluation should be emphasised in the management of protected areas. Certain declining habitats deserve greater attention. More areas where hunting and fishing is prohibited are needed, as are efforts to reduce impacts of overgrazing by reindeer in the far north.
- **Community outcomes:** specific efforts should be made to poll opinions and build arguments for protection with rural local communities to reduce the continuing antipathy for protected areas.
- **Visitor outcomes:** visitor impacts should be assessed and impact reduction looked into by raising public awareness of service costs and environmental effects.
- The **financing** provided by the Finnish government was in general seen to be adequate in international comparison. Exploration of options for other kinds of support was recommended. Annual audits should be checked against delivery on objectives, especially on those related to conservation.
- The **global role** of Finland's protected areas and the significance of conservation work appeared not to be fully comprehended by all NHS staff. Better understanding of the Convention of Biological Diversity and Natura 2000 targets was suggested as a potentially motivating factor for staff.
- **Assessment** of cultural values was seen to require a strategy. Terrestrial and underwater habitat inventories are to continue. A Natura 2000 master plan for monitoring is needed. Assessment and monitoring systems should be worked into a coherent framework and resources concentrated on a suite of key indicators to represent biodiversity and cultural outcomes in protected areas.
- **State of the Parks** reporting was recommended on a regular basis to analyse and communicate management effectiveness and support a culture of adaptive management. Reporting should involve external review.

How the results will be used

Many of the recommendations made by the evaluators were directed to the Natural Heritage Services of Metsähallitus. The recommendations range from minor ones which are relatively easy to put in practice, to complex strategic challenges which will take considerable time to implement. Several recommendations were related to the environmental administration in general, e.g. legislation, political strategies and cooperation between different sectors and stakeholders. Immediate action has been taken by both Metsähallitus and the Ministry of the Environment. The whole set of recommendations was discussed by the Board of Directors of Metsähallitus, Scientific Advisory Panel and several internal teams of the NHS.

New tools for conservation: the ecosystem approach

A broader ecosystem approach in management planning is seen as important by the entire Finnish environmental and forestry administration. Regional natural resource plans of Metsähallitus have already utilized the ecosystem approach successfully in the north, where most of the land is state-owned. Measures are especially needed in southern Finland, where the scattered network of small protected areas is surrounded by other land use pressures. If the connectivity of protected areas cannot be improved, the expected effects of climate change will be particularly detrimental to Finnish parks.

The national METSO programme includes several pilot projects aiming at the conservation of biodiversity values in southern forests, on a voluntary basis and emphasising cooperation between different stakeholders. The situation is still more challenging as regards other habitats, including traditional agricultural lands. Efforts are however being made to encourage private landowners to participate in management schemes.

The ecosystem approach is also a challenge to ecological research, since the baseline ecological information is often missing in areas surrounding protected areas. Although Metsähallitus carries out a lot of inventories on state-owned lands and waters, private lands are usually poorly studied. The NHS has already made arrangements to enable inventory data of privately-owned protected areas to be incorporated into GIS systems of Metsähallitus, which makes integrated land-use and management planning easier in practice.

System and site management planning

The evaluation emphasised the necessity for a strategic national plan for the Natura 2000 network. Regional Environment Centres and Metsähallitus are jointly drawing up regional master plans for Natura 2000 areas which could be used in national level planning.

The Ministry of the Environment has already paid attention to the issues of climate change and invasive alien species, but their relation to protected areas needs to be studied further. The Ministry has also established several working groups to tackle national issues, such as hunting. Another group is working to amalgamate the recreational use of nature with the aims of biodiversity conservation in state hiking areas and municipal recreational forests. It seeks to look at how these areas can support protected areas and enhance the ecological functioning of the protected area network.

Site planning of Finnish protected areas is falling behind the tight schedule set by the EU for Natura 2000 sites. In many cases the plans are also required by national legislation. The preparation of several hundred detailed management plans within a few years is almost an impossible mission. However, regional Natura 2000 master plans will aid this process, as will threat analyses, if done in connection with State of the Parks work, as is planned.

Information management: State of the Parks

The recommendation dealing with State of the Parks reporting was a major strategic proposal, but relatively easy to take on board. An internal project was established to gather the data needed in 2005 and the first State of the Finnish Parks will be published in 2006.

In Finland, the proposed park-level reporting is a novel approach. In certain respects the NHS has even intentionally tried to suppress such individual park-centred ideas of protected area management in favour of cost-efficient process-based management which is coordinated at the regional (unit) level. The park-level reporting, particularly in the proposed format of State of the Parks Reports, provides a comprehensive framework to gather and present existing data in an interesting way.

The NHS plans to publish similar reports every five years. These will provide a useful tool for monitoring how the agency and country is reaching the 2010 target to significantly reduce the loss of biological diversity. It will allow the agency to develop its own work, to understand changes and to assess threats. Furthermore, it provides an opportunity to inform decision makers and the public at large on natural and cultural values and the challenges faced in maintaining these values. It may also help the NHS personnel to understand the links between the national, European and global values and targets.

Lessons learned from the evaluation

Comments of the evaluators

The Finnish management effectiveness evaluation is one of the largest protected area assessments undertaken to date within the context of the IUCN-WCPA Framework and one of the first national-level assessments initiated by a protected area agency in a developed country. Because the evaluation team thought it likely that this process would be studied by other countries interested in developing similar assessments of their own, the evaluation report concluded with several comments on the structure and process of the Finnish evaluation.

- **The IUCN-WCPA Framework provided a useful context:** the six main fields of the Framework provided the necessary context, ensuring that the team considered all relevant aspects of management including the most difficult, but most important area, of outcomes. The specific questions were a useful way of focusing attention and drawing out information.
- **The RAPPAM and background research to provide data were both essential:** in the relatively short timescale available, having a lot of information already available for assimilation before and during the field visits made it possible to complete the project. The RAPPAM methodology was useful in getting perspectives from protected area managers.
- **Field visits played a key role in gaining understanding:** the field trip was critical in building up a picture of the state of the parks that could not be gained from written comments or conversations remote from the site. The team strongly advises against assessments that do not involve substantial elements of ground-truthing.
- **A wide expertise within the team was useful:** the team members all came from very different backgrounds. Having someone with experience in managing a similar protected area network was extremely useful and perspectives from inter-governmental and NGOs were also necessary in building a complete picture. A local but independent expert is indispensable in understanding local issues and checking the accuracy of statements.

And what would the team have done differently? Firstly, more meaningful responses may have been provided to the specific questions posed if the set of questions could have been provided to the NHS a full six months before the field evaluation (in this case they were provided two months in advance). Stakeholder involvement in the evaluation might have been enhanced if both the questions and the NHS draft response could have been made available to stakeholders before the field evaluation. Armed with both the agency responses and review comments by stakeholders, the work of the Evaluation Team could have been more precisely targeted. The team would probably have also given themselves more time in the country, both to meet with some stakeholders informally without NHS staff and perhaps to see a wider range of protected areas. It might also have been worth having more meetings with some of the groups most affected by protected areas, such as small forest owners, state forest enterprises and hunting groups to find out their perspectives. Such an approach would necessarily extend both the lead and field time in the overall evaluation process, but might also speed up the report finalization phase.

Secondly, the team emphasised that the precise format used in a management effectiveness evaluation is probably less important than assembling a good team and allowing time to read, listening to people and asking probing questions: their overall advice would be not to be too doctrinaire in approaching the issue.

