



MANAGEMENT EFFECTIVENESS EVALUATION *of* **NATIONAL PARKS AND WILDLIFE SANCTUARIES IN INDIA, 2006 TO 2014**

MAY, 2015

MANAGEMENT
EFFECTIVENESS
EVALUATION *f*
**NATIONAL PARKS
AND WILDLIFE
SANCTUARIES
IN INDIA**

PROCESS & OUTCOMES
2006-2014

MAY, 2015

THE TEAM

Wildlife Institute of India

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FOREWORD



I am very pleased to note that the Management Effectiveness Evaluation (MEE) process, that is being used globally to evaluate the performance of protected areas, has been appropriately adapted to assess the management of protected areas in India. India is also amongst the select countries in the world that have institutionalized the MEE process. India started the MEE process in 2006 and by the end of 2014 had evaluated 125 national parks and wildlife sanctuaries in the country. Parallely, we have also undertaken three cycles of the MEE process in the context of our tiger reserve network.

The overall outcomes of these assessments are encouraging despite all odds. Our mean MEE score is 60%, which is higher than the global mean.

I would like to urge the field managers of national parks and sanctuaries to closely monitor the performance of the 30 'Headline indicators' that have been customized around the conservation needs of India.

I take this opportunity to compliment the Wildlife Division of our Ministry, Wildlife Institute of India, Chief Wildlife Wardens of all States and above all the park managers and frontline staff for their valuable contribution in securing the conservation of our unique wildlife.

Prakash Javadekar

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PREFACE



Protected Areas (PAs) face many challenges to their integrity which unless addressed can undermine the very objectives for which they were established. In recent years, there has been a growing concern amongst protected area professionals and the civil society representatives that many PAs are failing to achieve their objectives.

Accordingly, the Ministry of Environment, Forest & Climate Change, Government of India initiated the process of Management Effectiveness Evaluation (MEE) of the network of national parks and sanctuaries in India in 2006 using the global IUCN MEE Framework. So far we have evaluated 125 PAs in 31 States/UTs. The overall MEE score is 60.80% with a range from 33.33% to 93.33%. 14% of the PAs have been placed in 'Very Good' Category, 34% in 'Good', 50% in 'Fair' and only 2% in 'Poor' category. Currently, an independent MEE process is ongoing in 40 PAs in the country. In India's MEE process we have used especially customized 30 'headline indicators'. Of these indicators, 'zonation of the site' has achieved the best rating while 'adequacy of trained manpower resources' has received the lowest rating.

I would like to especially compliment Dr. V.B. Mathur, Director, Wildlife Institute of India and his competent team for technically backstopping the MEE process that has given us new insights into the 'strengths', 'weaknesses' and 'immediate actionable points' in respect of all 125 PAs that have been evaluated and provides guidance to mount appropriate management interventions.

Vinod Ranjan

*Additional Director General (Wildlife)
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New Delhi
Date : 28th May, 2015

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We would like to thank a large number of officers and managers across the country for providing support for the evaluation of 125 national parks and wildlife sanctuaries.

We are grateful to the officials and staff of the Wildlife Division of the Ministry of Environment, Forest and Climate Change (MoEFCC) for providing technical guidance and financial assistance to accomplish this exercise.

We would like to specially thank to Chief Wildlife Wardens of all 31 States & Union Territories and all the park managers and front-line staff of 125 protected areas for their valuable contribution in carrying forward the management Effectiveness Evaluation (MEE) process.

We express our sincere appreciation for the professional support and untiring efforts of the Independent teams (Chairman's and members) constituted by the MoEFCC for the five regions - Northern, Southern, Eastern, Western & North-eastern for the evaluation of national parks and wildlife sanctuaries (2006 to 2014).

We are especially indebted to the faculty and staff of the Wildlife Institute of India for their valuable support in accomplishing the task.

The Team

INDEPENDENT
EXPERT TEAMS

MEE Teams and Region		2006-09	2009-10	2012-14
Northern	Chair Person	Shri A.S. Negi	Shri A.S. Negi	Shri M.G. Gogate
	Member	Dr. Pushpam Kumar	Dr. A.M. Dixit	Dr. A.M. Dixit
	Member	Dr. A.M. Dikshit	Dr. S.N. Prasad	Dr. Ashish David
Southern	Chair Person	Dr. S.N. Rai	Dr. S.N. Rai	Shri V.B. Sawarkar
	Member	Dr. R. Sukumar	Dr. A.J.T. Johnsingh	Dr. P.S. Easa
	Member	Dr. E.A. Jayson	Dr. E.A. Jayson	Dr. Advait Edgoankar
Eastern	Chair Person	Shri S.C. Dey	Shri M.G. Gogate	Shri B.K. Patnaik
	Member	Shri P.K. Mishra	Dr. D.S. Srivastava	Dr. S.N. Prasad
	Member	Dr. D.S. Srivastava	Dr. P.S. Easa	Dr. D.S. Srivastava
Western	Chair Person	Shri M.G. Gogate	Dr. R.P.S. Kotwal	Dr. D.N.S. Suman
	Member	Dr. S.N. Prasad	Dr. Erach Bharucha	Dr. Justus Joshua
	Member	Dr. Erach Bharucha	Dr. Ashish David	Dr. Yogesh Dubey
North-eastern	Chair Person	Shri H. K. Choudhury	Shri M.C. Malakar	Shri H.K. Choudhury
	Member	Dr. P.C. Bhattacharya	Dr. P.C. Bhattacharya	Dr. P.C. Bhattacharya
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CHAPTER **ONE**



