



WWF
Rapid Assessment and Prioritization
of Protected Area Management
(RAPPAM) Methodology



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Pechora-Ilychskiy Nature Reserve – mixed boreal forest, Pechora River, Komi Republic, Russia
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SUMMARY

WWF's Forests for Life Programme promotes the concept of viable networks of protected areas (PA) worldwide, representing a significant percentage of each of the world's forest types. The Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) Methodology detailed in this document offers policy makers a tool for achieving that goal by enabling a rapid assessment of the overall management effectiveness of protected areas within a particular country or region.

The RAPPAM Methodology 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.

The RAPPAM Methodology includes five steps:

- ◆ STEP 1 Determining the scope of the assessment
- ◆ STEP 2 Assessing existing information for each protected area
- ◆ STEP 3 Administering the Rapid Assessment Questionnaire
- ◆ STEP 4 Analysing the findings
- ◆ STEP 5 Identifying next steps and recommendations.

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.

OVERVIEW AND BACKGROUND

ASSESSMENT AND THE MANAGEMENT CYCLE

Management systems are often described as a frequently occurring cycle of planning, implementation, and evaluation (Hockings *et al.* 2000). Assessments can evaluate each stage of the management cycle, focusing on different questions and information. These stages can include:

- a) vision, including goals and objectives, describing what the programme is trying to achieve
- b) assessment of how context – existing status, threats, and external factors – affects the ability to achieve the objectives
- c) assessment of the suitability of planning and design for achieving the objectives
- d) assessment of the adequacy of resources and inputs for achieving the objectives
- e) assessment of management processes, and their consistency with the objectives
- f) assessment of the management outputs, and their adequacy for achieving objectives
- g) assessment of the actual outcomes, and whether or not objectives were met
- h) reflection on the system as a whole, including an assessment of the weakest links and the most important areas for improvement.

The following figure shows the relationship between iterative assessments and the management cycle.

Assessment and the Management Cycle (adapted from Hockings *et al.* 2000)



WORLD COMMISSION ON PROTECTED AREAS FRAMEWORK

WWF's RAPPAM Methodology draws on an evaluation framework developed by the World Commission on Protected Areas (WCPA). In 1995, the WCPA established a task force to explore issues related to the management effectiveness of protected areas. Based on the results of the task force's findings, the WCPA has developed an overall assessment framework (Hockings *et al.* 2000) in order to provide a consistent approach to assessing protected area management effectiveness. WWF's RAPPAM Methodology is one of several ongoing efforts to

develop specific assessment tools that are consistent with the WCPA Framework.

The WCPA Framework is based on the management cycle illustrated on page 4. It includes six main assessment elements: context, planning, inputs, processes, outputs, and outcomes. WWF's Rapid Assessment Questionnaire (found at the back of this document) covers each of these elements, and is organized in accordance with the WCPA framework, as illustrated below.

Assessment Elements in WWF's Rapid Assessment Questionnaire

Context	PA Design and Planning	Inputs	Management Processes	Management Outputs	Outcomes
<ul style="list-style-type: none"> • Threats • Biological importance • Socio-economic importance • Vulnerability • PA policies • Policy environment 	<ul style="list-style-type: none"> • PA objectives • Legal security • Site design and planning • PA system design 	<ul style="list-style-type: none"> • Staff • Communication and information • Infrastructure • Finances 	<ul style="list-style-type: none"> • Management planning • Management practices • Research, monitoring, and evaluation 	<ul style="list-style-type: none"> • Threat prevention • Site restoration • Wildlife management • Community outreach • Visitor management • Infrastructure outputs • Planning outputs • Monitoring • Training • Research 	<ul style="list-style-type: none"> • Pressures

COMPARATIVE VERSUS SITE-LEVEL ASSESSMENTS

In general, the RAPPAM Methodology is designed for broad-level comparisons among many protected areas. It can answer a number of important questions: What are the threats facing a number of protected areas and how serious are they? How do protected areas compare with one another in terms of infrastructure and management capacity? What is the urgency for taking actions in each protected area? What is the overall level of integrity and degradation of each protected area? How well do national and local policies support the effective management of protected areas? What are the most strategic interventions to improve the entire system?

Although it can be applied to a single protected area, the RAPPAM Methodology is not designed to provide detailed, site-level adaptive management guidance to protected area managers. An in-depth field assessment can answer detailed site-specific questions, such as the following: What specific steps are needed to prevent or mitigate existing threats within each protected area? What are the specific needs for each protected area regarding training, capacity building, and infrastructure support? How well is the protected area managing its specific biodiversity assets?

However, the RAPPAM Methodology can be used as a framework for developing a site-level monitoring tool. To do so would require the identification of specific, site-level management criteria and indicators, using the questions in the Rapid Assessment Questionnaire as a guideline.

ASSUMPTIONS

The methodology described here is dependent upon a number of assumptions:

- a) The methodology assumes a favourable assessment climate. Since the quality of the data depends on the willingness and participation of protected area managers and administrators, a climate of trust and transparency is essential for obtaining reliable information that will provide meaningful and usable results.
- b) The methodology assumes the definition of a protected area, as agreed at the Fourth World Congress on National Parks and Protected Areas in 1992 (IUCN, 1994): “An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means”.
- c) While the methodology is aimed primarily at publicly managed protected areas rather than private lands, it could be applied to many types of privately owned protected areas. However, some questions may need to be modified, as would the overall approach, to more adequately fit the needs and circumstances of private and community-owned protected areas.
- d) This methodology was developed specifically for forest protected areas. However, it has been successfully applied to other biomes, including grassland savannahs and wetlands, by modifying and adapting the interpretations of questions in the Rapid Assessment Questionnaire. To date, it has not been applied specifically to marine protected area systems, although it has been applied to some protected areas that include marine ecosystems. If it were applied to a marine protected area system, the

A broad-level assessment, such as WWF’s RAPPAM Methodology, can also complement more detailed site-level assessments by serving as a “trip-wire” for identifying individual protected areas that may require more in-depth study, and by identifying broad programme areas or issues that may warrant a more thorough analysis and review.

Rapid Assessment Questionnaire would likely require modification.

- e) While the methodology can be applied to all six IUCN categories of protected areas, it is most applicable to categories I to IV. Category V, protected landscapes, extends beyond a single management unit, and would require indicators to measure landscape integrity, as well as a more comprehensive, community-based approach to the assessment process. Category VI, managed resources, would require more detailed indicators to measure forest management practices. The principles and criteria of the Forest Stewardship Council (FSC) could be useful tools in developing indicators for assessing the sustainability of forest management practices within managed protected areas.
- f) The methodology assumes that managers and administrators have adequate knowledge to provide sufficient and reliable data.
- g) The methodology can be applied to any number of protected areas, including a single site. However, when applied to very small numbers (e.g. six or less), the assessment process will focus more on collecting and interpreting more detailed, qualitative data, and less on comparative analyses between protected areas. When applied to large numbers of protected areas (e.g. 50 or more), it may be useful to divide the findings by region, management objective, size, or other defining characteristic.
- h) This methodology may be most useful when comparing protected areas that have similar broad objectives. If the objectives vary dramatically, the assessment team may want to divide the protected areas into groups according to similar objectives, and then analyse the data separately for each category.

STEP 1

DETERMINING THE SCOPE OF THE ASSESSMENT

The scope of the assessment should be clear prior to implementing the RAPPAM Methodology.

Answers to the following questions will influence the nature and direction, and therefore the utility, of the assessment:

- ◆ What are the specific objectives of conducting the protected area assessment?
- ◆ How will the information be used and by whom?
- ◆ Who will participate in the process?
- ◆ How will the results be communicated?
- ◆ What resources are available for conducting the assessment?
- ◆ Who will be responsible for coordinating and undertaking the assessment?
- ◆ What is the timeframe for completion?
- ◆ What are the follow-up steps planned after the assessment is completed?

Determining the scope of the assessment also includes selecting the protected areas to be assessed. In countries with very low numbers of protected areas (e.g. Mozambique, Nepal, Algeria), all protected areas can easily be included. In countries with very high numbers of protected areas (e.g. China, Brazil, United States), assessment of all areas would not be feasible. Strategies to adopt to narrow down the list include limiting the assessment to a:

- ◆ particular region, such as a province, district, state, or ecoregion
- ◆ single management category, such as national protected areas or specific IUCN categories
- ◆ specific management objective.

STEP 2

ASSESSING EXISTING INFORMATION

The second step is assessing the existing data for each protected area.

Many countries have already conducted various studies regarding protected area management effectiveness and conservation priorities. A preliminary assessment of the quantity and quality of data available for each protected area can help in selecting the protected areas to be included in the assessment, and in determining which data gaps the Rapid Assessment Questionnaire may be able to fill. Existing data may include:

- ◆ aerial photos and satellite imagery
- ◆ biodiversity reviews
- ◆ needs assessments for training and capacity building
- ◆ threat analyses
- ◆ scientific and academic research
- ◆ anthropological and sociological studies
- ◆ internal programmes and field reports
- ◆ external reports from independent agencies
- ◆ legal and policy reviews.

Existing data can either be directly incorporated into the questionnaire by the assessment team or workshop participants or used to validate the findings of the assessment. For example, aerial photos could be helpful in identifying the extent of certain pressures within the protected area; a community survey could help answer questions regarding the status and socio-economic importance of the protected area; and biological studies could help answer questions regarding the design of the protected area. Data used to confirm the assessment findings can strengthen the results if there is a high correspondence, or identify areas for further investigation if there is a low correspondence.

Whether existing data are used directly or indirectly, some issues to consider include the credibility of the source of the information, its timeliness and accuracy, and whether or not protected area managers, administrators, and stakeholder groups agree with the data.

STEP 3

ADMINISTERING THE QUESTIONNAIRE

The third step is administering the Rapid Assessment Questionnaire.

The most effective way of administering the questionnaire is to hold a participatory workshop involving protected area managers, administrators, and stakeholders. Participants discuss the questions and their interpretations, agree upon the answers, conduct the analyses, and recommend priorities and possible next steps.

WWF highly recommends the use of a participatory workshop for data collection because such an approach is likely to generate more accurate and thorough data, allow greater stakeholder participation, and be more widely accepted by protected area managers. Participatory workshops allow workshop participants to negotiate a common interpretation of each question, providing a more consistent and standardized approach to the Rapid Assessment Questionnaire system-wide. However, in some cases, a workshop format may not be effective in eliciting accurate

information. Depending on the local culture and circumstances of the assessment, a series of private interviews, followed by small workshops, may be more effective.

Depending on the circumstances of the assessment (e.g. unique cultural or biological conditions, biomes other than forests), workshop participants may consider modifying the questionnaire. Modifications may include:

- ◆ developing specific indicators and verifiers for each question
- ◆ adding new questions
- ◆ modifying the wording and/or interpretation of existing questions
- ◆ deleting some questions.

As can be seen in the accompanying case studies, modifying the questions according to local circumstances and ideas is perfectly acceptable.

ENSURING THE ACCURACY OF THE DATA

Perhaps the single most important issue to consider in administering the Rapid Assessment Questionnaire is the accuracy and credibility of the responses. There are several issues that users of this methodology may want to consider in order to ensure reliable data.

TRUST

If protected area managers are to participate fully, they must trust both the people involved as well as the assessment process itself. Therefore, it is important that the methodology is administered by someone who inspires

confidence and trust, and that the procedures, objectives, and results of the assessment process are transparent.

USE OF INFORMATION

Protected area managers will want to know how the information will be used. Will weak protected areas receive more funding, benefits, and further support? Or will they receive a lower priority in the future? Will strong protected areas be rewarded, or will they receive less funding and support? Will protected areas with high management effectiveness be targeted for

tourism and other development? What will happen to areas of less biological or social importance? Who will make these decisions and when might they be implemented? Answers to these questions should be clear from the outset.

TRIANGULATION OF DATA

The more that data can be independently confirmed, the more reliable it is likely to be.

Data can be triangulated by:

- ◆ ensuring the participation of independent non-governmental organizations (NGOs) and other stakeholders
- ◆ including simple verification techniques such as aerial photography and satellite imagery
- ◆ administering the methodology in a workshop setting so protected area managers are accountable to one another
- ◆ peer reviewing the results of the assessment.

CONSISTENT INTERPRETATION OF QUESTIONS

A portion of the workshop should include time for all respondents to fully understand and, if necessary, modify, the questionnaires and analyses. This will ensure that questions are answered in a consistent manner. Terms such as “adequate”, “appropriate”, “comprehensive”, “effective”, and “sufficient” should be interpreted in the context of local conditions. Ideally, participants will have time during the workshop to discuss and agree upon the interpretation of different terms and questions in the Rapid Assessment Questionnaire.