Towards deeper understanding and adaptive management

The first lesson learned by the Natural Heritage Services was the need for easily accessible collated information on the protected areas and their management. Very little was readily available, especially in English, when the evaluation was begun, and a lot of work was needed to present plentiful information in a digestible format. The publication of a State of the Parks report at five year intervals will much improve the situation in the future.

The actual recommendations are food for thought for the protected area managers and the whole personnel. There is a need for more protected-area-specific aims and activities, defined on the basis of specially conducted assessments and risk analyses. The RAPPAM analysis as used in this evaluation was useful in introducing managers and other staff members to the WCPA Framework and the issues involved. New tools for self-evaluation of management effectiveness need to be developed.

It is important that field workers in protected areas are fully aware of the importance of their work from an international perspective. The whole administration must help conservation workers to become fully committed to international conservation goals, and to meet their colleagues from other countries.

As valuable as many of the recommendations are likely to be, it is still more important that the idea of adaptive management is so strongly supported. It has been one of the cornerstones of the NHS strategies and will be continued and further developed with this encouragement. Follow-up of the measures taken will show how well the NHS will succeed in the future.

Case Study VI

World Bank/WWF Alliance Tracking Tool: reporting conservation progress at protected area sites

by Liza Higgins-Zogib, WWF International and Kathy MacKinnon, The World Bank

Mongolia RAPPAM assessment, 2005 © *Alexander Belokurov*

Introduction

The World Bank/WWF Alliance Tracking Tool is based on the IUCN management effectiveness Framework. It was developed to monitor effectiveness in individual protected areas as a means of assessing progress towards the Alliance target of 75 million hectares of more effectively managed forest protected areas; but it is now being used in a range of terrestrial habitats and has been adapted for use in marine protected areas.[74] The scorecard includes all six components of management identified in the Framework (context, planning, inputs, process, outputs and outcomes), but has an emphasis on context, planning, inputs and processes. Although basic and simple to use, the scorecard provides an effective mechanism for monitoring progress towards more effective management over time and enables park managers and donors to identify additional needs, constraints and next steps in improving effectiveness of protected area management. The tracking tool is being used by the World Bank, WWF and the GEF as a monitoring tool for areas in which they are involved, and has been adapted for more specific uses around the world.

Background

The World Bank/WWF Alliance for Forest Conservation and Sustainable Use ('the Alliance') was formed in April 1998, in response to the continued depletion of the world's forest biodiversity and of forest-based goods and services essential for sustainable development. As part of its programme of work the Alliance set an initial target relating to the management effectiveness of protected areas of: *50 million hectares of existing but highly threatened forest protected areas to be secured under effective management by the year 2005*.[75] This target was revised in 2005 to: *bringing 75 million hectares of existing forest protected areas under improved management to achieve conservation and development outcomes* by 2010. To evaluate progress towards this target the Alliance developed a simple site-level Tracking Tool to facilitate reporting on management effectiveness of protected areas within WWF and World Bank projects. The Tracking Tool has been built around the application of the WCPA Framework and Appendix II of the first edition of the Framework document has provided its basic structure. After being tested and modified over a three year period, the Tracking Tool has been operational since 2003, and is being systematically and periodically used in all forest protected area projects supported by WWF and the Alliance.[76]

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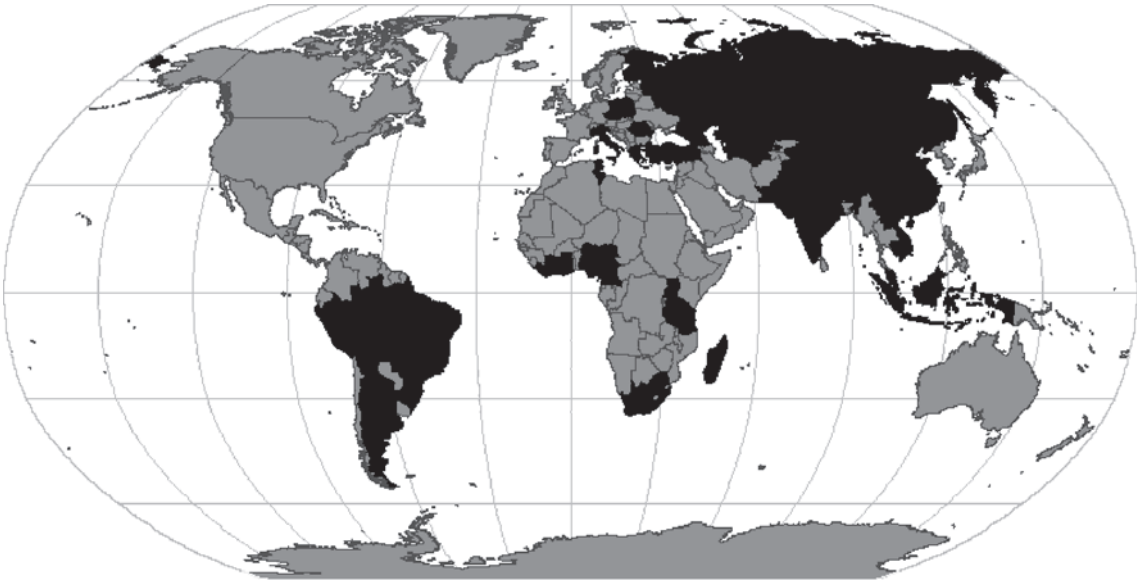
[74] Staub and Hatziolos (2004).

[75] Dudley and Stolton (1999).

[76] Stolton *et al.* (2003).

Figure 14. The Tracking Tool use worldwide: The Tracking Tool has been used in 37 countries: Africa (28 forest protected areas), Asia (65), Europe (74), Latin America (39)



Objectives of the Tracking Tool

Although the Tracking Tool has been developed to track and monitor progress towards the Alliance target, it can also be used more generally to help monitor progress towards improving management effectiveness. The tool's objectives are that it should be:

- Capable of providing a harmonized reporting system for protected area assessment;
- Suitable for replication;
- Able to supply consistent data to allow tracking of progress over time;
- Relatively quick and easy to complete by protected area staff, and thus not reliant on high levels of funding or other resources;
- Easily understood by non-specialists;
- Nested within existing reporting systems to avoid duplication of effort.

The Tracking Tool provides a composite measurement across 30 parameters, integrating all six components of management (context, planning, inputs, process, outputs and outcomes) and is designed around a system that provides four alternative text answers to each question and a datasheet that provides important contextual information. The four answers have an associated score to summarise progress and data fields to record notes about the answers and steps to be taken to improve the management issue if necessary (see below).

Although all six elements of the Framework are included, most of the questions relate to issues of planning, inputs and process. The Tracking Tool is thus too limited to allow a detailed evaluation of outcomes. Clearly though, however good management is, if biodiversity continues to decline, the protected area objectives are not being met. Therefore the question on condition assessment has disproportionate importance in the overall Tracking Tool. This means that overall scores obtained from the tool should be treated with caution as the scoring system is not weighted, and clearly some questions are more crucial to the effectiveness of the park than others. The tool does however allow for progress to be measured over specific management issues, for example monitoring activities or the level of community involvement.