MANAGEMENT EFFECTIVENESS EVALUATION

1.1

Introduction

Protected areas (PAs) are the cornerstone of efforts to conserve biodiversity and the environment and provide associated recreational, economic and social benefits to humans. The number and total extent of PAs have been increasing exponentially over the last 50 years, and there are now more than 100,000 PAs covering some 11% of the earth's land surface (Chape et al. 2005, Leverington et al. 2008).

The success of protected areas as a tool for conservation is based around the assumption that they are managed to protect the values that they contain (Hockings et al. 2006). However, protected areas (PAs) face many challenges to their integrity that, unless addressed, can undermine the very objectives for which they were established (Mathur et al. 2011). Yet, many sites are under pressure from internal and external threats, and many are degraded (Carey et al. 2000).

Monitoring threats and activities affecting a PA and using the results to manage the challenges, threats and pressures is essential for improving conservation success. Assessing the effectiveness of management and using the results for adaptive management is at the core of good PA management. Assessments enable managers and stakeholders to reflect on their experience, allocate resources efficiently and plan for effective management in relation to potential threats and opportunities (Hockings et al. 2007). Evaluating the effectiveness of the management of these sites is one important way of ensuring that the investment of time and effort in establishing and managing PAs is delivering the benefits that society seeks.

1.2

What is Management Effectiveness Evaluation (MEE)?

Assessment of management effectiveness has emerged as a key tool for PA managers and is increasingly being required by governments and international bodies. For example, the Convention on Biological Diversity (CBD) Programme of Work for Protected Areas calls on all State Parties to continue to expand and institutionalize management effectiveness assessments to work towards assessing 60% of the total area of PAs using various national and regional tools and report the results into the global database on management effectiveness maintained by the World Conservation Monitoring Centre of the United Nations Environment Programme (WCMC UNEP) (<http://www.cbd.int/decision/cop/?id=12297>). Evaluation of management effectiveness is generally carried out by assessing a series of criteria (represented by carefully selected indicators) against agreed objectives or standards.

Protected area (PA) management effectiveness evaluation (MEE) is defined as the assessment of how well PAs are being managed—primarily, whether they are protecting their values and achieving the goals and objectives agreed upon. The term 'management effectiveness' reflects three main themes of PA management:

- Design issues relating to both individual sites and PA systems
- The adequacy and appropriateness of management systems and processes
- Delivery of the objectives of PAs, including conservation of values.

1.3

Why do we need evaluation or/and assessment?

The need to evaluate PA management effectiveness has become increasingly well recognised internationally over the past one and a half decades. In both developed and developing countries it has been seen that declaration of PAs does not always result in adequate protection (Hockings and Phillips 1999, Hockings et al. 2000, Ervin 2003). Evaluation is necessary because PAs face many threats. However, evaluation is not simply a way of looking for problems; it is as important to identify when things are going well. Assessment of management effectiveness should include both issues within and/or beyond the control of individual managers. This approach facilitates a range of responses to threats and deficiencies in management, from site-based actions to broad political and policy reviews (Hockings et al. 2000).

There are many reasons why people want to assess management effectiveness (Hockings et al. 2000). These different purposes may require different assessment systems and varying degrees of detail. Funding bodies, policy makers and conservation lobbyists may use the results to highlight problems and to set priorities, or management agencies may use them to promote better management policies and practices. Managers may wish to use the results of evaluations to improve their performance or to report on achievements to senior managers, the government or external stakeholders (Hockings et al. 2006). Local communities and other stakeholders, including civil society, need to establish how far their interests are being taken into account. The increased emphasis on evaluation is in part due to changes in society, especially the increased demand for accountability, transparency and demonstrated 'value for money' (Hockings et al. 2006).

Broadly speaking, MEE can:

- Enable and support an adaptive approach to management
- Assist in effective resource allocation
- Promote accountability and transparency
- Help involve the community and build constituencies
- Promote the values of PAs.