INTERPRETATION OF “YES”, “MOSTLY YES”, “MOSTLY NO”, AND “NO”

The format of the questionnaire is a statement with four options: “yes”, “mostly yes”, “mostly no”, or “no”. This format can help to detect general trends, rather than ascertain the exact degree of fulfilment. For example, question 13a states: “There is a comprehensive, relatively recent written management plan.” A “yes” answer would indicate that all, or nearly all, of the requirements (written, comprehensive, up-to-date) were met. A “mostly yes” answer could indicate that most of the requirements were met, were likely to be met in the near future, or were all met, but the respondent still had reservations about an unqualified “yes”. A “mostly no” answer could indicate that only a few requirements were met (e.g. there is an outdated, ineffectively written plan), or that even if most requirements are met, the results are still unsatisfactory. A “no” answer would indicate that none or almost none of the requirements were satisfied. Questions receiving a “mostly yes” or “mostly no” response should also include notes explaining why that question did not receive an unqualified “yes” or “no”.

In cases where the answer is unknown, respondents should answer according to the best available information and professional judgement, and the lack of data should be noted in the comments section.

RAPID ASSESSMENT QUESTIONNAIRE WITH GUIDANCE NOTES

This section is aimed primarily at practitioners planning to use the methodology. It includes each of the questions in the Rapid Assessment Questionnaire, as well as clarifications, justifications, examples, definitions, and/or possible indicators for each question. These notes

should serve only as a guideline; the workshop participants themselves should establish a common definition and interpretation for each question, as well as thresholds for determining a “yes”, “mostly yes”, “mostly no”, or “no” response.

Pressures are forces, activities, or events that have already had a detrimental impact on the integrity of the protected area (i.e. that have diminished biological diversity, inhibited regenerative capacity, and/or impoverished the area's natural resources). Pressures include both legal and illegal activities, and may result from direct and indirect impacts of an activity. Threats are potential or impending pressures in which a detrimental impact is likely to occur or continue to occur in the future. Examples of pressures and threats to consider in the protected area assessment include:

- ◆ **Logging** – includes legal and illegal logging
- ◆ **Conversion of land use** – includes conversion of protected land to housing, settlements, roads, agriculture, tree plantations, and other non-protected uses
- ◆ **Mining** – includes all forms of drilling, mining, and exploration of underground resources, as well as waste produced by such activities
- ◆ **Grazing** – includes grazing by livestock and fodder collection
- ◆ **Dam building** – includes dams for recreation, fishing, drinking water, and hydro-electricity generation
- ◆ **Hunting** – includes legally sanctioned hunting practices that threaten protected area resources, poaching for illegal trade, and hunting for subsistence purposes
- ◆ **NTFP collection** – includes the collection of non-timber forest products such as food, medicinal plants, building material, resins, and other resources from the protected area, either for trade or for subsistence
- ◆ **Tourism and recreation** – includes hiking, camping, skiing, horseback riding, boating, motorized vehicle use, and other types of recreation
- ◆ **Waste disposal** – includes inappropriate waste disposal from legal activities (e.g. fuel and food containers from hiking expeditions) as well as waste disposal from illegal activities (e.g. methamphetamine production, dumping of toxic materials)
- ◆ **Semi-natural processes** – includes natural processes that have been magnified by human intervention, such as catastrophic fires or insect outbreaks caused by prolonged suppression
- ◆ **Cross-boundary influences** – includes local and regional pollution and acidification, increased water runoff, nitrogen loads, and flooding from surrounding land management practices and land use; and weather fluctuations caused by global climate changes
- ◆ **Invasive alien species** – includes plants and animals purposefully or inadvertently introduced by humans (e.g. *Chromolaena*, *Lantana*, Japanese knotweed (*Polygonum*), trout, earthworms, zebra mussels).

Trends over Time

Increases and decreases may include changes in the extent, impact, and permanence of an activity.

Extent

Extent is the range across which the impact of the activity occurs. The extent of an activity should be assessed in relation to its possible occurrence. For example, the extent of fishing would be measured relative to the total fishable waterways. The extent of poaching would be measured relative to the possible occurrence of the species population. The extent of acidification from pollution would likely be measured throughout an entire protected area.

“Throughout” means that an activity occurs in 50 per cent or greater of its potential range, “widespread” means occurrence in between 15 and 50 per cent, “scattered” occurs in between 5 and 15 per cent, and “localized” in less than 5 per cent of its potential range.

Impact

Impact is the degree, either directly or indirectly, to which the pressure affects overall protected area resources. Possible effects from motorized vehicle recreation, for example, could include soil erosion and compaction, stream siltation, noise disturbance, plant damage, disruption of breeding and denning sites of key species, fragmentation of critical habitat, introduction of exotic species, and increased access for additional threats, such as poaching. “Severe” impact is serious damage or loss to protected area resources, including soil, water, flora and/or fauna, as a direct or indirect result of an activity. “High” impact is significant damage to protected area resources. “Moderate” impact is damage to protected area resources that is obviously detectable, but not considered

significant. “Mild” impact is damage that may or may not be easily detectable, and is considered slight or insignificant.

Permanence

Permanence is the length of time needed for the affected protected area resource to recover with or without human intervention. Recovery is defined as the restoration of ecological structures, functions, and processes to levels that existed prior to the activity’s occurrence or existence as a threat. Recovery time assumes that the activity ceases, and that either management interventions take place, or natural processes are allowed to occur. The degree of permanence, which could also be called resilience, will depend on such factors as the type of damage, the ability for human intervention to restore the resources, and/or the regenerative capacity of the resource itself. “Permanent” damage is damage to a resource

that cannot recover, either by natural processes or with human intervention, within 100 years. “Long term” damage can recover in 20 to 100 years. “Medium term” damage can recover in 5 to 20 years. “Short term” damage can recover in less than 5 years.

Probability

Probability is the likelihood of the threat occurring in the future, and may range from very low to very high. Factors to consider when responding to this question include the degree and pervasiveness of this activity in the past, external forces such as political pressures, and existing management constraints.

In identifying threats and pressures in the assessment process, it will be helpful to make an initial list of potential threats and pressures across the entire protected area system. This step will ensure that all protected area managers consider each of the potential threats.

Examples of Pressures and Threats with Varying Degrees

Activity	Extent	Impact	Permanence	Degree	Description and Rationale
NTFP collection	Localized (1)	Mild (1)	Short term (1)	1	NTFP collection consists primarily of mushroom harvesting for consumption by local residents. Harvesting occurs near an adjacent village, and harvesters generally leave large areas undisturbed.
Road	Scattered (2)	Moderate (2)	Medium term (2)	8	A road is planned through a portion of a protected area. The actual impact of construction will be minimized by using environmental best practices. It is a gravel access road, and will only be used seasonally by park staff and visitors with permits.
Tourism	Localized (3)	High (3)	Short term (1)	9	Tourists have recently begun to drive motorized, off-road vehicles through sensitive wetlands. Springtime vehicle use has already disrupted the mating and denning habits of large numbers of bears, considered a key species in this protected area.
Poaching	Widespread (3)	High (3)	Medium term (2)	18	The main species poached is tiger, which is extensively poached in the protected area. A large percentage of the tiger population is killed annually.
Alien species	Widespread (3)	High (3)	Long term (3)	27	<i>Chromolaena</i> covers a quarter of the park. It has rendered large areas of rhino and elephant habitat unsuitable, and is extremely difficult to control or eradicate.
Dam building	Throughout (4)	Severe (4)	Permanent (4)	64	There is a large-scale hydro-electric dam planned that would flood at least half of the protected area.

3. BIOLOGICAL IMPORTANCE – CONTEXT

3 BIOLOGICAL IMPORTANCE				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The PA contains a relatively high number of rare, threatened, or endangered species.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) The PA has relatively high levels of biodiversity.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) The PA has a relatively high degree of endemism.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) The PA provides a critical landscape function.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The PA contains the full range of plant and animal diversity.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) The PA significantly contributes to the representativeness of the PA system.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) The PA sustains minimum viable populations of key species.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) The structural diversity of the PA is consistent with historic norms.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) The PA includes ecosystems whose historic range has been greatly diminished.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) The PA maintains the full range of natural processes and disturbance regimes.

y – yes m/y – mostly yes m/n – mostly no n – no

a) *The PA contains a relatively high number of rare, threatened, or endangered species.*

Rare species are any species with very low occurrences, either naturally or as a result of human actions. Threatened species are likely to become endangered within the foreseeable future. Endangered species are in danger of extinction throughout all or a significant portion of their range.

b) *The PA has relatively high levels of biodiversity.*

Biological diversity, or biodiversity, refers to the full diversity of life, including genetic, species, community, and ecosystem variations. A response to this question should include an overall assessment of the level of biodiversity compared with that of other protected areas within the system. Biodiversity assessments may include measures of species richness, structural diversity, and ecosystem heterogeneity, as well as measures of enduring geological features, such as bedrock, soils, aspect, slope, hydrology, and altitude.

c) *The PA has a relatively high degree of endemism.*

Endemic species originate from and are confined to a particular and limited geographic area. In responding to this question, workshop participants should clearly define which geographic area will be used to determine endemism.

d) *The PA provides a critical landscape function.*

Protected areas that perform a critical landscape function include areas that have important feeding, breeding, or migration value for species whose existence would be jeopardized by the alteration of that area. Examples of critical landscape functions include a stopover site for migratory birds, critical feeding habitat for rare or endangered species, a migratory stepping stone or corridor for terrestrial species, a source population for key species, and seasonal areas important for mating and raising young.

e) *The PA contains the full range of plant and animal diversity.*

A full range of species diversity would imply that all of the species normally associated with the ecosystem types and natural communities found within the protected area are present.

f) *The PA significantly contributes to the representativeness of the PA system.*

Ecosystem types with low productivity (e.g. high altitude) are often disproportionately represented in protected area systems, while areas of high productivity are often under-represented. Protected areas with high representativeness values are those areas containing ecosystems that are poorly represented within the protected area system.

g) The PA sustains minimum viable populations of key species.

A minimum viable population of a species is the number necessary for that species to persist in the future (usually 500 years), given the random variability of population dynamics. This indicator implies that the protected area has adequate populations of key species, as well as sufficient habitat and the maintenance of natural processes needed to sustain these populations. Key species are those species whose conservation and management will likely benefit a broad range of other species. Examples of key species include:

- ◆ area-limited species (animals with particular distribution requirements, such as large home ranges, as well as rare, threatened, and endangered species)
- ◆ process-limited species (species dependent upon ecological processes such as fire or flood)
- ◆ flagship species (those species whose conservation and promotion may foster broad public support)
- ◆ keystone species (species that have a disproportionately large impact on an ecosystem, and whose removal would cause drastic and unpredictable consequences).

h) The structural diversity of the PA is consistent with historic norms.

Structural diversity is the array and configuration of species, landscape elements, and ecosystems within a landscape. Examples of structural

diversity include the diversity of forest successional patterns (i.e. seral stage diversity) and the diversity of species and community patterns across the landscape. Historic norms are conditions prevalent prior to widescale, industrial and/or intensive human disturbance.

i) The PA includes ecosystems whose historic range has been greatly diminished.

Greatly diminished ecosystems are those ecosystems that were widespread and predominant in the landscape in the past, but that have been extensively converted into other land uses. Examples include remnant patches of old-growth forests, swamps and wetlands that have been widely filled and developed, and savannah grasslands that have been converted to agriculture.

j) The PA maintains the full range of natural processes and disturbance regimes.

The natural processes of an ecosystem include processes that allow the ecosystem to function and evolve. Examples include natural disturbance and successional processes, nutrient recycling (e.g. plant decay and decomposition), reproduction (e.g. pollination, fertilization), species predation, and migration. Disturbance regimes refer to the patterns of natural disturbances, including the frequency, magnitude, intensity, and severity of these disturbances, which over time have created a landscape's structures and patterns. Examples of such disturbances include fire, flooding, ice, hurricanes, insects, and pathogens.