The basis of the Tracking Tool is thus simplicity and low cost. But a minimum complexity is needed for the tool to be effectively used. Ideally, the questionnaire should be completed as part of a discussion between, for instance, the project officer/task manager, the protected area manager and a representative of local stakeholders. A useful part of the questionnaire for the purpose of project oversight and management improvement is the section on "comments" and 'agreed next steps'.

The objectives of the Tracking Tool, to be quick and simple, also mean it has limitations as to what it can achieve. It should not, for example, be regarded as an

Table 13. Example of some of the Tracking Tool's questions and answers

Issue	Criteria	Score	Comments	Next steps
Law enforcement Can staff enforce protected area rules well enough? *Context*	The staff have no effective capacity/resources to enforce protected area legislation and regulations	0		
	There are major deficiencies in staff capacity/resources to enforce protected area legislation and regulations (e.g. lack of skills, no patrol budget)	1		
	The staff have acceptable capacity/resources to enforce protected area legislation and regulations but some deficiencies remain	2		
	The staff have excellent capacity/resources to enforce protected area legislation and regulations	3		
Protected area objectives Have objectives been agreed? *Planning*	No firm objectives have been agreed for the protected area	0		
	The protected area has agreed objectives, but is not managed according to these objectives	1		
	The protected area has agreed objectives, but these are only partially implemented	2		
	The protected area has agreed objectives and is managed to meet these objectives	3		
Current budget Is the current budget sufficient? *Inputs*	There is no budget for the protected area	0		
	The available budget is inadequate for basic management needs and presents a serious constraint to the capacity to manage	1		
	The available budget is acceptable, but could be further improved to fully achieve effective management	2		
	The available budget is sufficient and meets the full management needs of the protected area	3		

Mongolia RAPPAM assessment, 2005 © *Alexander Belokurov*

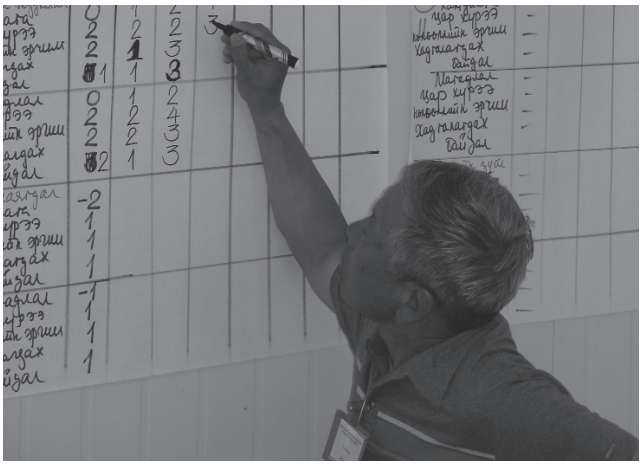
independent assessment, or as the sole basis for adaptive management, and should certainly not replace more thorough methods of assessment for the purposes of adaptive management. In spite of these limitations, the Tracking Tool has proven to be a useful instrument to build a baseline on management effectiveness, for tracking progress overtime, for providing critical information about portfolio-wide issues that need to be addressed as a priority, and for putting in place a simple monitoring system in sites that will not afford to develop a more detailed monitoring system in years to come.

Using the methodology

The Tracking Tool has been used to survey the effectiveness of the WWF portfolio of 206 forest protected areas, in 37 countries in Europe, Asia, Africa and Latin America, initially in 2003/4 and then repeated during 2005/6. The World Bank has time series data for project sites in several countries, including Bolivia, India, Philippines, Indonesia and the Central Asian republics. The Global Environment Facility (GEF) has adopted the Tracking Tool as a simple impact monitoring indicator, and recently China and India have adopted the tool as part of their national protected area monitoring systems. To aid adoption the tool has been translated into many languages.

The results of the WWF survey of 2003/4 were analysed in a global survey, at the time the widest sampling of countries undertaking protected area management effectiveness using a consistent methodology.[77] Some key findings include:

- In general, issues relating to legal establishment, biodiversity condition assessment, boundary demarcation, design and objective setting seem to be satisfactorily addressed in the protected areas sampled, while activities relating to people (both local communities and visitors) are less effective, as are management planning, monitoring and evaluation, budget and education and awareness.
- Staff numbers correlate well with good biodiversity condition and with overall management effectiveness. Adequacy of training is patchy and many protected areas with low staffing levels also reported that staff faced serious shortfalls in training and capacity building. There are dramatic differences in average staff numbers in different parts of the world, with Latin America generally having far lower staffing levels.
- There seems to be a very good correlation between the success of a protected area in education and awareness-raising and its overall effectiveness, with the highest correlation coefficient out of all those tested. This is highly significant in terms of future interventions because education was one of the issues in which many parks scored lowest.
- The analysis suggests that good monitoring and evaluation system are also closely correlated to those protected areas where biodiversity is best being conserved. Unfortunately, few protected areas reported having comprehensive monitoring and evaluation programmes.
- Protected areas face a series of critical threats. The most severe threats to forest protected areas identified spontaneously by respondents were poaching (identified in a third of protected areas), encroachment and logging (mainly illegal, but also legal logging), with collection of non-timber forest products also being a common problem. These four were considered to be key threats in more protected areas than all other problems added together.
- Law enforcement and surveillance was by far the most important management activity identified, listed by over a third of all sites, followed by working with regional authorities and with local communities, management planning, building institutional and governance capacity and ecotourism. Enforcement also shows one of the strongest relationships to management effectiveness.



Mongolia RAPPAM assessment, 2005 © *Alexander Belokurov*

As well as indicating trends on the status of the WWF portfolio, the analysis looked at the effectiveness of the Tracking Tool as a methodology. The analysis assessed the extent to which the effectiveness of individual management actions correlated with other actions. Analysis of correlation coefficients suggested a high degree of matching between elements. Overall staff numbers are most highly correlated with the largest number of other items, followed by resource management, provision of equipment and education and awareness. Other important elements included monitoring and evaluation, personnel management and visitor facilities.

[77] Dudley *et al.* (2004).

The analysis also assessed the significance of the overall score. As noted above, WWF and the World Bank have been extremely cautious about the use of the overall "score" generated by filling in the various questions in the Tracking Tool. There were several reasons for this:

- Concern that the assessment be seen by protected area staff as a judgement rather than a management tool.
- Recognition of the difficulty in comparing between protected areas when reporting is done by different people (who may have very different attitudes to and responses toward self assessment for instance).
- Caution about the accuracy of the tracking tool as anything more than a quick assessment of strengths and weaknesses.

However, the analysis found that most individual questions correlate fairly highly with the total score, the exceptions being those relating to legal status, protected area design, local communities and Indigenous people.[78] This suggests that the total score apparently correlates reasonably well with most individual scores and thus can serve as a reasonably good indicator of overall management effectiveness.

Conclusions

The adoption of the Tracking Tool by the GEF, World Bank and WWF, three of the largest international donors for protected areas and biodiversity in developing countries, means that there is now a simple global monitoring system in place for management effectiveness. This simple scorecard is also likely to prove a popular tool for reaching the CBD target of 30 per cent of all protected areas to be assessed for protected area management effectiveness, especially in countries where technical and financial resources are limited.

[78] These conclusions result from a Cronbach Coefficient Alpha analysis.