In addition to these substantive benefits, the process of assessing management effectiveness can also deliver a number of procedural benefits. Improved communication and cooperation between managers and other stakeholders is a common outcome of evaluation processes. Managers also have an opportunity to 'step back' from the day-to-day concerns of their jobs and consider the issues and challenges that they face in a new light. Many managers have commented that they have derived the major benefits during the process rather than from any formal report written at the end of the exercise (Hockings et al. 2006).

In practice, evaluation results are usually used in more than one way. Information used by managers to improve their own performance (adaptive management) can also be drawn on for reporting (accountability) or can be used to improve the way funds and other resources are allocated either within a single reserve or across a PA system (resource allocation). Whatever purposes it may serve, evaluation should be seen primarily as a tool to assist managers in their work, not as a system for watching and punishing managers for inadequate performance. Evaluation must be used positively to support managers and be seen as a normal part of the process of management. Nonetheless, funding agencies, NGOs and others have a legitimate right to know whether a PA is achieving its stated objectives, and it should be recognised that evaluation findings will inevitably also be used for advocacy. Recent experiences around the world have demonstrated that involving external stakeholders in the assessment process and transparent sharing of the results of assessment can help build cooperation and support for PAs (Hockings et al. 2006).

In recent years there has been a growing concern amongst PA professionals and the public that many PAs are failing to achieve their objectives and, in some cases, are actually losing the values for which they were established (Hockings et al. 2008). As a result, improving the effectiveness of PA management has become a priority throughout the conservation community. One important step in this process is the carrying out of an assessment of the current status and management of the PA to understand better what is and what is not working, and to plan any necessary changes as efficiently as possible (Hockings et al. 2008).

However, assessments should not primarily be about reporting on or judging the managers and/or frontline staff (Mathur et al. 2011). As important as reporting requirements are, assessment of management effectiveness should primarily be used to assist managers to work as effectively as possible. Monitoring threats and activities affecting a PA and using the results to manage challenges, threats and pressures are increasingly being seen as being at the core of good site management (Mathur et al. 2011). Assessments help managers and stakeholders reflect on their experience, allocate resources efficiently and plan for effective management in relation to potential threats and opportunities (Hockings et al. 2008).

1.4

The WCPA Framework for Assessing Management Effectiveness

The precise methodology used to assess effectiveness differs between PAs and depends on factors such as the time and resources available, the importance of the site, data quality and stakeholder pressures. The differing situations and needs for PAs thus require different methods of assessment. As a result, a number of assessment tools have been developed to guide and record changes in management practices.

A uniform theme has been provided to these assessments by the IUCN World Commission on Protected Areas (WCPA) Framework for Assessing the Management Effectiveness of Protected Areas (see Figure 1 for more information), which

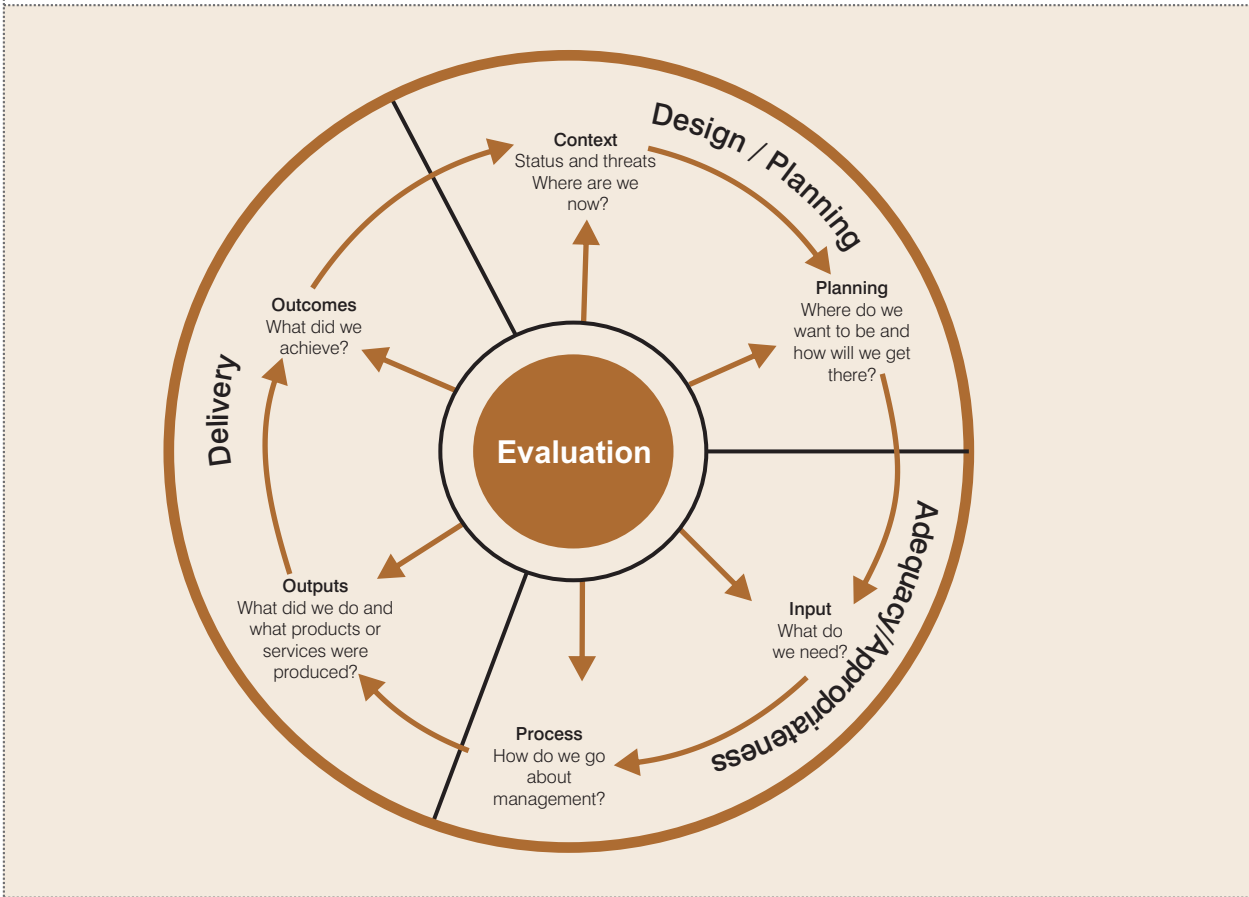
aims both to give overall guidance in the development of assessment systems and to encourage basic standards for assessment and reporting.