4. SOCIO-ECONOMIC IMPORTANCE – CONTEXT

4 SOCIO-ECONOMIC IMPORTANCE				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The PA is an important source of employment for local communities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Local communities depend upon the PA resources for their subsistence.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) The PA provides community development opportunities through sustainable resource use.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) The PA has religious or spiritual significance.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The PA has unusual features of aesthetic importance.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) The PA contains plant species of high social, cultural, or economic importance.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) The PA contains animal species of high social, cultural, or economic importance.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) The PA has a high recreational value.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) The PA contributes significant ecosystem services and benefits to communities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) The PA has a high educational and/or scientific value.

a) *The PA is an important source of employment for local communities.*

Employment may include both paid positions within the protected area, and indirect employment through services associated with the protected area (e.g. guide services and ecotourism businesses).

b) *Local communities depend upon the PA resources for their subsistence.*

Subsistence uses include protected area resources such as food, medicine, shelter, and materials which are traditionally used by local communities, and are normally excluded from the formal market economy.

c) *The PA provides community development opportunities through sustainable resource use.*

Sustainable resource use is any use of a protected area resource for economic or subsistence purposes, which is consistent with the protected area objectives, falls within the resource's regenerative capacity, and has a minimal impact on other protected area resources. Examples of sustainable resource use could include butterfly farming, sustainable harvesting and marketing of medicinal plants, and ecologically responsible ecotourism.

d) *The PA has religious or spiritual significance.*

Examples include sacred forests and sites traditionally used for religious purposes.

e) *The PA has unusual features of aesthetic importance.*

Examples include scenic vistas and geo-heritage sites (e.g. hot springs).

f) *The PA contains plant species of high social, cultural, or economic importance.*

Examples of such plants include wild relatives of food cultivars, plants used in traditional and religious ceremonies, and medicinal plants.

g) *The PA contains animal species of high social, cultural, or economic importance.*

Examples of such animals include national symbols, and animals having high food value or medicinal properties.

h) *The PA has a high recreational value.*

Sites with high recreational value include popular hiking, fishing, boating, camping, and other areas. The recreational value will depend on the frequency and intensity of the use for recreational purposes, and its importance for recreation for neighbouring communities.

i) *The PA contributes significant ecosystem services and benefits to communities.*

Examples of such services include water recharge, flood control, and prevention of desertification.

j) *The PA has a high educational and/or scientific value.*

Examples include areas with long-term scientific studies; areas with unusual features, species, or processes of scientific interest; areas with a variety of management regimes and methods; and areas close to schools and universities.

5. VULNERABILITY – CONTEXT

5 VULNERABILITY

- | y | m/y | m/n | n | |
|-----------------------|-----------------------|-----------------------|-----------------------|---|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | a) Illegal activities within the PA are difficult to monitor. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | b) Law enforcement is low in the region. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | c) Bribery and corruption is common throughout the region. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | d) The area is experiencing civil unrest and/or political instability. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | e) Cultural practices, beliefs, and traditional uses conflict with the PA objectives. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | f) The market value of the PA resources is high. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | g) The area is easily accessible for illegal activities. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | h) There is a strong demand for vulnerable PA resources. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | i) The PA manager is under pressure to unduly exploit the PA resources. |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | j) Recruitment and retention of employees is difficult. |

Notes

a) *Illegal activities within the PA are difficult to monitor.*

Examples of difficult monitoring conditions include very large, inaccessible protected areas, and the presence of activities that are inherently difficult to monitor (e.g. collection of non-timber forest products in remote, mountainous regions).

b) *Law enforcement is low in the region.*

Law enforcement includes both the direct enforcement of protected area-related laws, and judicial and legal practices such as fines and sentences, which may create a favourable climate for illegal activities.

c) *Bribery and corruption is common throughout the region.*

Bribery is the offering of money and/or favour in exchange for a relaxation of rules and regulations. Corruption is the dishonest, unequal and/or unjust application of rules and regulations.

d) *The area is experiencing civil unrest and/or political instability.*

Civil unrest includes existing or imminent armed conflicts, as well as any political instability that may limit the management effectiveness of a protected area (e.g. inability to travel safely through the protected area).

e) *Cultural practices, beliefs, and traditional uses conflict with the PA objectives.*

Examples of uses that conflict with protected area objectives could include the medicinal use of endangered species parts, recreational practices that harm protected area resources, and high levels of subsistence dependence upon species with low reproductive rates and high biological importance.

f) *The market value of the PA resources is high.*

Examples of valuable resources include high-quality marketable timber, rich mineral resources, high potential for hydropower development, and high grazing capacity.

g) *The area is easily accessible for illegal activities.*

Examples of accessibility that may facilitate illegal activities include close proximity of roads and waterways, easy access to local and international markets, and porous international boundaries.

h) *There is a strong demand for vulnerable PA resources.*

Examples of vulnerable, heavily traded resources include bear gall, rhino horn, musk pods from musk deer, and a variety of medicinal plants.

i) *The PA manager is under pressure to unduly exploit the PA resources.*

Special interests, political pressures and economic necessity may pressure a protected area manager to over exploit resources beyond that which the protected area can sustain. Examples could include pressure to increase ecotourism infrastructure, increase or begin timber harvesting, and allow more grazing.

j) *Recruitment and retention of employees is difficult.*

Examples of factors that may inhibit recruitment and retention of employees could include very low levels of unemployment, a low level of human resource capacity and skills, and prevalent, widespread disease such as AIDS.

6. OBJECTIVES – PLANNING

6 OBJECTIVES				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) PA objectives provide for the protection and maintenance of biodiversity.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Specific biodiversity-related objectives are clearly stated in the management plan.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Management policies and plans are consistent with the PA objectives.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) PA employees and administrators understand the PA objectives and policies.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Local communities support the overall objectives of the PA.

a) PA objectives provide for the protection and maintenance of biodiversity.

Although IUCN defines a protected area as an area that provides for the protection and maintenance of biological diversity and associated resources, some protected areas do not explicitly include such protection in their objectives.

b) Specific biodiversity-related objectives are clearly stated in the management plan.

Management objectives should be detailed and specific, and directly related to the maintenance and protection of key protected area resources, including key species. These objectives should be clearly stated within the management plan, as they provide the basis for critical management activities and strategies.

c) Management policies and plans are consistent with the PA objectives.

For example, annual plans should include targets that are clearly linked to specific management objectives.

d) PA employees and administrators understand the PA objectives and policies.

Protected area administrators and employees can articulate specific management objectives, and understand the rationale for the management practices and policies that they are responsible for implementing.

e) Local communities support the overall objectives of the PA.

Possible indicators of community support include low levels of conflict, low levels of illegal protected area uses, high community participation in decision making, and/or a high degree of community involvement in protected area management (e.g. volunteerism).

7. LEGAL SECURITY – PLANNING

7 LEGAL SECURITY				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The PA has long-term legally binding protection.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) There are no unsettled disputes regarding land tenure or use rights.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Boundary demarcation is adequate to meet the PA objectives.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) Staff and financial resources are adequate to conduct critical law enforcement activities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Conflicts with the local community are resolved fairly and effectively.

a) *The PA has long-term legally binding protection.*
 For example, the protected area is legally gazetted or otherwise recognized by the government, and is not subject to degazettement. In addition, long-term protection implies that rights to all protected area resources are legally protected, including timber, mineral, and water resources.

b) *There are no unsettled disputes regarding land tenure or use rights.*
 Examples could include disputes with indigenous peoples over tenure and use rights (e.g. hunting and fishing rights, legal ownership); and disputes within government agencies over jurisdiction of the park (e.g. between forestry, park, and wildlife departments).

c) *Boundary demarcation is adequate to meet the PA objectives.*
 The adequacy of boundary demarcation will vary from site to site. In some cases, a river or other natural feature may provide adequate demarcation. In other cases, clear boundaries must be marked. Adequate boundary

demarcation implies that local communities, visitors, and protected area employees understand where the boundaries are, both on maps and on the ground. Also implied is that such boundaries will be legally binding if contested in court.

d) *Staff and financial resources are adequate to conduct critical law enforcement activities.*
 Critical law enforcement activities include the prompt detection of illegal activities that negatively affect protected area resources, the detainment of individuals conducting such activities, and the prevention of such activities in the future. This law enforcement may be conducted by protected area staff, community members, extension workers, and/or local law enforcement agencies.

e) *Conflicts with the local community are resolved fairly and effectively.*
 Indicators of fair and effective conflict resolution include agreed upon dispute resolution procedures, and fair and adequate compensation for human/wildlife conflicts (e.g. livestock predation).

8. SITE DESIGN AND PLANNING – PLANNING

8 SITE DESIGN AND PLANNING				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The siting of the PA is consistent with the PA objectives.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) The layout and configuration of the PA optimizes the conservation of biodiversity.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) The PA zoning system is adequate to achieve the PA objectives.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) The land use in the surrounding area enables effective PA management.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The PA is linked to another area of conserved or protected land.

a) *The siting of the PA is consistent with the PA objectives.*
 Examples of effective siting could include the establishment of a protected area based on accurate field data (e.g. species populations and distribution, habitat analyses); and the relocation of protected area boundaries to better enable effective protected area management (e.g. to contain more areas of high-quality habitat for key species).

b) *The layout and configuration of the PA optimizes the conservation of biodiversity.*
 Examples of effective layout and configuration could include protected areas that encompass large patches of undisturbed or unmodified areas, contain a range of altitudinal gradients, include transitions between ecosystems, and are compatible with landscape level natural processes (e.g. protected area is compatible with seasonal migration patterns). This question should also consider whether the protected area is large enough to achieve its objectives.

c) The PA zoning system is adequate to achieve the PA objectives.

The zoning system may include, for example, core zones, buffer zones, resource use zones, and cultural sites. In particular, zoning policies should protect vulnerable species, sites, and processes. The degree and enforcement of zoning will depend on the level of use and degree of threat within the protected area. In rare cases, zoning may be unnecessary.

d) The land use in the surrounding area enables effective PA management.

Compatible surrounding land use includes land that has a minimal impact on the protected area resources and functioning. Examples of such land

use could include areas with low road and population densities, responsibly managed forest and agricultural lands, private game reserves, and other legally protected areas, including community protected areas and/or designated buffer zones.

e) The PA is linked to another area of conserved or protected land.

Such linkages include adjoining protected and conserved areas, as well as designated wildlife corridors. In rare cases, the translocation by park staff of large-range species (e.g. rhino, tiger, elephant) to maintain metapopulation vigour, could be interpreted as a linkage with other protected areas.

9. STAFFING – INPUTS

9 STAFFING				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The level of staffing is sufficient to effectively manage the area.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Staff members have adequate skills to conduct critical management activities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Training and development opportunities are appropriate to the needs of the staff.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) Staff performance and progress on targets are periodically reviewed.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Staff employment conditions are sufficient to retain high-quality staff.

a) The level of staffing is sufficient to effectively manage the area.

Whether staffing levels are adequate or not depends on the intensity of protected area management (e.g. the type and degree of proposed management activities), and the degree of pressures and threats. At a minimum, sufficient staffing should enable all critical management activities to take place in a timely manner.

b) Staff members have adequate skills to conduct critical management activities.

Protected area management requires a range of skills (e.g. human resource management, management planning, wildlife inventorying and monitoring, communication skills). Having adequate skills implies that employees have the training, experience, and capacity needed to perform all critical management activities.

c) Training and development opportunities are appropriate to the needs of the staff.

Examples of human resource development opportunities include long-term formal education, short-term workshops, mid-career training, study tours, job rotations, seminars, and informal exchanges. Ideally, training and development opportunities are part of a broader, long-term human resource development strategy.

d) Staff performance and progress on targets are periodically reviewed.

Staff performance reviews include needs assessments and periodic monitoring of staff outputs in relation to the goals and targets of the annual workplan.

e) *Staff employment conditions are sufficient to retain high-quality staff.*

Staff employment conditions include direct benefits (salaries, health benefits, annual leave),

intangible benefits (training opportunities, prestige) and the general working environment.

10. COMMUNICATION AND INFORMATION – INPUTS

10 COMMUNICATION AND INFORMATION				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) There are adequate means of communication between field and office staff.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Existing ecological and socio-economic data are adequate for management planning.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) There are adequate means of collecting new data.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) There are adequate systems for processing and analysing data.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) There is effective communication with local communities.

a) *There are adequate means of communication between field and office staff.*

Adequate communication implies both adequate equipment (e.g. telephones, two-way radios, faxes, computers) and adequate communication services (e.g. sufficient electricity, internet access, telephone service). Field staff includes all levels of field-based staff, including game wardens, park guards, and community outreach staff. Office staff includes all levels of office-based staff, including park managers and headquarters staff, as well as more centralized administrative staff. The adequacy of communication inputs depends on the communication needs between and within each level.

b) *Existing ecological and socio-economic data are adequate for management planning.*

Examples of ecological data include maps and other visual materials that enable spatial analyses (e.g. satellite images, land cover maps, aerial photos), geological data (e.g. soils, potential vegetation maps), biological data on protected area resources (e.g. distribution of species, plants, and natural community types), and data on ecological processes. Examples of socio-

economic data include anthropological studies, socio-economic surveys, protected area resource utilization levels, and community development needs assessments.

c) *There are adequate means of collecting new data.*

Examples of data collection equipment include GPS monitors, field glasses, cameras, surveying equipment, tape recorders.

d) *There are adequate systems for processing and analysing data.*

Data analysis systems include computer hardware and software (e.g. software programmes for GIS analyses, vegetation monitoring and analyses, population census and dynamics, and database management).

e) *There is effective communication with local communities.*

Effective communication implies that community members have access to clear communication mechanisms and processes regarding protected area-related issues that affect them.

11. INFRASTRUCTURE – INPUTS

11 INFRASTRUCTURE				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) Transportation infrastructure is adequate to perform critical management activities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Field equipment is adequate to perform critical management activities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Staff facilities are adequate to perform critical management activities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) Maintenance and care of equipment is adequate to ensure long-term use.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Visitor facilities are appropriate to the level of visitor use.

a) Transportation infrastructure is adequate to perform critical management activities.