Case Study VII

State of the Parks assessment: New South Wales, Australia

by Marc Hockings, University of Queensland, Peter Stathis, NSW Department of Environment and Conservation and R.W. (Bill) Carter, University of Queensland

Wollemi National Park, New South Wales © *Shane Ruming*

Introduction

Australia has a federal system of government in which the primary responsibility for land and conservation management lies with State Governments. Hence the vast majority of National Parks and other conservation reserves are managed by authorities at the State level. The New South Wales National Parks and Wildlife Service (NPWS) is responsible for management of over 650 protected areas within that state totalling almost 6 million hectares.

New South Wales produced its first State of the Parks report in 2001.[79] This report was primarily an introduction to the NPWS and to its goals for the park system. It contained descriptive information about the parks, their values and the pressures they face but did not include a structured or comprehensive assessment of the conservation status of the parks or the effectiveness of management. In late 2003, the NPWS embarked on a process to prepare a new State of the Parks report that would provide a stronger focus on assessing and reporting performance in park management. At the same time as this initiative was commencing, the NSW Auditor-General was conducting a performance audit of the Service.[80] This audit concluded that: "the Service has yet to:

- clarify what constitutes success in reserve management
- develop an adequate information base to measure its success.

Consequently the Service cannot reliably determine how well it conserves and protects our natural and cultural heritage. This is a common situation for like agencies… To support continuous improvement and accountability, we recommend the Service:

- establish specific objectives and priorities for reserve management
- implement a comprehensive system to measure and evaluate its results.

We note the Service has major initiatives in train to this end and recommend these be given high priority."

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[79] NSW National Parks and Wildlife Service (2001). *State of the Parks 2001: An overview of the conservation values of NSW and their management within the parks system.* NSW National Parks and Wildlife Service, Sydney.

[80] NSW Audit Office (2004). *Performance audit: managing natural and cultural heritage in parks and reserves: National Parks and Wildlife Service.* The Audit Office of New South Wales, Sydney.

Purpose and objectives

Objectives established for the State of the Parks system are to:

- inform planning and decision-making at all levels, based on a "learning by doing" or adaptive management approach;
- provide information on how well NPWS is achieving its objectives;
- create clear and systematic links between management objectives and outcomes;
- better allocate funds and resources; and
- promote effective communication of management performance to communities.

It was recognised that such a system would also benefit staff by providing greater clarity about expectations of management and greater certainty about the availability of resources, hence making their job easier.

Developing the assessment system

Information for the State of the Parks report was collected in two primary ways. Qualitative information was collected via a staff-based assessment system. This assessment was developed using the WCPA Framework. The assessment instrument collected information on reserve values, threats to those values and the status of planning. It also identified and assessed the relationship between NPWS and stakeholders. Management performance was then scored in relation to 30 indicators of management effectiveness using a four point scale. These indicators covered all six elements of the WCPA Framework. Additionally, quantitative data was collected on a set of 15 indicators in a sample of 22 reserves.

The assessment instrument was created and refined in consultation with park managers to ensure it covered all relevant aspects of park management and would provide useful results to inform decision making. Draft versions were piloted during the development process to give park managers confidence in its adequacy in assessing management effectiveness. The survey was completed in early 2004 for all of the 639 parks (all the parks gazetted as at 30 June 2003) by field staff with an excellent understanding of the on-ground management of those parks. Where objective information was available it was used by park managers in completing the survey. However, in the absence of these data, staff were required to make subjective assessments of park management based on strict assessment criteria.

To ensure that these data were comparable across the state, verification methods were built into the data collection process. Before the assessment was undertaken, workshops were held across the state to train staff in the system. To further assist park managers in completing the assessment, detailed explanatory guidelines were provided. To ensure that there was consistency in the responses to the assessment, all 639 parks were internally verified by the relevant area and regional managers who looked for consistency in assessment across the range of parks for which they were responsible. Managers were permitted to adjust field staff assessments if they provided a clear justification and discussed their proposed changes with the relevant staff members. This process was designed to minimize inconsistencies that arose due to the different perceptions of individuals. Staff were also encouraged to complete the assessment in groups, again to reduce potential inconsistencies associated with individual opinions.

Following an initial data collation period, in mid 2004 the survey data underwent a comprehensive, two-stage audit by a team of independent representatives from the NPWS Audit and Compliance Committee. The aim of the audit was to verify that the process used in developing the assessment followed accepted principles and was designed to capture appropriate data for determining the condition and management of the NSW park system. The first stage involved an investigation of the development of the system, and the collection and analysis of the associated data. The assessment responses for a sample of 30 parks (five per cent) were then examined in detail by NPWS staff with excellent knowledge of the parks but who had not participated in the data collection. The responses were scrutinised for both accuracy and reliability. Further validation of a small number of survey responses was carried out at a series of regional workshops to discuss the success of the first survey. This involved a detailed interview with the staff member who completed the assessment, their area manager and their regional manager. These staff were asked to describe their rationale for the different responses to ensure they had correctly interpreted the question and provided adequate justification for their responses. The conclusion of the audit process was that while there were some differences in the way in which staff completed the assessments, the consistency of the responses was adequately robust when considered at the statewide level. Finally, at the time of data analysis, the full data set was scanned for anomalies. Minor inconsistencies were identified and adjusted in consultation with ranger or manager staff.

Table 14. NPWS State of the Parks Report: Summary of Findings

Item	Key findings of assessment		
Management planning	• 74 per cent of the total area of the NSW park system is covered by an approved plan of management or a draft on exhibition. • Planning effort has increased exponentially since 1995. • Having a plan has a positive impact on many aspects of park management.		
Knowledge base for planning and management of natural and cultural values	• Parks constituting 70 per cent of the total area of the NSW park system report sufficient information on natural values to support planning and decision making, although there are some gaps. • Information about Aboriginal heritage is considered to be sufficient to guide planning and decision making in 45 per cent of the area of the NSW park system. • Information on historic heritage is considered to be sufficient to guide planning and decision making in 74 per cent of the area of the park system.		
Condition of natural and cultural values	• On average, 86 per cent of all flora and fauna species in NSW are protected through the park system. • Parks constituting 67 per cent of the total area of the NSW park system report that most natural values are in good condition and, although some important values are being impaired, their integrity is not currently at risk. • Park managers consider the condition of Aboriginal heritage to be generally good in parks constituting 78 per cent of the area of the NSW park system. • The condition of historic heritage is generally considered to be good in parks constituting 52 per cent of the park system.		
Most commonly reported threats to reserve values	*Threat*	*Proportion of the reserves noting this threat*	*Percentage of the reserve area noting this threat as high or severe*
	Weeds	72%	46%
	Pest animals	57%	39%
	Inappropriate fire regimes as a threat to natural or cultural values	46%	72%
Performance in pest and weed management	• Most parks in the NSW park system report having pest and weed management programmes in place. • Weed and pest animal management programmes are reported to be decreasing the impacts of these pressures on park values in parks constituting 45 and 50 per cent of the area of the park system respectively.		
Inappropriate fire regimes	• Parks constituting 89 per cent of the area of the NSW park system report having a fire management programme in place that protects natural and cultural values. • Important fire management objectives for the maintenance of ecological and cultural heritage are reported as being met in parks constituting 40 per cent of the NSW park system.		
NSW park system interest groups	• Park managers consider that they have largely positive relationships with the majority of interest groups, particularly over issues such as monitoring and evaluation, weed management and Aboriginal cultural heritage management. • Aboriginal communities are reported to be consulted and have regular input into decision making in 39 per cent of parks. • The wider community are reported to be consulted and have regular input into decision making in 51 per cent of parks.		
Managing park infrastructure	• Visitor facilities are reported to be appropriate for both the park type and the legitimate expectations of visitors in 67 per cent of parks. • Park infrastructure and assets are appropriately maintained in 68 per cent of parks, however there are some inadequacies.		
Education and interpretation	• Visitor education and awareness programmes in parks are reported to meet the needs of park management and visitors in 62 per cent of parks.		