The WCPA Framework for Assessing Management Effectiveness is a system for designing PA management effectiveness evaluations with six elements: context, planning, inputs, processes, outputs and outcomes. It is not a methodology but is a guide for developing assessment systems.

The WCPA Framework sees management as a process or cycle with six distinct stages, or elements:

- It begins with establishing the context of existing values and threats,
- progresses through planning and
- allocation of resources (inputs)
- as a result of management actions (process) and
- eventually produces goods and services (outputs)
- that result in impacts or outcomes.

Figure 1.
The WCPA
Framework for
Assessing
Management
Effectiveness
(Source Hockings
et al. 2006).



Of these elements, the outcomes most clearly indicate whether the site is maintaining its core values, but the outcomes can also be the most difficult element to measure accurately. However, the other elements of the framework are all also important for helping identify particular areas where management might need to be adapted or improved.

Over the past 10 years, numerous assessment systems have been developed, most based at least to some extent on the WCPA Framework. They vary from simple questionnaire-type approaches suitable for individual PAs, through workshop-style approaches aimed at whole PA systems, to detailed monitoring systems. The approach described here is a fairly detailed monitoring and evaluation system, suitable for sites of particular importance (Hockings et al. 2008).

1.5

Management Effectiveness Evaluation (MEE) across the world and India

Evaluation of PA management effectiveness did not gain real momentum until after the issue was highlighted at the 1992 World Parks Congress, in Caracas, Venezuela. Since then, more than 40 methodologies have been developed and applied to the assessment of the management effectiveness of PAs (Leverington et al. 2008). In response to these initiatives, work on management effectiveness assessment has become an increasingly common component of PA management worldwide. Evaluations have now been undertaken in over 6000 PAs, and the pace of this work is accelerating (Leverington et al. 2008). International organisations working with PAs, such as IUCN and its WCPA, the World Bank, the Global Environment Facility and NGOs such as WWF and the Nature Conservancy have taken a lead in both promoting the importance of management effectiveness as an issue and in providing the technical development and support needed to underpin this effort.

India has also made a beginning in evaluating the management effectiveness of its national parks, wildlife sanctuaries, tiger reserves (TRs) and world heritage sites (Mathur 2008). The MEE of national parks and wildlife sanctuaries was initiated in 2006 and till 2014, 125 sites have been evaluated. Three Natural World Heritage sites in South Asia, namely Keoladeo National Park, Rajasthan (https://cmsdata.iucn.org/downloads/keoladeo_eoh_second_assessment_oct07.pdf), Kaziranga National Park, Assam (https://cmsdata.iucn.org/downloads/kaziranga_second_eoh_assessment_nov07.pdf) and Chitwan National Park, Nepal (https://cmsdata.iucn.org/downloads/chitwan_eoh_second_assessment_oct07.pdf) were evaluated in 2002-2007. Project Tiger carried out the management effectiveness assessment of 28 TRs in 2006, 39 TRs in 2010 (http://www.wii.gov.in/protected_download/publications/researchreports/2011/tiger/mee_tiger_2011) and 43 TRs in 2014 (http://www.wii.gov.in/images//images/documents/tiger_meetr1_2015.pdf) in India were evaluated.