The adequacy of transportation infrastructure (e.g. park vehicles, roads, trails, helicopter, boats, motorcycles, bicycles, and horses) depends on the intensity of management and the degree of pressures and threats. At a minimum, adequate transportation should enable all critical management activities to be conducted in a timely manner.

b) Field equipment is adequate to perform critical management activities.

Field equipment includes the full range of hiking, camping, and monitoring equipment needed to safely and effectively conduct all critical management activities (e.g. backpacks, bedrolls, tents).

c) Staff facilities are adequate to perform critical management activities.

Facilities include, for example, office buildings, research stations, field offices, staff housing, and training facilities.

d) Maintenance and care of equipment is adequate to ensure long-term use.

Maintenance of equipment, particularly of vehicles, includes regularly scheduled preventive maintenance and timely repairs. Maintenance also includes periodic upgrades of communication and data collection equipment as needed.

e) Visitor facilities are appropriate to the level of visitor use.

The adequacy of visitor facilities depends on the management objectives, the vulnerability of the protected area resources, and the intensity of use. Examples of visitor infrastructure include visitor centres, drinking water supplies, sanitary facilities, camping areas, and hiking trails.

12. FINANCES – INPUTS

12 FINANCES				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) Funding in the past 5 years has been adequate to conduct critical management activities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Funding for the next 5 years is adequate to conduct critical management activities.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Financial management practices enable efficient and effective PA management.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) The allocation of expenditures is appropriate to PA priorities and objectives.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The long-term financial outlook for the PA is stable.

a) *Funding in the past 5 years has been adequate to conduct critical management activities.*

It is likely that funding will always be tight for protected areas. In responding to this question, protected area managers should carefully reflect on whether existing funds enable critical management activities to take place. If the response is not “yes”, it may be useful to note which critical management activities are constrained by funding.

b) *Funding for the next 5 years is adequate to conduct critical management activities.*

Adequate funding may include donor commitments or pending grants, state support through taxes, protected area user fees, interest from investments and endowments, and/or any other well-defined, realistic sources of funding. Critical management activities are any activities necessary to prevent, mitigate or restore irreplaceable or unacceptable losses to natural or cultural protected area resources.

c) *Financial management practices enable efficient and effective PA management.*

Efficient and effective financial management practices include timely reporting, accurate

bookkeeping, sound budgeting procedures, and timely transfers of funds.

d) *The allocation of expenditures is appropriate to PA priorities and objectives.*

Actual expenditures are in accordance with the protected area objectives, match the annual budget, have a clearly defined rationale, and are justified by the threats, pressures, and management constraints of the protected area.

e) *The long-term financial outlook for the PA is stable.*

A stable, long-term financial outlook may include long-term relationships with and commitments from donors and partners, an endowment for protected area management, legally-binding mechanisms to fund the protected area (e.g. taxes, state support), a user fee system, and/or other financing mechanisms. As a minimum, a stable financial outlook implies a well-developed, realistic strategy to provide long-term financial sustainability. Such a strategy should neither compromise the protected area objectives, nor unduly use protected area resources beyond their capacity.

13. MANAGEMENT PLANNING – PROCESSES

13 MANAGEMENT PLANNING				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) There is a comprehensive, relatively recent written management plan.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) There is a comprehensive inventory of natural and cultural resources.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) There is an analysis of, and strategy for addressing, PA threats and pressures.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) A detailed work plan identifies specific targets for achieving management objectives.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The results of research and monitoring are routinely incorporated into planning.

a) *There is a comprehensive, relatively recent written management plan.*

At a minimum, a protected area management plan should include four elements:

- ◆ a biophysical description of the area being managed
- ◆ clearly defined goals and objectives, which are specifically linked to the biodiversity assets of the protected area
- ◆ systematic steps to achieve those goals

- ◆ mechanism and/or process for modifying the plan based on new information.

b) *There is a comprehensive inventory of natural and cultural resources.*

A comprehensive natural resource inventory includes a list of species found within the protected area, the location of key species, and identification of the critical habitat and natural processes needed to maintain these species.

A cultural resource inventory identifies the range of uses of protected area resources by local communities, and the location of important cultural sites within the protected area. In addition, resource inventories should include maps of sufficient detail to enable effective protected area management. The scale and resolution of maps may vary with the size of the protected area and the intensity of management, but protected area staff should at least have the information needed to perform all critical management activities. In many cases, a 1:50,000 or more detailed map will be needed for accurate field-level management and planning.

c) There is an analysis of, and strategy for addressing, PA threats and pressures.

A threat analysis identifies the full range of past and ongoing pressures and future threats, and prioritizes the importance of each. A threat

analysis also identifies specific steps for mitigating and restoring the impacts of past pressures and for preventing future threats.

d) A detailed work plan identifies specific targets for achieving management objectives.

A workplan, usually developed annually, describes targets for achieving management objectives, as well as specific activities needed to fulfil each of those targets. The workplan can be used to monitor staff performance and to gauge management effectiveness.

e) The results of research and monitoring are routinely incorporated into planning.

There should be clear relationships between research and monitoring data, budgeting processes, and management planning.

14. MANAGEMENT DECISION MAKING – PROCESSES

14 MANAGEMENT DECISION MAKING				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) There is clear internal organization.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Management decision making is transparent.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) PA staff regularly collaborate with partners, local communities, and other organizations.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) Local communities participate in decisions that affect them.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) There is effective communication between all levels of PA staff and administration.

a) There is clear internal organization.

Indicators of clear internal organization include defined organizational structures, clear communication channels and processes, and well-defined job descriptions.

b) Management decision making is transparent.

Examples of transparent decision making include accurate records of major decisions (e.g. reports, minutes), clearly defined decision-making procedures, and defined mechanisms for staff involvement.

c) PA staff regularly collaborate with partners, local communities, and other organizations.

Partners may include local, national, and international conservation organizations; research

institutions; schools, colleges and universities; community development agencies; local businesses; recreational groups; tourism agencies; and community volunteer groups.

d) Local communities participate in decisions that affect them.

Indicators of community participation include clear mechanisms for participation (e.g. citizen panels, advisory groups); periodic scheduling of processes for feedback on management plans and activities; and the existence of community outreach staff and programmes. The degree of community participation will depend on the degree to which local communities are affected by and/or depend upon protected area management and resources.

e) *There is effective communication between all levels of PA staff and administration.*
 Effective communication is defined as an adequate flow and timing of information needed to perform all critical management activities. Levels of staff include field levels (e.g. park guards, wardens, community extension agents),

office levels (e.g. park headquarters) and administrative levels (e.g. central planning headquarters, departmental offices). This indicator also implies effective communication among the various levels (e.g. communication between park managers).

15. RESEARCH, MONITORING, AND EVALUATION – PROCESSES

15 RESEARCH, EVALUATION, AND MONITORING					Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The impact of legal and illegal uses of the PA are accurately monitored and recorded.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Research on key ecological issues is consistent with the needs of the PA.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Research on key social issues is consistent with the needs of the PA.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) PA staff members have regular access to recent scientific research and advice.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Critical research and monitoring needs are identified and prioritized.	

a) *The impact of legal and illegal uses of the PA are accurately monitored and recorded.*
 An accurate record of protected area uses can provide a baseline from which to compare changes within the protected area. For example, understanding the degree of threat of musk deer poaching will require a clear understanding of existing musk deer populations, their reproductive rate, their importance as a food source to other species, their role in ecosystem functioning through grazing, and the number of deer poached annually.

b) *Research on key ecological issues is consistent with the needs of the PA.*
 Ecological research focuses on key species and their ecological interactions, threats and pressures to protected area resources, and/or other ecological issues clearly related to protected area objectives.

c) *Research on key social issues is consistent with the needs of the PA.*
 Social research focuses on cultural uses of protected area resources (e.g. NTFPs, subsistence uses), community and economic development opportunities (e.g. sustainable programmes in cultivation and marketing of medicinal plants), and/or other social issues

related to protected area objectives or otherwise important to the long-term management effectiveness of the protected area.

d) *PA staff members have regular access to recent scientific research and advice.*
 For example, staff have access to electronic list servers and discussion groups, scientific journals and other published materials, opportunities to attend protected area workshops and seminars, and access to networks of other protected area managers and researchers. Scientific advice is especially important when protected area staff have insufficient ecological experience.

e) *Critical research and monitoring needs are identified and prioritized.*
 Critical research and monitoring needs should clearly relate to the management objectives. Examples of critical research and monitoring needs include knowledge gaps in understanding the impact of threats on protected area resources, the underlying causes of threats, the needs of key species and their interactions with other species and natural processes, and the degree to which staff performance fulfils critical management activities.

16. OUTPUTS

16 OUTPUTS				In the last 2 years, the following outputs have been consistent with the threats and pressures, PA objectives, and annual workplan:	Notes
y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) Threat prevention, detection and law enforcement.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Site restoration and mitigation efforts.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Wildlife or habitat management.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) Community outreach and education efforts.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Visitor and tourist management.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) Infrastructure development.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) Management planning and inventorying.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) Staff monitoring, supervision, and evaluation.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) Staff training and development.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) Research and monitoring outputs.	

Management outputs are the specific products and services accomplished by protected area staff, volunteers, and community members. The adequacy of these outputs should be assessed relative to the

degree of threats and pressures, the protected area objectives, and the annual workplan. Depending on the objectives of the assessment, a list of specific outputs might also be included in this section.

STEP 4

ANALYSING THE FINDINGS

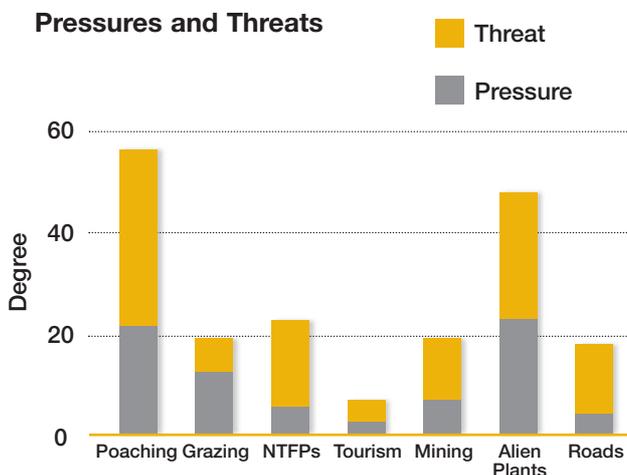
The findings from the various parts of the questionnaire can be analysed and compared in a number of ways to inform subsequent recommendations.

PRESSURES AND THREATS

This analysis includes information from each pressure and threat assessed in question 2 of the Rapid Assessment Questionnaire. The extent, impact, and permanence are combined to develop an overall degree of pressure and threat for each activity. This information can then be analysed in a variety of ways.

COMPARING MULTIPLE PRESSURES AND THREATS

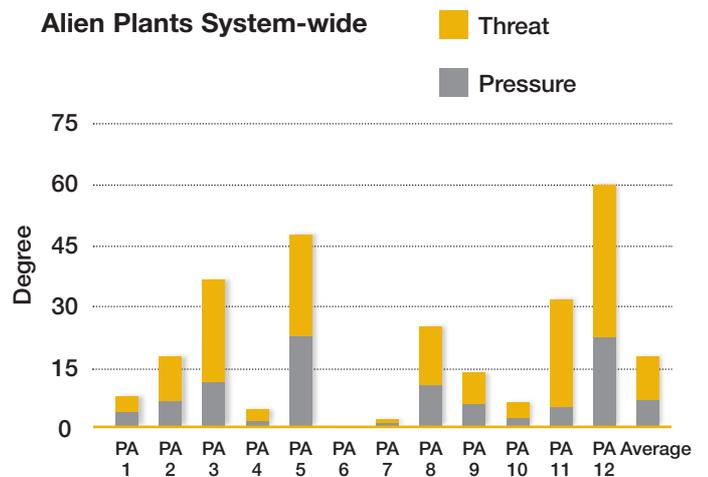
This analysis can be conducted for an individual protected area, to determine the most serious pressures and threats at site level. It can also be applied across many protected areas, by averaging the degree of pressures and threats system-wide. Such a comparative analysis can identify systemic pressures and threats, and help formulate appropriate management strategies and policies. In the example provided, poaching and alien plants constitute the most serious pressure and threat, while tourism constitutes only a minor threat and pressure to the protected area system.