The State of the Parks Report

The NSW NPWS State of the Parks Report was released in 2004.[81] Some key findings from the State of the Parks report are summarised in Table 14.

The State of the Parks system is being used within the NPWS as a key element of a new park management framework, as explained by Peter Stathis, Manager of the Planning and Performance Unit in the box below.

Developing a park management framework

Peter Stathis, Manager Planning and Performance Unit, Department of Environment and Conservation (NSW NPWS)

The Park Management Framework used by NSW NPWS has been adapted from the IUCN Management Framework to meet the needs of the NSW park system (see Figure 15). The NPWS model reflects the administrative and operational structures and functions relevant to a government agency. Specifically, policy and monitoring and evaluation are included as components of the management cycle while the context for management comes from community values and expectations and environmental, political, social and ecological considerations.

To illustrate one of our changes, management objectives for a State government agency emanate from a variety of places – legislation, government policy and political commitments. These are strategic drivers with no detailed operational direction. The Park Policy component of the NSW Park Management Framework translates these strategic objectives into operational measures by considering the organizational context in which the objectives set by government are to be achieved.

To be successful, the NPWS Park Management Framework needs to be more than just a conceptual model: it also needs to be an operational guide, to help us organize our work and projects, label what we do and act as a diagnostic tool for identifying gaps in our park management systems.

To do this, NPWS is developing a Park Management Guide, available to all NPWS staff. The Guide is structured around key Park Management Framework elements, objectives, policy, planning, operations, monitoring and evaluation. Everything we do as a park management agency fits into these categories. Each of these chapters will contain comprehensive guidance and listing of all park management activities that will also be cross-referenced to other chapters in the guide where appropriate.

For example, a ranger looking for guidance on pest management will be able to pick up the guide, find the objective of our pest management strategies, any related policies and plans, operational guidance for specific pest species and the related monitoring and evaluation processes for determining the effectiveness of that pest programme, both at a site and state-wide levels. Importantly, this person can enter the guide at any point and still find all of the above references easily.

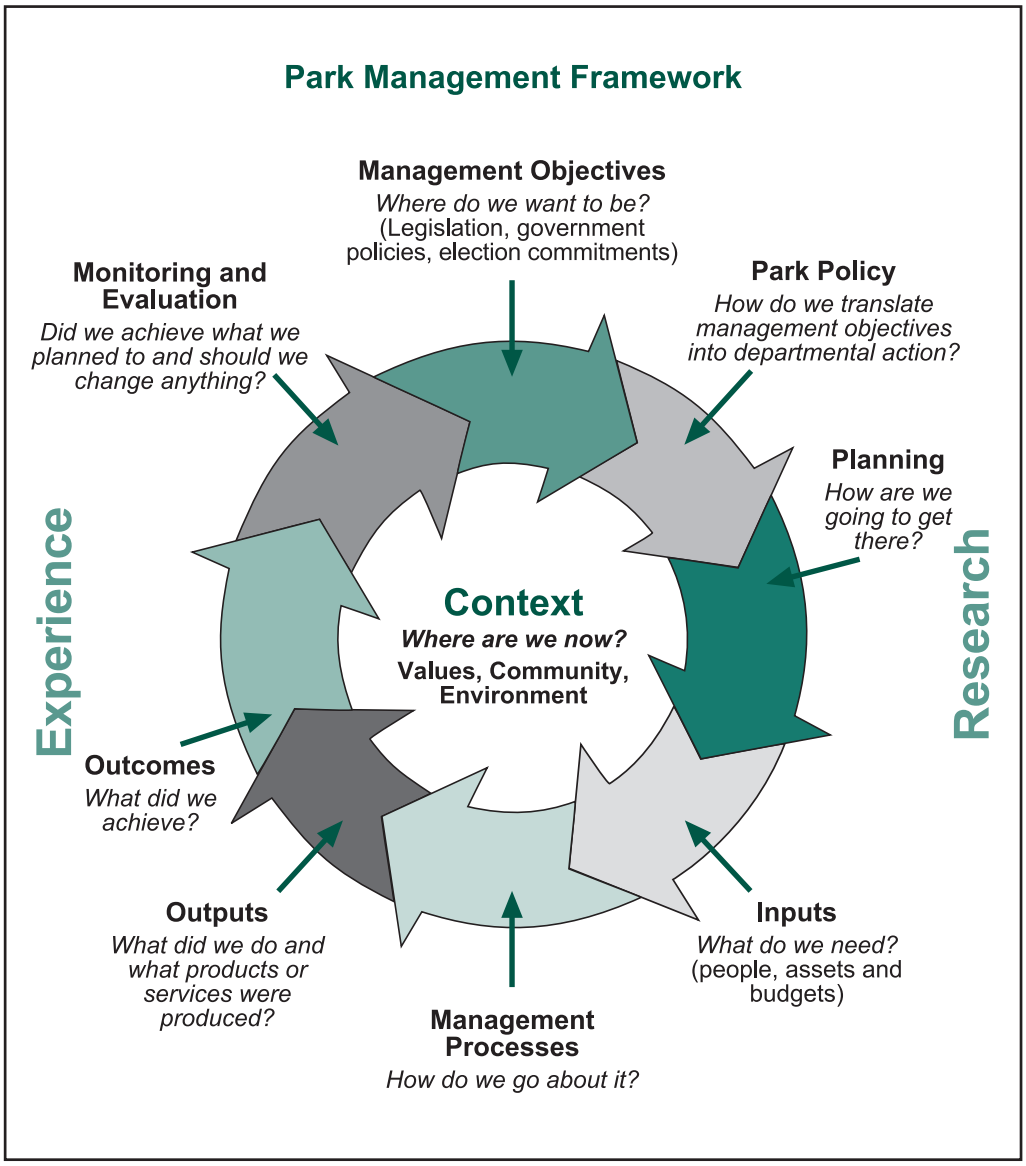
We have also defined our operational management activities to ensure that each element of the Park Management Framework is related to each major functional area of park management. We describe these major functional areas as our Service Themes. The Service Themes include Pest Animals, Weeds, Fire, Visitor Management, Cultural Heritage, General Infrastructure and Maintenance, Threatened Species, On and Off park ecological conservation.

Conclusion

Faced with the accountability requirement to publicly report on the State of the Parks, NPWS embarked on a whole-of-system assessment. Using the WCPA Framework and management effectiveness principles, a staff-based assessment was developed and implemented with extensive staff input into the design of the system. Minor adjustments to the assessment instrument are currently being made to ensure consistency in reporting,

[81] Department of Environment and Conservation NSW (2004). *State of the Parks 2004*. Department of Environment and Conservation (NSW), Sydney.