1.6

Assessment Process for National Parks and Wildlife Sanctuaries in India

The evaluation of 125 National Parks and Wildlife Sanctuaries were done in three phases from 2006 to 2013. 58 PAs in first phase in 2006-09; 29 PAs in second phase in 2009-10 and 38 PAs in third phase during 2012-14 were selected for evaluation. In order to ensure credibility of the assessment process each phase have 5 independent regional committees in 5 regions of the India. Wildlife Institute of India (WII) team provided the technical backstopping to the MEE process to these committees. Considering the growing importance of addressing issues relating to Climate Change, Carbon Capture, Preventing Carbon Loss and Encouraging further Carbon Capture in PAs, two additional criteria have been developed. These criteria's were not included in the formal MEE process but the information gathered helped to sensitize the conservation community about the significance of these issues and to plan next steps for addressing them. A Technical manual 'Management Effectiveness Evaluation (MEE) of National Parks and Wildlife Sanctuaries in India' was prepared by Wildlife Institute of India (2012) to guide the MEE process.

The Independent Expert MEE teams visited these National Parks/ Wildlife Sanctuaries for conducting MEE as per the prescribed assessment criteria and complete the MEE Score Card. The Chairman of the respective committees sends it through email to the Wildlife Institute of India, once the MEE of a site has been completed. The Director's of National Parks and Wildlife Sanctuaries have provided necessary logistic support during the site visits.

In addition to the specially customised 30 'Headline Indicators' for India, the MEE teams have also assessed the

Strengths, the Weaknesses and the Immediate Actionable Points in respect of each PA and these are presented in Chapter 3 of this report. The attached CD contains the filled in questionnaires of all 125 PAs included in evaluation from 2006 to 2014.

1.7

Assessment Criteria for National Parks and Wildlife Sanctuaries in India

For assessment of each of the six elements of the MEE Framework, the following criteria have been developed for MEE process. Explanatory notes, wherever needed, are provided to guide the assessment process. The scores by themselves will not help in providing the complete picture unless supported by considered observations (remarks) that qualify such scores.

Context

1.1
Are the values of the site well documented, assessed and monitored?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Values not systematically documented, assessed or monitored.	Poor			
Values generally identified but not systematically assessed and monitored.	Fair			
Most values systematically identified and assessed and monitored.	Good			
All values systematically identified and assessed and monitored.	Very good			
*Values would also include geo-morphological, historico-cultural and faunal and floral species.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

1.2
Are the threats to
site well
documented and
assessed?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Threats not systematically documented or assessed.	Poor			
Threats generally identified but not systematically assessed.	Fair			
Most threats systematically identified and assessed.	Good			
All threats systematically identified and assessed.	Very good			
* This assessment should be based on number, nature and extent of threats. Threats within and outside PA should both be considered. Impacts, if any on the population abundance of key species may be indicated in the remarks.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

1.3
Is the site free from
human and biotic
interference?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
The site has extensive human and biotic interference.	Poor			
The site has some human and biotic interference.	Fair			
The site has little human and biotic interference.	Good			
The site has no human and biotic interference.	Very good			
*This assessment should be based on existence of human settlements/ villages; livestock grazing, cultivation, encroachments etc, resource extraction/ livelihood dependence of local communities and should reflect the overall interference due to all the above factors. Number and size of human settlements/ enclaved villages and their impacts on the site may be indicated in the Remarks.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