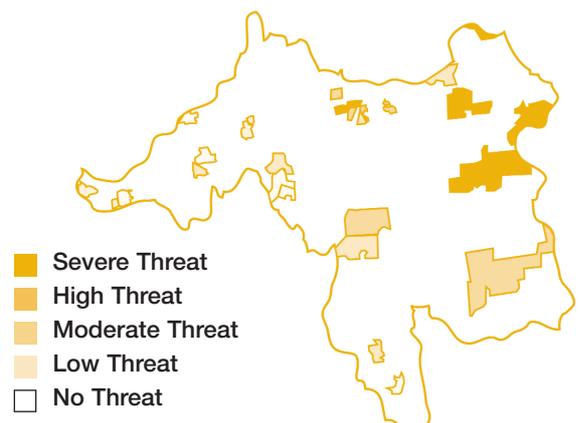
ASSESSING A SINGLE THREAT SYSTEM-WIDE

This analysis enables an understanding of the overall seriousness of each pressure and threat, the degree to which each protected area is affected by that threat, the prevalence of the threat, and, when the information is mapped spatially, the geographic distribution of each threat.

Alien Plants System-wide



Distribution of Alien Plants

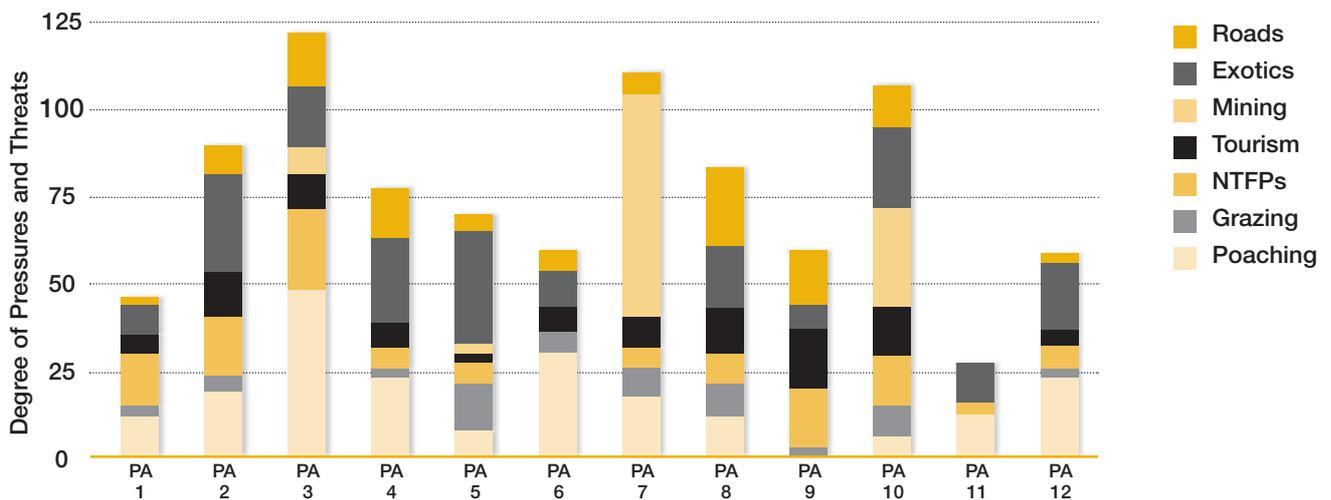


COMPARING CUMULATIVE PRESSURES AND THREATS SYSTEM-WIDE

This analysis combines the degree of pressure and/or threat for all activities within each protected area, and compares this total with

other protected areas in the system. This information can be used to determine which protected areas face the highest and lowest overall degree of pressure and threat from all activities; and which activities are the most serious within each protected area.

Cumulative Pressures and Threats



BIOLOGICAL AND SOCIO-ECONOMIC IMPORTANCE AND VULNERABILITY

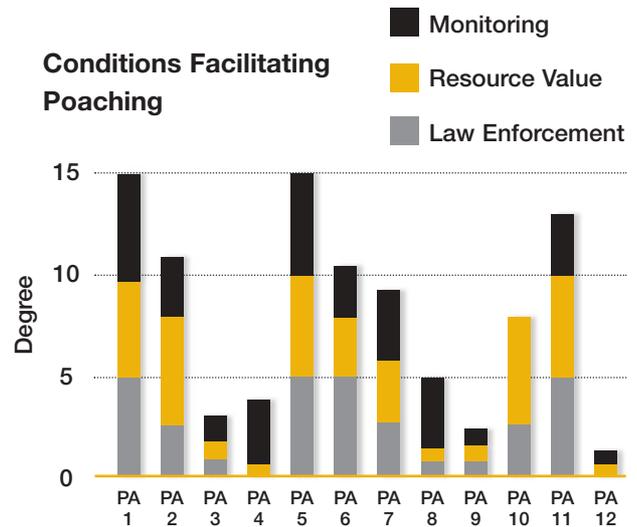
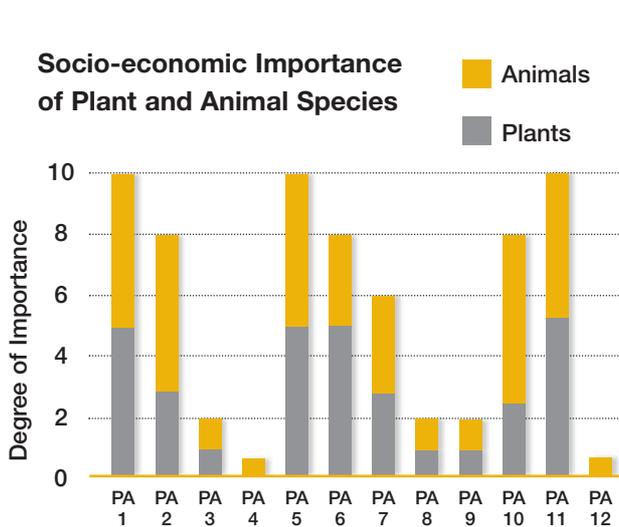
This analysis includes information from questions 3–5 of the Rapid Assessment Questionnaire, covering biological importance, socio-economic importance, and vulnerability. This information can be compared system-wide.

COMPARING DEGREES OF BIOLOGICAL IMPORTANCE, SOCIO-ECONOMIC IMPORTANCE, AND VULNERABILITY

Based on the questionnaire responses, each protected area receives a numerical index for biological importance, socio-economic importance, and vulnerability. These indices are then compared system-wide to provide an overview of the relative degree of each. This analysis can also help to identify specific protected areas with high and low scores, and give an indication of the overall level of importance and vulnerability.

COMPARING SPECIFIC INDICATORS

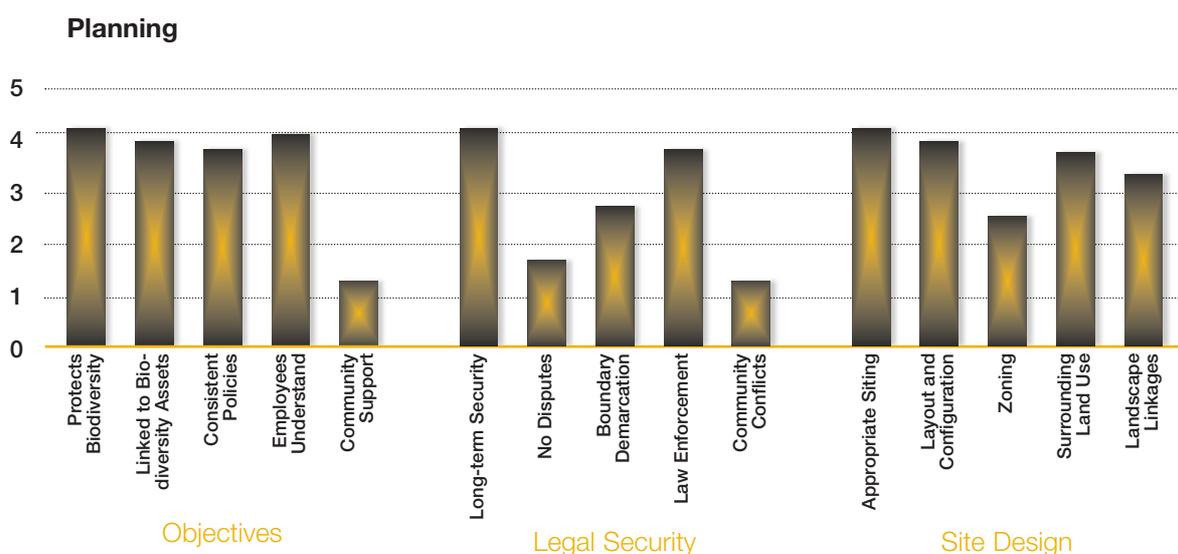
Each of the specific indicators within each category (a–j for each question) can also be analysed, either singly or in combination with other indicators, and then compared with other protected areas. This type of information can provide more detailed information regarding the biological importance, socio-economic importance, and vulnerability of the protected area system. The first example opposite identifies protected areas with high and low scores of socially and/or economically important plant and animal species (questions 4f and 4g). The second example combines questions 5a, 5b, and 5f (low law enforcement, difficulty in monitoring, and high resource value), to identify protected areas that are most likely to be vulnerable to poaching.



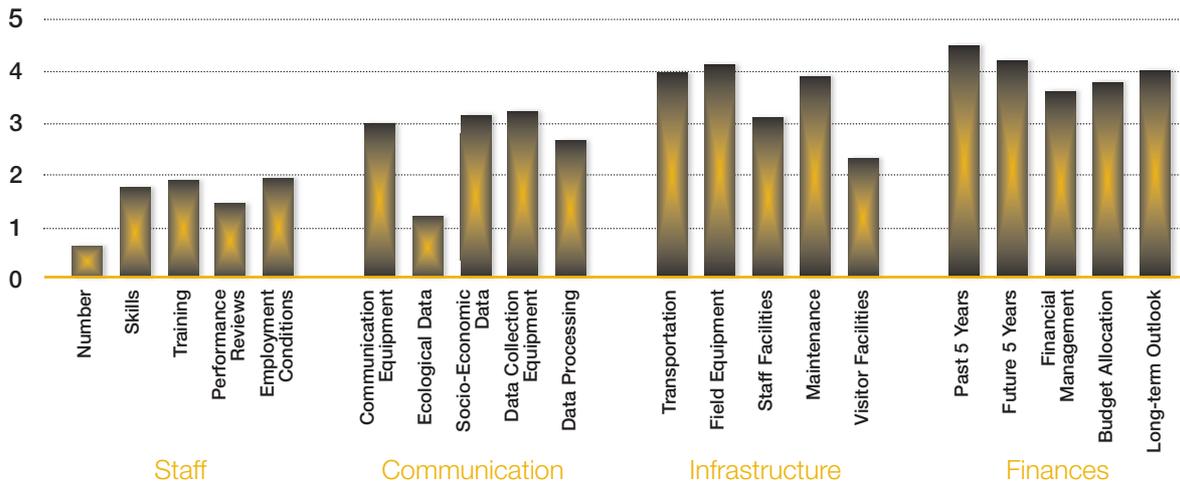
MANAGEMENT EFFECTIVENESS

This analysis covers four aspects of protected area management effectiveness: planning, inputs, processes, and outputs. Planning includes protected area objectives, legal security, and protected area site design (questions 6–8). Inputs include staff, communication, infrastructure, and finances (questions 9–12). Processes include management planning, management practices, and research, monitoring, and evaluation (questions 13–15). Outputs are the results of question 16 of the Rapid Assessment Questionnaire.

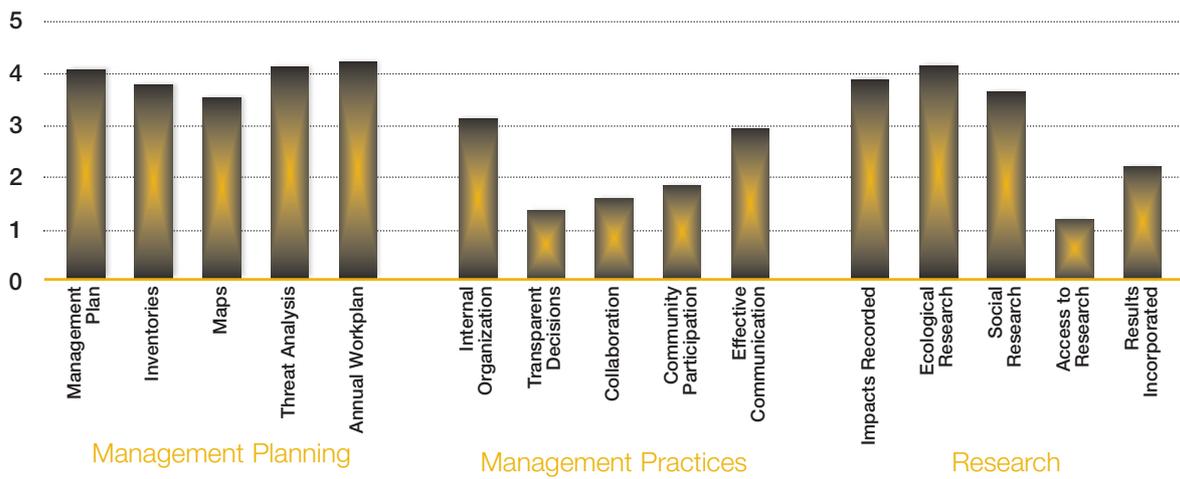
This analysis can be conducted for an individual protected area, as well as for an entire protected area system. An analysis of management effectiveness for a single site can identify specific strengths and weaknesses within that protected area, while a comparative analysis of many protected areas (by determining average scores for each question) can identify systemic strengths and weaknesses. Protected area administrators and policy makers can use this information to adjust protected area policies, allocate funds, and develop technical support programmes.