Figure 15. The NSW Park Management Framework



along with refining the processes of data acquisition and analysis. The methodology is considered to be sufficiently robust to provide an understandable overview of the status of parks, at least at the system and regional level. This has already been used to inform decision making at the highest levels within the organization. With each iteration of the assessment, it is expected that insights to trends at the area and park level will be increasingly evident to guide prioritization and planning of park activities. The process of evaluation, in itself, has also provided impetus to staff at all levels to review priorities and management action being applied, along with the cost of operational programmes. In addition, the subjective assessment has provided guidance to defining quantitative study of resource conditions and threats through identifying information gaps and thus helping to determine research needs.

The need for a robust and replicable method to measure on-park management effectiveness emerged when the NPWS was reviewing its whole system of management, reporting and decision making. The WCPA Framework galvanized these considerations to provide a core through which institutional management systems could be adjusted and linked.

While the State of the Parks process has met its principal objectives of being able to comprehensively report on park management at the whole-of-system level, its synergy with other management systems of the NSW National Parks and Wildlife Service has been realized. All management systems are now moving towards synchronicity with an underlying framework, and the foundations of an adaptive management approach to field programmes is in place.

Appendix 1

Management effectiveness and the Convention on Biological Diversity's Programme of Work on Protected Areas

The concept of assessing protected area management effectiveness has gained important official support from the Convention on Biological Diversity (CBD). Many of the protected area agencies and other users of the WCPA Framework may in the future be doing so directly as a result of their country's commitment to the CBD.

At the seventh meeting of the Conference of the Parties to the Convention on Biological Diversity in 2004, 188 countries agreed to a *Programme of Work on Protected Areas*, one of the most ambitious environmental strategies in history. The Programme aims, by 2010 (terrestrial) and 2012 (marine), to establish "comprehensive, effectively managed and ecologically-representative national systems of protected areas". To do that, it identifies four programme elements, 16 goals and 92 activities for the Parties, many of which have specific timetables. The four elements can be divided into nine main themes (see box below).

Programme element 1: Direct actions for planning, selecting, establishing, strengthening, and managing, protected area systems and sites

- Building protected area networks and the ecosystem approach
- Site-based protected area planning and management
- Addressing threats to protected areas

Programme element 2: Governance, participation, equity and benefit sharing

- Improving the social benefits of protected areas

Programme element 3: Enabling activities

- Creating an enabling policy environment
- Capacity building
- Ensuring financial stability

Programme element 4: Standards, assessment, and monitoring

- Management standards and effective management
- Using science

In the current context, the CBD Programme of Work is important because it puts equal emphasis on creating new reserves and on managing the reserve network and makes capacity building a central tenet of its approach. Management standards and effective management is a key theme in Programme element 4.

Many actions have specific deadlines. For the first time, a major intergovernmental commitment includes specific reference to management effectiveness of protected areas, which appears in several of the actions recommended to Parties as outlined in the box.

In theory, then, all signatory countries to the CBD should be carrying out at least some management effectiveness assessments by 2010 and using these in their reports to the CBD.

Goal 4.2 - To evaluate and improve the effectiveness of protected areas management

Target: By 2010, frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and transboundary protected area levels adopted and implemented by Parties.

Suggested activities of the Parties

4.2.1 Develop and adopt, by 2006, appropriate methods, standards, criteria and indicators for evaluating the effectiveness of protected area management and governance, and set up a related database, taking into account the IUCN-WCPA Framework for evaluating management effectiveness, and other relevant methodologies, which should be adapted to local conditions.

4.2.2 Implement management effectiveness evaluations of at least 30 percent of each Party's protected areas by 2010 and of national protected area systems and, as appropriate, ecological networks.

4.2.3 Include information resulting from evaluation of protected areas management effectiveness in national reports under the Convention on Biological Diversity.

4.2.4 Implement key recommendations arising from site- and system-level management effectiveness evaluations, as an integral part of adaptive management strategies

Appendix II

Management effectiveness evaluation to support protected area management

Vth World Congress on Protected Areas: Recommendation 18

The Vth World Congress on Protected Areas in 2003 called on states and protected area managers to adopt, as a routine component of protected area management, systems for evaluating management effectiveness that accord with the principles set out in this Best Practice Guideline. The recommendations from the Congress are reproduced below in full.[82]

Effective management is needed to ensure that the values of protected areas are maintained or restored now and in the future. Evaluation of management effectiveness is a vital component of adaptive and cooperative protected area management, where managers and stakeholders work together and learn from experience.

Environmental, socio-economic and institutional monitoring and auditing in protected areas is an essential part of protected area management. It can provide useful information for assessing and tracking change in both protected areas and the wider environment, and can provide information to serve as an early warning system for environmental challenges, to recognise and replicate conservation success, and to enable effective responses to this change.

Evaluation of management effectiveness can increase the transparency and accountability of protected area management, thus assisting in cooperative management and enhancing community support. It can also provide a more logical and transparent basis for planning and for allocating resources.

At the same time there is increasing interest by governments, management agencies, NGOs and others to develop and apply systems to evaluate the effectiveness of management of protected areas.

There is also an increasing number of international institutions, governments, donors, non-governmental organisations and members of civil society that are asking for more rigorous guarantees of effective management; however there has been little enthusiasm for any overall "certification" scheme for protected areas.

In this regard, Recommendation 17 (*Protected area categories, management effectiveness, and threats*), paragraphs c, d, and e, adopted at the IVth World Parks Congress (Caracas, 1992), called *inter alia* for IUCN to develop a system for monitoring management effectiveness of protected areas and for managers and others to apply such a system and report on the findings of monitoring. In response, IUCN has prepared the publication *Evaluating Effectiveness: A framework for assessing management of protected areas* (IUCN, 2000), which provides a framework and principles for evaluation of management effectiveness.

[82] All the recommendations can be downloaded at: www.iucn.org/themes/wcpa/wpc2003/english/outputs/recommendations.htm

Therefore, PARTICIPANTS in the Workshop Stream on Evaluating Management Effectiveness at the V[th] IUCN World Parks Congress, in Durban, South Africa (8–17 September 2003):

1. AFFIRM the importance of monitoring and evaluation of management effectiveness as a basis for improved protected area management and more transparent and accountable reporting;

2. CALL on states and protected area managers (including government, private sector, NGOs, indigenous and local community managers) to adopt, as a routine component of protected area management, systems for evaluating management effectiveness that accord with the principles set out in the IUCN World Commission on Protected Areas (WCPA) Best Practice Series publication No. 6 *Evaluating Effectiveness: A framework for assessing management of protected areas*;

3. RECOMMEND that IUCN's members, in considering the IUCN Quadrennial Programme Framework for 2005–2008, ensure that it fosters cooperation with relevant partners for the purpose of undertaking a work programme on management effectiveness evaluation, which would include:

    a. Mechanisms to facilitate research and development on appropriate indicators, standards and methodologies for assessing aspects of protected area management (e.g. biodiversity conservation, ecological integrity, social, economic and governance aspects). This research should incorporate experience of protected area managers and take account of differences in various environments and parts of the world;

    b. Development of an overall minimum standards system for protected area management effectiveness globally. This system should allow for differences in capacity, conditions for measurement, and methodologies across the globe, yet provide a consistent overall indicator of management effectiveness that can complement measures of protected area coverage and distribution across nations and across biomes around the world;

    c. Development of a database of management effectiveness assessment initiatives and experts in management effectiveness assessment, This information should be made available to State Parties, protected area managers, relevant NGOs and other protected area institutions;

    d. Analysis of the results of management effectiveness evaluations to identify common regional or global trends and dissemination of findings to states/management agencies;

    e. Preparation of advice and best practice guidelines to states and protected area agencies on the most effective means of addressing significant and widespread threats to protected areas such as alien invasive species, unsustainable resource harvesting and climate change;

    f. Development and promotion by IUCN of minimum standards for evaluation systems and practices for assessing management effectiveness; and

    g. Inclusion of management effectiveness tracking in global databases of protected areas;