Planning

2.1
Is the site properly
identified (NP/WLS)
and categorized
(in terms of
zonation) to
achieve the
objectives?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Site not identified correctly or categorized.	Poor			
Site identified correctly but not categorized.	Fair			
Site identified correctly but not systematically categorized.	Good			
Site identified correctly and systematically categorized with proper zonation plans.	Very good			
*Management prescriptions for various zones (Core, Buffer, Tourism etc) may be carefully assessed.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.2
Does the site have a comprehensive Management Plan?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
No relevant Management Plan in place.	Poor			
Management Plan exist but not comprehensive.	Fair			
Site has a comprehensive Management Plan.	Good			
Site has a comprehensive, science based Management Plan prepared through a participatory process.	Very good			
*Is the Management Plan consistent with WII Guidelines or not? The extent to which the concerns of the stakeholders, if any have been incorporated in the Management Plan may be commented upon.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.3
Is the Management Plan routinely and systematically updated?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No process in place for systematic review and update of Management Plan.	Poor			
Management Plan sometimes updated in adhoc manner.	Fair			
Management Plan routinely and systematically updated.	Good			
Management Plan routinely, systematically and scientifically updated through a participatory process.	Very good			
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.4
Does the site safeguards the threatened biodiversity values?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Sites does not safeguard the threatened biodiversity values.	Poor			
Sites safeguards a few threatened biodiversity values.	Fair			
Sites safeguards a large number of threatened biodiversity values.	Good			
Sites safeguards all threatened biodiversity values.	Very good			
* Remarks need to elaborate on the kind of safeguards and how they work or are intended to work				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.5
Are stakeholders
given an
opportunity to
participate in
planning?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Little, if any opportunity for stakeholder participation in planning.	Poor			
Stakeholders participate in some planning.	Fair			
Stakeholders participate in most planning processes.	Good			
Stakeholders routinely and systematically participate in all planning processes.	Very good			
* The result of participation must show in the field and not merely reported as a routine exercise. Further, is there a system/scope of putting the draft Management Plan in Public Domain in place?				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.6
Are habitat
restoration
programmes
systematically
planned and
monitored?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Habitat restoration programmes are entirely adhoc.	Poor			
Limited planning and monitoring programmes are in place for habitat restoration.	Fair			
Habitat restoration programmes are generally well planned and monitored.	Good			
Habitat restoration programmes are thoroughly planned and monitored.	Very good			
* This assessment should be primarily based on habitat management programmes in relation to habitats for species that are threatened (IUCN categories), are habitat specialists, subjected to seasonal movements, wide ranging with emphasis on the breeding and rearing habitat and may include factors such as food, water, shelter (all connotations).Habitat structure, composition, unique patches of vegetation and sensitive sites, sources of water and their distribution are integral. Corridors within buffer zone are critically important. For example, all riparian habitats. Have these been addressed? Is their a planning process in place? What is the extent of 'invasive species in the Site? Are there any measures to reduce/ remove them? Have these been successful?				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.7
Does the site has
an effective
protection
strategy?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Site has no protection strategy.	Poor			
Site has an adhoc protection strategy.	Fair			
Site has a comprehensive protection strategy but is not very effective.	Good			
Site has a comprehensive and very effective protection strategy.	Very good			
* This assessment takes inter-alia into account the nature of threats, the number and location of patrolling camps and foot and mobile patrolling, needs that relate to available manpower, terrain difficulties, practicability of area coverage, readiness to contain specific threats with necessary support and facilities. Is there any coordination with other wings of the Forest Department/ Police/ Customs etc? Are these effective?				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.8
Has the site been effective in the mitigation of human-wildlife conflicts?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Human-wildlife conflicts are rampant.	Poor			
Site has been able to mitigate few human-wildlife conflicts.	Fair			
Site has been able to mitigate man human-wildlife conflicts.	Good			
Site has been able effective in mitigating all human-wildlife conflicts.	Very good			
* Judgment needs to consider staff training, capabilities, equipment, logistics, local attitude and politics (negatively aided and/or abetted), assistance of relevant agencies (e.g. police. Local administration, Local people themselves) PR, follow-up actions and monitoring. Details of compensation paid for human injury/ death and property damage in the last 3 year may be collected.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.9
Is the site integrated into a wider ecological network landscape following the principles of the ecosystem approach?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Site not integrated into a wider network/ landscape.	Poor			
Some limited attempts to integrate the site into a network/ landscape.	Fair			
Site is generally quite well integrated into a network/ landscape.	Good			
Site is fully integrated into a wider network/ landscape.	Very good			
* Assessment needs to consider the scope of opportunities on the landscape scale that exist. Consider whether any attempts have been made and what are these? Have all the important corridors been identified? What actions are planned/implemented for their security? Have the Forest Working Plans and Forest Development Corporation Plans within the identified landscapes taken cognizance of such new requirement? What kind of relationship exists with the District Administration and other Line Departments? Does the Site get any funds from these agencies?				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

Inputs

3.1
Are personnel
adequate, well
organised and
deployed with
access to
adequate
resources in the
site?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Few, if any, personnel explicitly allocated for PA management.	Poor			
Some personnel explicitly allocated for PA management but not systematically linked to management objectives.	Fair			
Some personnel explicitly allocated towards achievement of specific management objectives.	Good			
Adequate personnel explicitly allocated towards achievement of specific management objectives.	Very good			
* This assessment should inter-alia be based on number of personnel allocated for attainment of PA objectives at the Range , Round, Beat and Patrolling camps levels or as relevant to the needs (sanctioned posts vis- a- vis existing personnel and needs beyond the sanctioned strengths. It is possible that posts have last been sanctioned several years back that do not now account for the current needs)				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

3.2
Are resources
(vehicle, equipment,
building etc.)
adequate, well
organised and
managed with
access to
adequate
resources?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Few, if any, resources explicitly allocated for PA management.	Poor			
Some resources explicitly allocated for PA management but not systematically linked to management objectives.	Fair			
Some resources explicitly allocated towards achievement of specific management objectives.	Good			
Adequate resources explicitly allocated towards achievement of specific management objectives.	Very good			
* These form a variety of resources. These may be segregated into immovable (structures) and movable categories and each further may be considered under the essential and desirable categories. It is best to start with what are the minimum needs to attain each objective, what is available and manner of use/deployment. The proportions of the 'essentials' and 'desirables' along the importance gradient of objectives would serve as pointers for score categories. Specific remarks would be vitally important.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

3.3

Are resources (human and financial) linked to priority actions and are funds released timely?