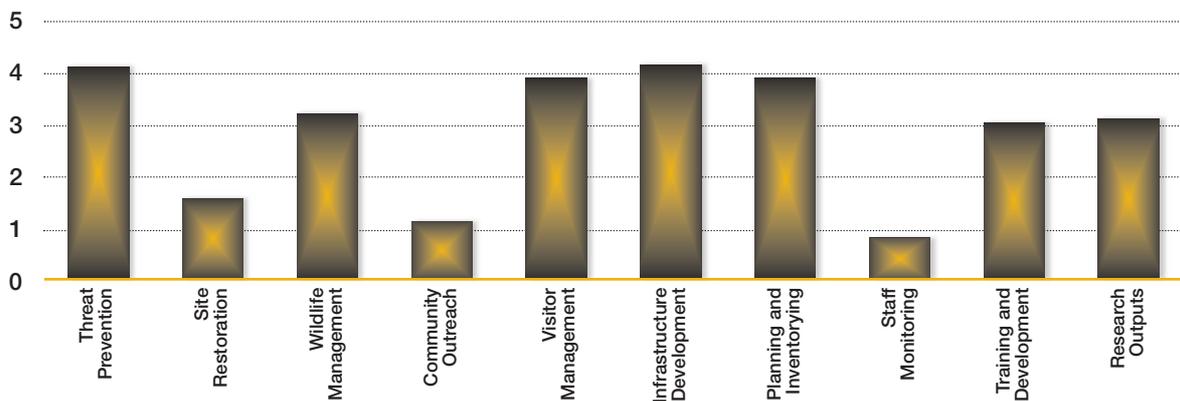
Inputs



Management Processes



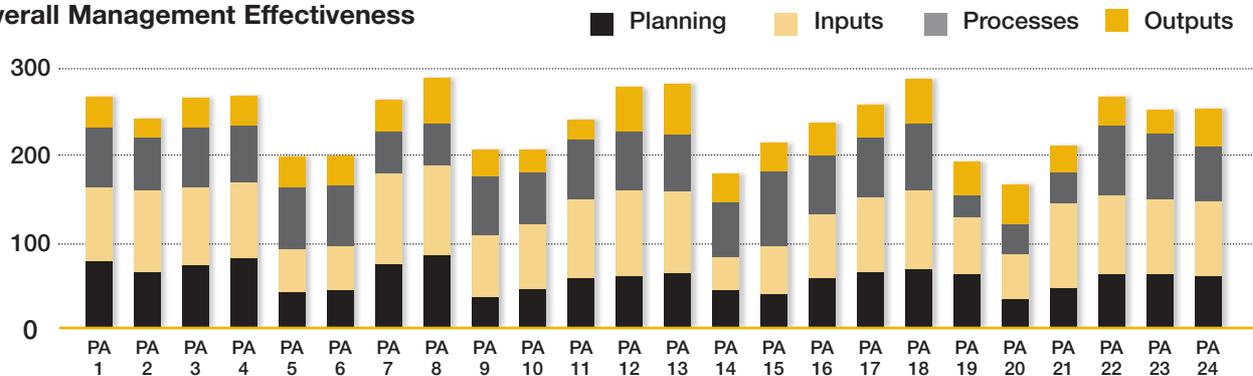
Outputs



Summarizing the results for planning, inputs, management processes, and management outputs – each protected area receives a score of between 0 and 300 – can enable a broad comparison of management effectiveness at a system-wide level and help identify systemic

weaknesses. In the following chart, for example, protected areas 14, 19, and 20 appear considerably weaker than other areas, whereas areas 8, 12, 13, and 18 appear considerably stronger.

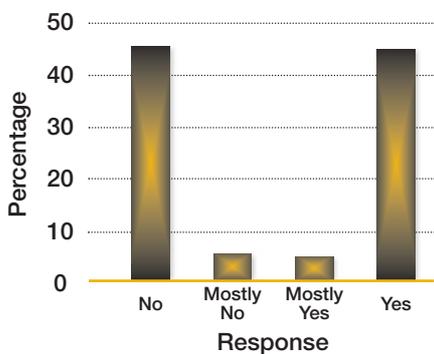
Overall Management Effectiveness



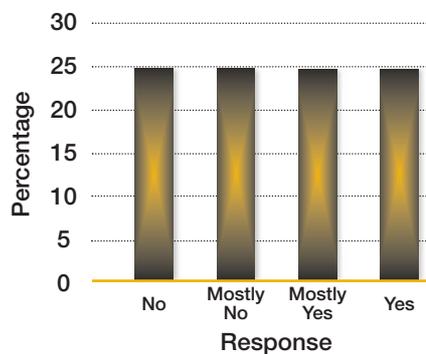
As with threats and pressures, individual questions within management effectiveness can be further analysed to better understand the distribution, prevalence, and other patterns not easily detectable by a

simple average. In the charts below, for example, both data sets give the same average score, but the distribution of responses is quite different, and would require a different policy response.

Question 10b: Ecological Data



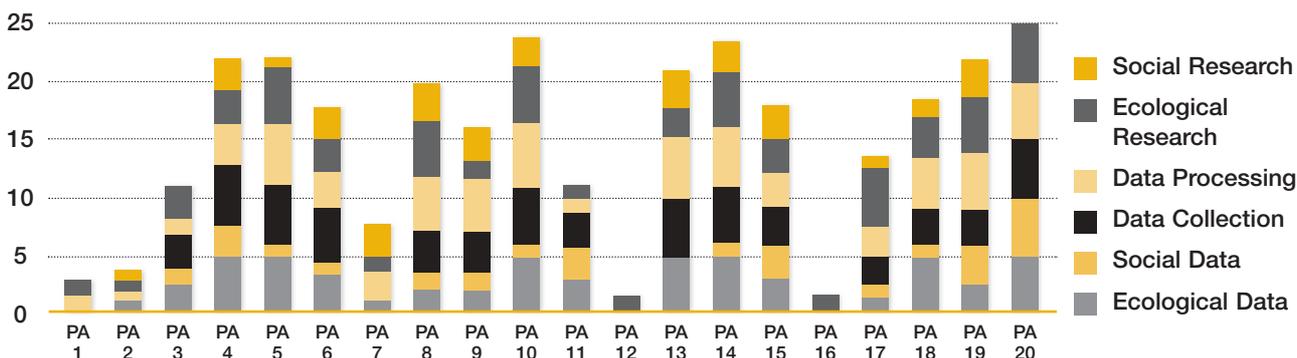
Question 10b: Ecological Data



Similarly, related questions can be analysed together to reveal otherwise undetectable patterns. The chart below, for example, includes several

data-related questions (questions 10b–10e and 15b and 15c) to better reveal strengths and weaknesses in data-related management effectiveness within each protected area.

Data-related Management Effectiveness



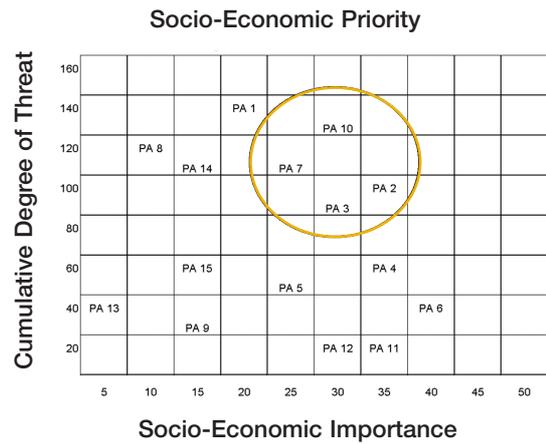
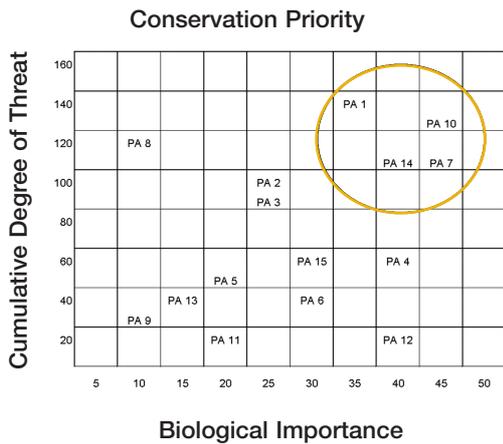
MULTIVARIATE ANALYSES

Previous analyses looked at scores from a single question, an indicator, or a set of indicators. An analysis of the relationship between questions and indicators can also give new and insightful information.

COMPARING CONTEXTUAL ELEMENTS

Contextual elements include biological and socio-economic importance, vulnerability, threats and

pressures. Comparing the degree of biological importance with the degree of threat and/or vulnerability for each protected area can indicate which areas are most at risk. Such information can help in prioritizing and scheduling support to individual protected areas. A similar analysis can compare socio-economic importance with the degree of threat and/or vulnerability.

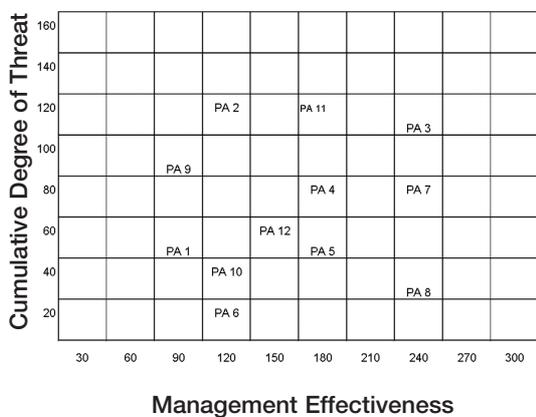


COMPARING CONTEXTUAL ELEMENTS WITH MANAGEMENT EFFECTIVENESS ELEMENTS

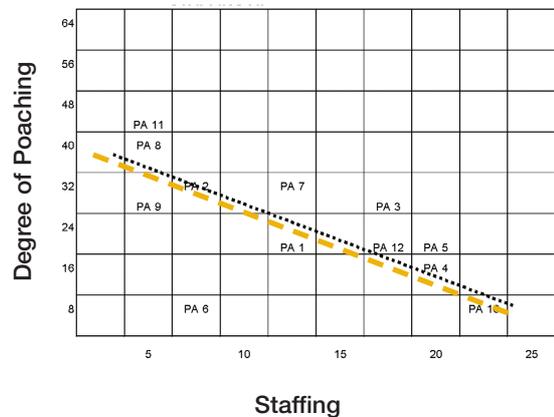
Management effectiveness elements include planning, inputs, processes, and outputs. These elements can be compared with any of the contextual elements, either singly or in combination. In the first example below, management

effectiveness is compared with the cumulative degree of threat. From the chart, there appears to be little if any correlation between the two variables. In the next example, staffing is compared with the degree of pressure from poaching. In this chart, there does appear to be a correlation between low staffing inputs and a high degree of poaching.

Management Effectiveness and Degree of Threat



Staffing and Poaching Pressures



The data from the Rapid Assessment Questionnaire can yield a wide variety of analyses. Different combinations of variables can provide new information and highlight correlations between variables

that might otherwise have remained hidden. Such analyses can help in developing strategic priorities and next steps, and in gaining a deeper understanding of the dynamics influencing management effectiveness.