4. RECOMMEND that WCPA**,** on request and subject to availability of relevant experts and necessary resources, provides guidance in selection of evaluation systems and/or undertakes review of evaluation systems for protected area agencies;

5. ENCOURAGE states, protected area managers and NGOs to report on the outcomes of management effectiveness evaluations in an open and transparent way. Such reporting will help to build an informed (and hence more supportive) community and will assist in regional, national and global priority setting;

6. RECOMMEND that WCPA provide guidance on the similarities and differences between management effectiveness evaluation and State of Environment and State of Protected Area Reporting in order to enhance application of these tools in the appropriate circumstance;

7. CALL on states, protected area managers, funding bodies and NGOs to use strategies for meaningful community involvement in management effectiveness evaluation, and to include analysis of the impact of protected areas on local and indigenous communities, and the effectiveness of their involvement in management as part of the evaluation;

8. RECOMMEND that funding bodies promote the use of transparent, appropriate and credible management effectiveness evaluation in protected

areas or systems where support is being provided and provide financial and other necessary support for implementation of such systems;

9. ENCOURAGE and support the establishment and strengthening of international efforts to undertake global assessments and tracking of threats to protected areas as a basis for more informed national and international policy and action;

10. RECOMMEND that the WCPA task force on certification of protected areas investigates and makes recommendations on the suitability of and options for developing a process to move forward toward a proactive monitoring, auditing and evaluation including:

    a. Development of guidelines for minimum standards for each IUCN protected area category – with encouragement for individual countries and/or regions to adapt these to their own situations;

    b. Development of certification or verification schemes relating to management effectiveness for protected areas to give guarantees that these are meeting minimum standards to be included in national protected area networks; and

    c. Explores a certification scheme for management effectiveness for the CBD;

11. RECOMMEND that The World Heritage Centre and WCPA management effectiveness theme develop a process to strengthen the reactive monitoring scheme and to investigate options for a more formal certification scheme for Natural WH Sites;

12. RECOMMEND that WCPA works with partners to investigate options for outlining benefits and costs of certification and encourages protected area effectiveness assessment methods and certification schemes to include wider benefits from protected areas such as environmental services;

13. RECOMMEND to the parties of the Convention on Biological Diversity (CBD) include policies and actions relating to evaluation of management effectiveness when they develop policies and a work program on protected areas. These policies and work programmes could encourage Parties to the CBD to:

    a. ADOPT and INSTITUTIONALISE periodic system-wide protected area management effectiveness assessments by 2005, where:

        i. The results of such assessments are integrated into CBD reporting requirements; and
        ii. The reports are based on credible assessment systems;

    b. PROMOTE the adoption and implementation of best practice systems for assessing management effectiveness of protected areas at the local, national and regional level and support this through appropriate capacity building activities;

    c. ENCOURAGE states, protected area managers and relevant NGOs and protected area institutions to methodically and transparently use the outcomes of management effectiveness evaluation and state of parks reporting to improve management of protected areas at local, regional and state/national level; and

    d. CO-OPERATE with IUCN and WCPA in research, development and promotion of best practice systems and indicators and standards for evaluating management effectiveness of protected areas

14. RECOMMEND that the Secretariats of relevant Conventions such as the World Heritage Convention and the UNEP Regional Seas Conventions, adopt a consistent and compatible reporting framework that includes the results of management effectiveness evaluation.

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Further reading and resources

Topic	Reference	Notes
		Assessment Methodologies
General	**RAPPAM** Ervin, J. (2003). *WWF: Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) Methodology*. WWF, Gland, Switzerland. See also Case Study II in these Guidelines	The WWF Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology provides a country-wide assessment of the effectiveness of protected area management, threats, vulnerabilities and degradation. The RAPPAM methodology is already available in the following languages: English, French, Spanish, Portuguese, Russian, Mongolian, Bulgarian, Georgian, Bahasa Indonesia, Khmer, and is being translated into many others. For a download of the English version, please visit www.panda.org/about_wwf/what_we_do/forests/our_solutions/protection/rappam/index.cfm For access to the translation to other languages, please write to Lhiggins-zogib@wwfint.org
	World Bank/WWF Tracking Tool Stolton, S., Hockings, M., Dudley, N., MacKinnon, K. and Whitten, T. (2003). *Reporting Progress in Protected Areas: A Site-Level Management Effectiveness Tracking Tool.* World Bank/WWF Alliance for Forest Conservation and Sustainable Use. See also Case Study VI in these Guidelines	Commonly referred to as the Tracking Tool, this rapid assessment is being used in all World Bank/WWF Alliance protected area project sites to track changes in effectiveness of management. The system has also been adopted by the Global Environment Facility as the basis for tracking changes in management effectiveness in all GEF protected area project sites. A version of the Tracking Tool has been developed for Marine Protected Areas by the World Bank (see listing under Marine Protected Areas. The Tracking Tool is available in the following languages: Bahasa Indonesia, Chinese, English, French, Khmer, Lao, Mongolian, Portuguese, Romanian, Russian, Spanish and Vietnamese. For a download of the English version, please refer to www.panda.org/about_wwf/what_we_do/forests/our_solutions/protection/rappam/tracking_tool/index.cfm
	WWF/CATIE methodology Cifuentes, M. and Izurieta Valery, A.A. (1999). *Evaluation of Protected Area Management Effectiveness: Analysis of Procedures and Outline for a Manual.*	The WWF/CATIE evaluation methodology was developed as a structured, sequential and simple-to-use evaluation methodology, based on a scoring system which was developed to address the special needs of protected areas in Latin America.. Together with the PROARCA-CAPAS methodology, the WWF-CATIE system has been widely applied across Central America. Available in English and Spanish versions. www.iucn.org/themes/WCPA/pubs/mgteffectpdfs/PARKSfin_esp.pdf www.iucn.org/themes/WCPA/pubs/mgteffectpdfs/Art_Eng.pdf Cont.