Assessment criteria*

Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Resource allocation is adhoc, funds are inadequate and seldom released in time and not utilized.	Poor			
Some specific allocation for management of priority action. Funds are inadequate and there is some delay in release, partially utilized.	Fair			
Comprehensive planning and allocation that meets the most important objectives. Generally funds released with not much delay and mostly utilized.	Good			
Comprehensive planning and allocation of resources for attainment of most objectives. Funds generally released on-time and are fully utilized.	Very good			

*Obtain details of funds released by MoEF and their utilization by site in the last 3 years and indicate them under 'Remarks'. Also comment on the problems associated with funds and their mitigation.

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

3.4

What level of resources is provided by NGOs?

Assessment criteria*

Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
NGOs contribute nothing for the management of the site.	Poor			
NGOs make some contribution to management of the site but opportunities for collaboration are not systematically explored.	Fair			
NGOs contributions are systematically sought and negotiated for the management of some site level activities.	Good			
NGOs contributions are systematically sought and negotiated for the management of many site level activities.	Very good			

*Details of contributions (cash/kind) made by the NGOs in the last 3 years may be collected.

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

3.5

Does PA manager considers resources (human and financial) to be sufficient?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Resources insufficient for most tasks.	Poor			
Resources sufficient for some tasks.	Fair			
Resources sufficient for most tasks.	Good			
Resources are in excess for most tasks.	Very good			

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

Process

4.1

Does the site have trained manpower resources for effective PA management?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Very few trained officers and frontline staff in the site.	Poor			
Few trained officers and frontline staff, who are posted in the site.	Fair			
A large number of trained officers and frontline staff are posted in the site.	Good			
All trained managers and frontline staff posted in the site.	Very good			

* Indicate % of trained staff in various categories. i.e. Higher Management: ACF/ DCF/ CF/ CCF; Frontline Staff: Range Officer; Beat Officer; Forest Guard; Casual Daily Labour (CDL); Others.

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

4.2

Is PA staff performance management linked to achievement of management objectives?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
No linkage between staff performance management and management objectives.	Poor			
Some linkage between staff performance management and management objectives, but not consistently or systematically assessed.	Fair			
Performance management for most staff is directly linked to achievement of relevant management objectives.	Good			
Performance management of all staff is directly linked to achievement of relevant management objectives.	Very good			

*Has the PA staff received award/ appreciation from any agency in the last 3 years?

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

4.3
Is there effective public participation in PA management?

Assessment criteria*

Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Little or no public participation in PA management.	Poor			
Opportunistic public participation in some aspects of PA management.	Fair			
Systematic public participation in most aspects of PA management.	Good			
Comprehensive and systematic public participation in all important aspects of PA management.	Very good			

* Participation would include Conservation & awareness programmes, Census operations, Intelligence gathering, Forest fire control etc.
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

4.4
Is there a responsive system for handling complaints and comments about PA management?

Assessment criteria*

Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
No systematic approach to handling complaints.	Poor			
Complaints handling system operational but not responsive to individual issues and limited follow up provided.	Fair			
Coordinated system logs and responds effectively to most complaints.	Good			
All complaints systematically logged in coordinated system and timely response provided with minimal repeat complaints.	Very good			

* Number of queries made and response thereof under the Right to Information (RTI), Act in the last 3 years may be compiled.
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

4.5
Does PA management addresses the livelihood issues of resource dependent communities especially of women?

Assessment criteria

Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No livelihood issues are addressed by PA management.	Poor			
Few livelihood issues are addressed by PA management.	Fair			
Substantial livelihood issues are addressed by PA management.	Good			
Livelihood issues of resource dependent communities especially women are addressed effectively by PA managers.	Very good			

*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

5.1
Is adequate
information on PA
management
publicly available?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Little or no information on PA management publicly available.	Poor			
Publicly available information is general and has limited relevance to management accountability and the condition of public assets.	Fair			
Publicly available information provides detailed insight into major management issues for most PAs or groups of PAs.	Good			
Comprehensive reports are routinely provided on management and condition of public assets in all PAs or groups of PAs.	Very good			
* Does the Site has a website? If yes, is it comprehensive, well-managed and periodically updated?				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