GUIDANCE NOTES FOR ANALYSING DATA

SCORING FOR THREATS AND PRESSURES (QUESTION 2)

Scoring for pressures and threats (question 2 of the Rapid Assessment Questionnaire) is as follows:

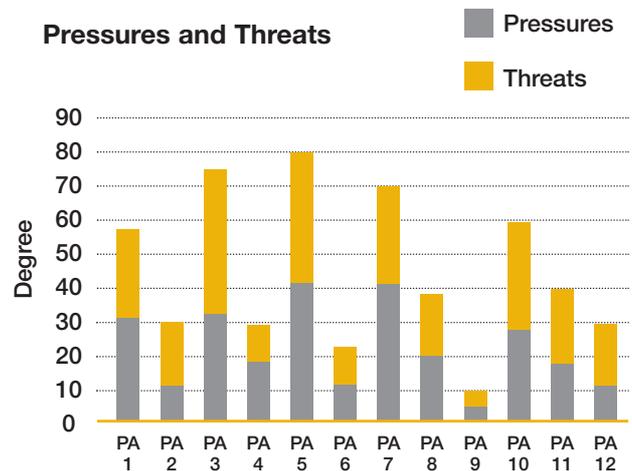
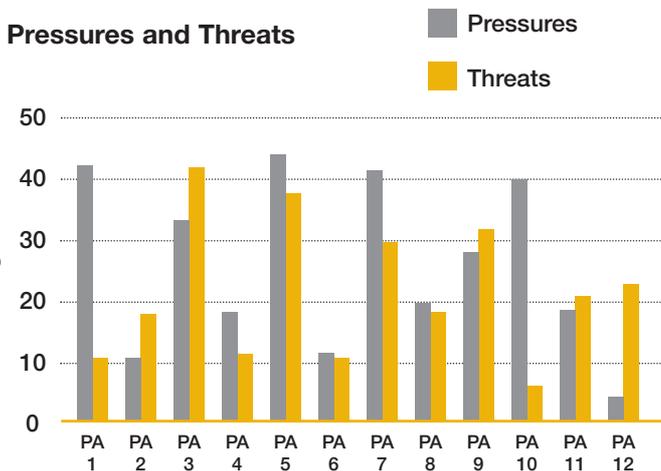
Extent	Impact	Permanence
Throughout = 4	Severe = 4	Permanent = 4
Widespread = 3	High = 3	Long term = 3
Scattered = 2	Moderate = 2	Medium term = 2
Localized = 1	Mild = 1	Short term = 1

The degree of each threat and pressure is the factor of all three elements. For example, a pressure that is widespread (3), has a moderate impact (2), and has a short-term recovery period (1), would

have a degree of 6 (3 x 2 x 1). Each threat and pressure will have a degree of between 1 and 64.

Existing pressures are likely to continue to be future threats, and should be assessed as such.

When analysing threats and pressures system-wide, there are two ways to present the data. The first is to place threats and pressures side by side, enabling a visual analysis of trends over the past five years. The second is to combine threats and pressures, enabling a visual analysis of the total degree of past and future degradation (see graphs below). Both analyses provide useful, but different, information.



SCORING FOR QUESTIONS 3–19

Scoring for questions 3–16 of the Rapid Assessment Questionnaire is as follows:
 Yes = 5 Mostly yes = 3 Mostly no = 1 No = 0

In cases where information is not available, the respondent should provide as accurate an estimate as possible, and note that the information is not based on data.

Although the data are categorical in nature, an average score can be determined in order to provide a visual display of the results, provided that the data sample is large enough. In cases where there are only a few protected areas, a distribution

chart showing the proportion of “yes”, “mostly yes”, “mostly no”, and “no” response will provide more accurate information than a simple average.

MULTIVARIATE ANALYSES

Any number of analyses involving multiple variables can be conducted. A statistical software programme may be useful in running multivariate analyses in order to detect patterns and relationships between variables. However, the examples provided in this methodology require no more than a large sheet of paper and a calculator; simply plot one variable on one axis and another variable on the other axis.

STEP 5

IDENTIFYING NEXT STEPS AND RECOMMENDATIONS

The fifth step in the process is to identify next steps by further analysing the assessment results.

Ideally, policy makers and protected area administrators would be involved in this step. There is no standard method for identifying next steps and recommendations, as each

assessment will vary. In general, however, this process involves analysing the assessment findings to identify recommendations, and creating a concrete plan of action.

RECOMMENDATIONS

Recommendations should focus on the key changes necessary to strategically improve protected area management effectiveness. These changes may involve policies, management practices, and/or funding allocation. Strategic recommendations are those changes or actions that will have the highest and most efficient impact on improving management effectiveness. Recommendations should also take into account the implications of such actions (e.g. the implications of reallocating budget items).

Below are some examples of recommendations that might be indicated by the assessment findings:

1. Review existing budget priorities, and reallocate expenditure according to the degree of threat and the conservation priority of each protected area.
2. Identify system-wide weaknesses and develop a targeted programme to strengthen those areas.
3. Identify critical knowledge and data gaps, and develop a focused research programme to fill those gaps.
4. Identify and promote governmental policies that can promote improved protected area management.

5. Identify and lobby against governmental policies that have negative consequences for protected area effective management.
6. Develop a schedule for prioritizing support to protected areas, depending on vulnerability, conservation priority, and management capacity.
7. Identify broad human resource development and capacity-building needs.
8. Identify which specific protected areas may require more in-depth assessments and site-level monitoring.
9. Strengthen threat prevention and mitigation efforts by developing appropriate programmes and targeting protected areas most at risk.
10. Explore individual threats and pressures in greater detail by identifying underlying causes and contributing factors to each activity.
11. Identify protected area managers with particularly strong management capacity, and use their skills for in-house training and human resource development (e.g. manager exchange programmes).
12. Identify which variables have a high correlation with other variables (e.g. degree of threat with management effectiveness), and therefore would have higher strategic importance.

Developing an action plan will include prioritizing recommendations, identifying agencies or departments who will be responsible for implementing the changes, and ensuring that

the financial, technical, administrative, and political support is sufficient to make these changes.

PROTECTED AREA SYSTEM-LEVEL QUESTIONS WITH GUIDANCE NOTES

When making recommendations and developing an action plan, policy makers may wish to use the additional following questions of the Rapid

Assessment Questionnaire as a basis for reviewing system-wide, policy-level weaknesses.

17. PROTECTED AREA SYSTEM-LEVEL DESIGN

17 PROTECTED AREA SYSTEM-LEVEL DESIGN					Notes
y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The PA system adequately represents the full diversity of ecosystems within the region.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) The PA system adequately protects against the extinction or extirpation of any species.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) The PA system consists primarily of exemplary and intact ecosystems.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) Sites of high conservation value for key species are systematically protected.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The PA system maintains natural processes at a landscape level.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) The PA system includes the protection of transition areas between ecosystems.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) The PA system includes the full range of successional diversity.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) Sites of high biodiversity are systematically protected.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) Sites of high endemism are systematically protected.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) The layout and configuration of the PA system optimizes the conservation of biodiversity.	

a) *The PA system adequately represents the full diversity of ecosystems within the region.*

The degree to which ecosystems are represented within the protected area system will depend on the historic range of variability of the ecosystems, and the extent to which ecosystems have been greatly diminished throughout their range. Representativeness should be assessed at both landscape and ecoregional scales.

b) *The PA system adequately protects against the extinction or extirpation of any species.*

Adequate protection for vulnerable animal species includes a system-wide analysis of minimum viable populations, and adequate

connectivity to maintain seasonal feeding, breeding, and migratory patterns. Adequate protection for vulnerable plant species includes a system-wide analysis of the degree to which rare, threatened, and endangered plants are protected within the protected area system.

c) *The PA system consists primarily of exemplary and intact ecosystems.*

Exemplary and intact ecosystems are those ecosystems that maintain a full complement of native biodiversity, a full range of natural processes and landscape patterns, and a distribution of species that is consistent with historical ranges of variability.

d) Sites of high conservation value for key species are systematically protected.

Key species that may have regional or system-wide importance include area-limited species, process-limited species, flagship species, and keystone species. High conservation value sites are those areas that provide critical resources for the survival of key species.

e) The PA system maintains natural processes at a landscape level.

Examples of landscape-level natural processes include the maintenance of fire in fire-based ecosystems and the maintenance of migratory patterns across a landscape.

f) The PA system includes the protection of transition areas between ecosystems.

Transitional areas, such as mangrove forests, riverine and marine interfaces, areas that fluctuate between grassland and forest, and areas with sharp altitudinal gradients, are often very high in biodiversity, and provide critical functioning for an array of species.

g) The PA system includes the full range of successional diversity.

Successional diversity is the pattern of species composition within an ecosystem, created by and associated with natural disturbance regimes. Successional diversity will include a full range of successional stages, including early successional, mid-successional, late successional, and climax stages.

h) Sites of high biodiversity are systematically protected.

Areas of naturally occurring high biodiversity, particularly in relation to the surrounding landscape (e.g. biodiversity hotspots), are systematically protected.

i) Sites of high endemism are systematically protected.

An endemic species originates from and exists only within a particular, limited, geographic area. Endemism is the degree to which an area contains endemic species. Areas with a proportionately high degree of endemism are systematically protected, and such areas maintain the genetic integrity and uniqueness of endemic species. As with the site level, it will be helpful to delineate a geographic area in order to determine relative degrees of endemism.

j) The layout and configuration of the PA system optimizes the conservation of biodiversity.

A well-designed protected area system includes an array of large protected areas containing exemplary and intact ecosystems, covering a range of altitudinal gradients and ecosystem transitions, within a surrounding matrix that maintains natural processes between protected areas.

18. PROTECTED AREA POLICIES

18 PROTECTED AREA POLICIES				Notes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) National PA policies clearly articulate a vision, goals, and objectives for the PA system.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) The area of land protected is adequate to maintain natural processes at a landscape level.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) There is a demonstrated commitment to protecting a viable and representative PA network.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) There is a comprehensive inventory of the biological diversity throughout the region.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) There is an assessment of the historical range of variability of ecosystem types in the region.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) There are restoration targets for under-represented and/or greatly diminished ecosystems.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) There is ongoing research on critical PA-related issues.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) The PA system is periodically reviewed for gaps and weaknesses (e.g. gap analyses).
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) There is an effective training and capacity-building programme for PA staff.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) PA management, including management effectiveness, is routinely evaluated.

a) *National PA policies clearly articulate a vision, goals, and objectives for the PA system.*

The national objectives should clearly describe what the protected area system is trying to achieve.

b) *The area of land protected is adequate to maintain natural processes at a landscape level.*

The adequacy of land cover protection will vary depending upon the degree of biodiversity, the existing land tenure patterns, the degree of modification to ecosystems, and patterns of historical variability.

c) *There is a demonstrated commitment to protecting a viable and representative PA network.*

This commitment could be assessed at all levels of government. Indicators of a strong commitment to protected areas include not only clear policy statements, but also a demonstrated and sustained financial commitment, willingness to periodically assess protected areas and create new ones if necessary, and support for private incentives for land conservation.

d) *There is a comprehensive inventory of the biological diversity throughout the region.*

Such an inventory would include a list of species found throughout the region, an

identification of key species, and a system-wide prioritization of their conservation.

e) *There is an assessment of the historical range of variability of ecosystem types in the region.*

A system-wide assessment of the historical range of variability would enable policy makers to set targets for protected area coverage and representativeness.

f) *There are restoration targets for under-represented and/or greatly diminished ecosystems.*

Restoration targets will depend on several factors, including the existing distribution and extent of ecosystem types, the degree of degradation of each, and the historic range of variability of ecosystem distribution. Restoration targets may include both protected area targets (i.e. new or expanded coverage for under-represented or greatly diminished ecosystems) and targets for land use change outside of protected areas.

g) *There is ongoing research on critical PA-related issues.*

Critical research issues are those ecological, social and/or economic issues that affect protected area integrity system-wide (e.g. influence management effectiveness, mitigate or exacerbate threats and pressures).

- h) The PA system is periodically reviewed for gaps and weaknesses (e.g. gap analyses).*
A biodiversity gap analysis is a comparison of the distribution of elements of biodiversity with their coverage in protected areas in order to identify species that are inadequately represented or protected.
- i) There is an effective training and capacity-building programme for PA staff.*
An effective capacity-building programme would include an accurate assessment of the

needs of protected area managers, staff and administration; a strategic and targeted training programme; and full financial resources to implement the programme.

- j) PA management, including management effectiveness, is routinely evaluated.*
Routine evaluations imply ongoing assessments of the status of management effectiveness.

19. POLICY ENVIRONMENT

19 POLICY ENVIRONMENT					Notes
y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) PA-related laws complement PA objectives and promote management effectiveness.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) There is sufficient commitment and funding to effectively administer the PA system.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Environmental protection goals are incorporated into all aspects of policy development.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) There is a high degree of communication between natural resource departments.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) There is effective enforcement of PA-related laws and ordinances at all levels.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) National policies promote widespread environmental education at all levels.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) National policies promote sustainable land management.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) National policies promote an array of land conservation mechanisms.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) There is adequate environmental training for governmental employees at all levels.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) National policies foster dialogue and participation with civic and environmental NGOs.	

- a) PA-related laws complement PA objectives and promote management effectiveness.*
Laws related to protected areas could include land use planning; forestry, hunting, and agriculture laws; and regulations and policies at national, regional and local levels. Complementary laws enable or enhance protected area objectives and management effectiveness.

- b) There is sufficient commitment and funding to effectively administer the PA system.*
Sufficient commitment and funding would imply secure, long-term mechanisms are in place to adequately fund the protected area system.

- c) Environmental protection goals are incorporated into all aspects of policy development.*
For example, environmental impact assessments are routinely incorporated into infrastructure development; land use planning practices control the spread of urban areas; and trade laws prohibit the sale of threatened and endangered species or their parts.