Topic	Reference	Notes
General	**PROARCA-CAPAS scorecard** Courrau, J. (1999). *Strategy for monitoring and management of protected areas in Central America*. USA, PROARCA-CAPAS Program, The Nature Conservancy.	The PROARCA/CAPAS system is based on the 'scoring model' to evaluate protected area management developed by TNC in the early 1990's. The PROARCA/CAPAS methodology includes assessment of 43 indicators in five fields; natural and cultural resources, social, administrative, political/legal, and economic/ financial. Available online at: www.iucn.org/themes/wcpa/pubs/mgteffectpdfs/c.america-eng.pdf
	National Parks and Conservation Association State of the Parks	The National Parks Conservation Association's State of the Parks program aims to provide accurate and timely information on natural and cultural resource conditions and stewardship capacity for selected national parks in the USA. Available online at: www.npca.org/across_the_nation/park_pulse/
	The Nature Conservancy – Conservation Action Planning Low, G. (2003). *Landscape-scale Conservation: A Practitioner's Guide.* The Nature Conservancy, USA.	TNC has developed an integrated process for planning, implementing and measuring conservation success for its conservation projects. This process is called the "Conservation Action Planning (CAP)" process. The CAP Toolkit and supporting material is available at: http://conserveonline.org/workspaces/cap/CAP_Toolkit.zip/file_view
World Heritage Areas	**Enhancing our Heritage: monitoring and managing for success in natural World Heritage sites.** Hockings, M., Stolton, S., Courrau, J., Dudley, N. and Parrish, J. (2004). *The World Heritage Management Effectiveness Workbook: How to build monitoring, assessment and reporting systems to improve the management effectiveness of natural World Heritage sites. Revised Edition.* University of Queensland, Australia.	Evaluation methodology developed for detailed site level assessment. The Workbook provides guidelines and assessment tools for each element of the WCPA Framework. These tools have been designed to allow specific needs and circumstances of the site to be taken into account and to provide a means for integration of existing monitoring data into the evaluation system. While designed specifically to meet the needs of natural World Heritage sites, the methodology is applicable to any protected area. Available online at: www.enhancingheritage.net
Marine Protected Areas	**IUCN/NOAA/WWF Guidebook** Pomeroy, R.S., Parks, J.E. and Watson, L.M. (2004). *How is your MPA doing? A Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness.* IUCN, Gland, Switzerland and Cambridge, UK.	The guidebook provides a step-by-step process for planning and evaluating the management effectiveness of MPAs. It lists 42 MPA-specific indicators that MPA managers can choose to use for evaluating their site. The book draws on the work of the MPA Management Effectiveness Initiative, shaped by IUCN's World Commission on Protected Areas (WCPA) - Marine and World Wild Fund for Nature (WWF). Available online at: www.effectivempa.noaa.gov/guidebook/guidebook.html

Cont.

Topic	Reference	Notes
Marine Protected Areas	**Western Indian Ocean Guidebook** Wells, S. and Mangubhai, S. (2004). *Assessing Management Effectiveness of Marine Protected Areas: A Workbook for the Western Indian Ocean.* IUCN Eastern African Regional Programme, Nairobi, Kenya.	Available from IUCN-EARO Publications Service Unit, PO Box 68200-00200, Nairobi, Kenya. Tel: +254 20 890605-12; Fax: +254 20 890615; E-mail: earo@iucn.org or online at: www.wiomsa.org/data/content/DOCUMENTS/20051122125118 31IUCN%20BOOK%20part%201.pdf
	World Bank MPA Scorecard Staub, F. and Hatziolos, M.E. (2003). *Score Card to Assess Progress in Achieving Management Effectiveness Goals for Marine Protected Areas.* The World Bank, Washington, DC, USA.	This marine version of the World Bank/WWF Alliance Tracking Tool was prepared by the World Bank for use in Marine Protected Areas. It is available for download in English, French and Spanish versions from: www.icriforum.org/mpa/MPAeffectiveness.html
General Evaluation References		
General references	**Foundations of Success**	Foundations of Success (FOS) is a not-for-profit organization committed to working with practitioners to learn how to do conservation better through the process of adaptive management. The FOS website provides information and documentation on adaptive management and evaluation including the results of a comprehensive review of approaches to monitoring and evaluation in a range of fields including conservation. Website: http://fosonline.org/
	Conservation Measures Partnership	The Conservation Measures Partnership (CMP) is a partnership of conservation NGOs that seek better ways to design, manage and measure the impacts of their conservation actions. Two products from the CMP relevant to evaluation of management effectiveness are a Taxonomy of Direct Threats and Conservation Actions and a set of Open Standards for the Practice of Conservation. Both products are available from the CMP website at: www.conservationmeasures.org/CMP/
Selected Evaluation Studies		
Global studies	**WWF report on management of forest protected areas** Dudley, N., Belukurov, A., Borodin, O., Higgins-Zogib, L., Hockings, M., Lacerda, L. and Stolton, S. (2004). *Are protected areas working: An analysis of forest protected areas by WWF.* WWF, Gland, Switzerland.	Analysis and report on the results of application of the World Bank/WWF Alliance Tracking Tool in over 200 forest protected areas in 37 countries. Cont.

Topic	Reference	Notes
National/Regional Studies	**Management effectiveness evaluation of Finland's protected areas** Gilligan, B., Dudley, N., Fernandez de Tejada, A. and Toivonen, H. (2005). *Management Effectiveness Evaluation of Finland's Protected Areas.* Nature Protection Publications of Metsähallitus. Series A 147.	Study used an external team of evaluators who visited many of the protected areas and completed an assessment based around the elements in the IUCN-WCPA Framework combined with a RAPPAM-based assessment completed by Agency staff. The report is available in electronic format at: www.metsa.fi/mee.
	Evaluation of management effectiveness of protected areas in Catalonia Mallarach, J.M. and Varga, J.V. (Eds) (2004). *El PEIN deu anys després: balanç I perspectives.* Diversitas: 50, Universitat de Girona, Girona.	The entire methodology, including the description of all 85 indicators, and a 40 page summary of the findings can be found at the web site of Institució Catalana d'Història Natural at: www.iec.es/institucio/societats/ICHistoriaNatural/Avaluacioespais.htm
	ParksWatch	ParksWatch is a watchdog and monitoring organization that works through partnerships with in-country NGOs and individuals to conduct on-the-ground evaluations of national parks and other protected areas. Results from a series of evaluation studies of protected areas in Latin America are available online on the ParksWatch website at: www.parkswatch.org/main.php
	NSW State of the Parks 2004 Department of Environment and Conservation (NSW). (2005). *State of the Parks 2004.* Department of Environment and Conservation, Sydney, Australia.	
Marine Protected Areas	**Marine protected areas in Western Indian Ocean** Wells, S.M. (2004). *Assessment of management effectiveness in selected marine protected areas in the Western Indian Ocean.* IUCN Eastern Africa Regional Programme, Nairobi, Kenya.	A Workbook for assessing management effectiveness in MPAs in the WIO has been developed, based on the workbook and methodology developed for World Heritage sites and using the WCPA/METF Framework. This report provides the results of testing the Workbook at eight pilot sites in Kenya, Tanzania and the Seychelles. Available for download from: www.icran.org/pdf/ICRAN_IUCN_ME_study_Eastern_Africa.pdf
Individual Protected Area studies	**Tasmanian Wilderness World Heritage Area** Parks and Wildlife Service. (2004). *State of the Tasmanian Wilderness World Heritage Area – an evaluation of management effectiveness*. Report No. 1, Department of Tourism Parks Heritage and the Arts, Hobart, Tasmania.	This report is the result of a long-term process of monitoring and evaluation established for the Tasmanian Wilderness World Heritage Area using an outcomes-based evaluation approach integrated into the management cycle for the site. The report is available on CD or can be downloaded from: www.parks.tas.gov.au

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Topic	Reference	Notes
Individual Protected Area studies	**Enhancing our Heritage site reports**	Reports from project sites (Ecuador: Sangay National Park; Honduras: Río Plátano Biosphere Reserve; India: Kaziranga National Park; India: Keoladeo National Park; Nepal: Royal Chitwan National Park; Seychelles: Aldabra Atoll; South Africa: Greater St Lucia Wetland Park; Uganda: Bwindi Impenetrable National Park; United Republic of Tanzania: Serengeti National Park; Venezuela: Canaima National Park) included in the Enhancing our Heritage project are available from: www.enhancingheritage.net