- d) There is a high degree of communication between natural resource departments.*
A cohesive, well coordinated government is likely to be better able to develop and implement a coordinated environmental plan. Examples of departments include the various ministries, agencies and administrative units for parks, forestry, wildlife, recreation, and tourism.

e) *There is effective enforcement of PA-related laws and ordinances at all levels.*

Effective enforcement implies that illegal activities are detected, and justice is fairly administered throughout the system.

f) *National policies promote widespread environmental education at all levels.*

Environmental education could include non-formal education (e.g. public service announcements, park flyers and other literature), as well as formal education (e.g. curriculum development within primary, secondary and advanced institutions).

g) *National policies promote sustainable land management.*

Sustainable land management includes sustainable forestry, agriculture, and fishing practices. Examples of such practices include the degree to which forests are independently certified as well-managed, and the degree to which farmlands are certified as “organically” or “ecologically” managed.

h) *National policies promote an array of land conservation mechanisms.*

Policies that promote land conservation may include tax incentives (e.g. for creating private

reserves or donating to charitable environmental organizations); policy support for the development of market-driven mechanisms (e.g. forest product certification); punitive measures for inappropriate land development (e.g. impact fees on housing development); as well as traditional conservation policy measures (e.g. zoning ordinances).

i) *There is adequate environmental training for governmental employees at all levels.*

Adequate training and education could include a wide array of conservation-related topics.

j) *National policies foster dialogue and participation with civic and environmental NGOs.*

Examples of policies that foster dialogue include forming partnerships between governmental agencies and NGOs; allowing NGOs to have legal standing in environmental disputes; and developing transparent mechanisms for public participation in policy development.

GLOSSARY

Biodiversity ▶ The full array of the biological diversity of life, including genetic, species, community, and ecosystem variations.

Conserved land ▶ Land that may not be formally protected, but which is managed to protect and maintain biological diversity and associated resources. Examples include independently certified well-managed forests, and landowner co-operatives managed to enhance biodiversity.

Critical landscape function ▶ Protected areas that perform a critical landscape function include areas that have important feeding, breeding, or migration values to species whose existence would be jeopardized by the alteration of that area.

Critical management activity ▶ Any management activity that prevents irreplaceable or unacceptable losses to natural or cultural resources. Examples include monitoring fragile areas, enforcement of laws within the protected area, management prescriptions and restoration measures to prevent further damage, and all planning, training and supervisory activities necessary to conduct these activities.

Cultural resource inventory ▶ An inventory of an area's cultural resources, including sites of historic, religious, economic and cultural significance, populations and habitats of species with high social importance, recreational trails and infrastructure, and other areas of cultural importance.

Endemism ▶ An endemic species originates from and exists only within, a particular, limited, geographic area. Endemism is the degree to which an area contains endemic species. It may be measured both in absolute and relative terms.

Exemplary and intact ecosystem ▶

Ecosystems that maintain a full complement of native biodiversity, a full range of natural processes and landscape patterns, and a distribution of species that is consistent with historical ranges of variability.

Extent ▶ The range across which the impact of the activity occurs.

Greatly diminished ecosystems ▶

Ecosystems that were historically widespread and a predominant feature of a landscape, and whose occurrence has been greatly diminished through extensive conversion to other land uses.

Historic norms ▶ Conditions prevalent prior to widescale, industrial and/or intensive human disturbance.

Historical range of variability ▶ The range of occurrence of different ecosystem types prior to widescale, industrial and intensive human disturbance.

Impact ▶ The degree, either directly or indirectly, to which a pressure affects overall protected area resources.

Key species ▶ Those species whose conservation and management will likely benefit a broad range of other species.

Management plan ▶ A management plan is simply a formal way of recording management actions and decisions. At a minimum, a protected area management plan should include four elements:

- ◆ a biophysical description of the area being managed
- ◆ clearly defined goals and objectives, which are specifically linked to the biodiversity assets of the protected area

- ◆ systematic steps to achieve those goals
- ◆ a mechanism and/or process for modifying the plan based on new information.

Minimum population ▶ The minimum population of a species necessary for that species to persist in the future (usually 500 years), given the random variability of population dynamics.

Natural disturbance regime ▶ The pattern of various natural disturbances, including the pattern of frequency, magnitude, intensity, and severity of these disturbances, which have historically created a landscape's structures and patterns. Examples of such disturbances include fire, flooding, ice, hurricanes, insects, and pathogens.

Natural processes ▶ Those processes that allow an ecosystem to fully function and evolve. Examples of natural processes include natural disturbance and succession processes, nutrient recycling (e.g. plant decay and decomposition), reproduction (e.g. pollination, fertilization), and species predation and migration.

Natural resources inventory ▶ An inventory (usually with maps) of the area's natural resources, including forest cover types, water resources, important habitat areas, occurrences of rare, threatened or endangered species, and other areas of ecological and/or social significance.

Permanence ▶ The length of time needed for protected area resources to recover from pressures, with or without human intervention; resilience.

Pressure ▶ Pressures are processes, activities, or events that have already had a detrimental impact on the integrity of the protected area (i.e. that have resulted in diminished biological diversity or capacity, and/or impoverishment of the area's natural resources). Pressures may include both legal and illegal activities and may result from direct and indirect forces.

Protected area ▶ “An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.” (IUCN, 1994). Such areas may be owned and/or managed by governments, individuals, companies, non-governmental organizations, communities, or partnerships between these groups.

Protected area system ▶ All the protected areas included in the Rapid Assessment and Prioritization of Protected Area Management Methodology.

Rare, threatened, and endangered species ▶ Rare species are any species with very low occurrences, either naturally or as a result of human actions. Threatened species are likely to become endangered within the foreseeable future. Endangered species are in danger of extinction throughout all or a significant portion of their range.

Representativeness ▶ The degree to which a protected area contributes an under-represented and/or greatly diminished ecosystem to the overall protected area system.

Structural diversity ▶ The array and configuration of species, elements, and ecosystems within a landscape.

Successional diversity ▶ Successional diversity is the full range of successional stages, including early successional, mid-successional, late successional, and climax stages, normally associated with natural disturbance regimes.

Sustainable resource use ▶ Use of protected area resources that is consistent with protected area objectives, falls within the resource's capacity to regenerate, and has a minimal impact on other protected area resources.

Threat ▶ Threats are potential processes, activities or events in which a detrimental impact is likely to occur or continue in the future.

PRESSURES AND THREATS

2 PRESSURES AND THREATS

Pressure:

- Has Has not been a pressure in the last 5 years

In the past 5 years this activity has: The overall severity of this pressure over the past 5 years has been:

- Increased sharply
- Increased slightly
- Remained constant
- Decreased slightly
- Decreased sharply

Extent

- Throughout (>50%)
- Widespread (15–50%)
- Scattered (5–15%)
- Localized (<5%)

Impact

- Severe
- High
- Moderate
- Mild

Permanence

- Permanent (>100 years)
- Long term (20–100 years)
- Medium term (5–20 years)
- Short term (<5 years)

Threat:

- Will Will not be a threat in the next 5 years

The probability of the threat occurring is:

- Very high
- High
- Medium
- Low
- Very low

The overall severity of this threat over the next 5 years is likely to be:

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- Widespread (15–50%)
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NB Make as many copies of this page as necessary to cover all the pressures and threats identified.

CONTEXT

	3 BIOLOGICAL IMPORTANCE					Notes
	y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The PA contains a relatively high number of rare, threatened, or endangered species.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) The PA has relatively high levels of biodiversity.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) The PA has a relatively high degree of endemism.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) The PA provides a critical landscape function.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The PA contains the full range of plant and animal diversity.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) The PA significantly contributes to the representativeness of the PA system.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) The PA sustains minimum viable populations of key species.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) The structural diversity of the PA is consistent with historic norms.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) The PA includes ecosystems whose historic range has been greatly diminished.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) The PA maintains the full range of natural processes and disturbance regimes.	

	4 SOCIO-ECONOMIC IMPORTANCE					Notes
	y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The PA is an important source of employment for local communities.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Local communities depend upon the PA resources for their subsistence.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) The PA provides community development opportunities through sustainable resource use.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) The PA has religious or spiritual significance.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The PA has unusual features of aesthetic importance.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) The PA contains plant species of high social, cultural, or economic importance.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) The PA contains animal species of high social, cultural, or economic importance.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) The PA has a high recreational value.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) The PA contributes significant ecosystem services and benefits to communities.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) The PA has a high educational and/or scientific value.	

	5 VULNERABILITY					Notes
	y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) Illegal activities within the PA are difficult to monitor.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Law enforcement is low in the region.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Bribery and corruption is common throughout the region.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) The area is experiencing civil unrest and/or political instability.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Cultural practices, beliefs, and traditional uses conflict with the PA objectives.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) The market value of the PA resources is high.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) The area is easily accessible for illegal activities.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) There is a strong demand for vulnerable PA resources.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) The PA manager is under pressure to unduly exploit the PA resources.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) Recruitment and retention of employees is difficult.	

PLANNING

<p>6 OBJECTIVES</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; text-align: center;">y</th> <th style="width: 10%; text-align: center;">m/y</th> <th style="width: 10%; text-align: center;">m/n</th> <th style="width: 10%; text-align: center;">n</th> <th style="width: 60%;"></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td>a) PA objectives provide for the protection and maintenance of biodiversity.</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td>b) Specific biodiversity-related objectives are clearly stated in the management plan.</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td>c) Management policies and plans are consistent with the PA objectives.</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td>d) PA employees and administrators understand the PA objectives and policies.</td> </tr> <tr> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td>e) Local communities support the overall objectives of the PA.</td> </tr> </tbody> </table>	y	m/y	m/n	n		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) PA objectives provide for the protection and maintenance of biodiversity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) Specific biodiversity-related objectives are clearly stated in the management plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) Management policies and plans are consistent with the PA objectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) PA employees and administrators understand the PA objectives and policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) Local communities support the overall objectives of the PA.	<p style="text-align: center;">Notes</p>
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INPUTS

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PROCESSES

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OUTPUTS

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PROTECTED AREA SYSTEM-LEVEL

	17 PROTECTED AREA SYSTEM-LEVEL DESIGN					Notes
	y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) The PA system adequately represents the full diversity of ecosystems within the region.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) The PA system adequately protects against the extinction or extirpation of any species.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) The PA system consists primarily of exemplary and intact ecosystems.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) Sites of high conservation value for key species are systematically protected.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) The PA system maintains natural processes at a landscape level.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) The PA system includes the protection of transition areas between ecosystems.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) The PA system includes the full range of successional diversity.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) Sites of high biodiversity are systematically protected.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) Sites of high endemism are systematically protected.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) The layout and configuration of the PA system optimizes the conservation of biodiversity.	

PROTECTED AREA POLICIES

	18 PROTECTED AREA POLICIES					Notes
	y	m/y	m/n	n		
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	a) National PA policies clearly articulate a vision, goals, and objectives for the PA system.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	b) The area of land protected is adequate to maintain natural processes at a landscape level.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	c) There is a demonstrated commitment to protecting a viable and representative PA network.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	d) There is a comprehensive inventory of the biological diversity throughout the region.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	e) There is an assessment of the historical range of variability of ecosystem types in the region.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	f) There are restoration targets for under-represented and/or greatly diminished ecosystems.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	g) There is ongoing research on critical PA-related issues.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	h) The PA system is periodically reviewed for gaps and weaknesses (e.g. gap analyses).	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	i) There is an effective training and capacity-building programme for PA staff.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	j) PA management, including management effectiveness, is routinely evaluated.	

POLICY ENVIRONMENT

	19 POLICY ENVIRONMENT					Notes
	y	m/y	m/n	n		
<input type="radio"/>	a) PA-related laws complement PA objectives and promote management effectiveness.					
<input type="radio"/>	b) There is sufficient commitment and funding to effectively administer the PA system.					
<input type="radio"/>	c) Environmental protection goals are incorporated into all aspects of policy development.					
<input type="radio"/>	d) There is a high degree of communication between natural resource departments.					
<input type="radio"/>	e) There is effective enforcement of PA-related laws and ordinances at all levels.					
<input type="radio"/>	f) National policies promote widespread environmental education at all levels.					
<input type="radio"/>	g) National policies promote sustainable land management.					
<input type="radio"/>	h) National policies promote an array of land conservation mechanisms.					
<input type="radio"/>	i) There is adequate environmental training for governmental employees at all levels.					
<input type="radio"/>	j) National policies foster dialogue and participation with civic and environmental NGOs.					

NB Questions 17, 18, and 19 are intended to foster discussion among PA practitioners and policy makers regarding PA system-level policies.

REFERENCES AND ACKNOWLEDGEMENTS

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ACRONYMS

FSC	Forest Stewardship Council
GIS	Geographic Information System
GPS	Global Positioning System
IUCN	World Conservation Union
NGO	Non-Governmental Organization
NTFP	Non-Timber Forest Product
PA	Protected Area
RAPPAM	Rapid Assessment and Prioritization of Protected Area Management
WCPA	World Commission on Protected Areas
WWF	World Wide Fund For Nature



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