5.2
Are visitor services
(tourism and
interpretation) and
facilities
appropriate for the
relevant protected
are category?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Visitor services and facilities are at odds with relevant PA category and/or threaten PA values.	Poor			
Visitor services and facilities generally accord with relevant PA category and don't threaten PA values.	Fair			
All visitor services and facilities accord with relevant PA category and most enhance PA values.	Good			
All visitor services and facilities accord with relevant PA category and enhance PA values.	Very good			
* Include the existence and quality of visitor and interpretation centers, including skills and capabilities of personnel manning these, site related publications, films, videos; arrangements of stay (including places serving refreshments and food owned and managed by site), watch towers and hides including safety factors, vehicles assigned for visitors including riding elephants, if any and their deployment, drinking water, rest rooms, garbage disposal, attended and self guided services in the field, visitor feed back on the quality of wilderness experience. Details of numbers of visitors/ tourists(both domestic and overseas) coming in the last 3 years and the revenue earned may be compiled.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

5.3
Are
research/monitoring
related trends
systematically
evaluated and
routinely reported
and used to
improve
management?

Assessment criteria*				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Little or no systematic evaluation or routine reporting of trends.	Poor			
Some evaluation and reporting undertaken but neither systematic nor routine.	Fair			
Systematic evaluation and routine reporting of management related trends undertaken.	Good			
Systematic evaluation and comprehensive reporting of trends undertaken and attempts made at course corrections as relevant.	Very good			
* Not all site attract projects and researchers and with exceptions, little research takes place on the site own steam because of systemic limitations. However, monitoring of some critical issues is expected e.g. population of tiger, co-predators and prey with insights into their demography and distribution (some opportunistic sampling by sightings, signs and spatial distribution during assessment would be extremely useful in terms of expert impression and as a pulse), monitoring incidence of livestock grazing, fires, weeds, sources of water, a variety of illegal activities typically associated with the reserve, wildlife health (e.g. epidemics, immunization of livestock) regeneration and change in vegetation, visitors and their activities, offence cases, ex-gratia payments etc. Details of number of research projects in the last 3 years, institutions involved, salient outcomes may be collected and used in awarding scores.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

5.4
Is there a
systematic
maintenance
schedule and funds
in place for
management of
infrastructure/
assets?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
No systematic inventory or maintenance schedule.	Poor			
Inventory maintenance is adhoc and so is the maintenance schedule.	Fair			
Systematic inventory provides the basis for maintenance schedule but funds are inadequately made available.	Good			
Systematic inventory provides the basis for maintenance schedule and adequate funds are made available.	Very good			
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

Outcomes

6.1
Are populations of threatened species especially key faunal species declining, stable or increasing?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Threatened/ endangered species populations declining.	Poor			
Some threatened/ endangered species populations increasing, most others stable.	Fair			
Most threatened/ endangered species populations increasing, most others stable.	Good			
All threatened/ endangered species populations either increasing or stable.	Very good			
* This needs to practically relate to the natural ecosystem potential rather than being driven merely by numbers and visibility. The assessment score may be elaborated under remarks. Comments on the population trends may be made under Remarks.				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

6.2
Have the threats to the site being reduced/ minimized or is there an increase?

Assessment criteria				
Condition	Category*	(Tick ✓)	Reference document(s)	Remarks
Threats to the Site have not abated but have enhanced.	Poor			
Some threats to the Site have abated, others continue their presence	Fair			
Most threats to the Site have abated. The few remaining are vigorously being addressed	Good			
All threats to the Site have been effectively contained and an efficient system is in place to deal with any emerging situation	Very good			
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

6.3
Are the expectations of visitors generally met or exceeded?

Assessment criteria*				
Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Expectations of visitors generally not met.	Poor			
Expectations of many visitors are met.	Fair			
Expectations of most visitors are met.	Good			
Good expectations of most visitors are met.	Very good			
* Is there any system of receiving/ analyzing visitor feedback?				
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

6.4
Are local communities supportive of PA management?

Assessment criteria*

Condition	Category+	(Tick ✓)	Reference document(s)	Remarks
Local communities are hostile.	Poor			
Some are supportive.	Fair			
Most locals are supportive of PA management.	Good			
All local communities supportive of PA management.	Very good			

* There could be many reasons for disenchantment. It could be real because of managerial neglect or the managerial efforts could be appropriate but there could be local elements/organizations who would like to keep the dis-affectation simmering for their own ulterior motives. Likewise success could be entirely because of the efforts of managers or they might be fortunate in striking partnerships with credible NGOs. Assessment may take the prevailing causes into account.

Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10

1.8

MEE Score Card

Framework Element Number	Framework Element Name	Number of Questions (a)	Maximum Mark per question (b)	Total (axb)	Marks obtained for the Element	Overall score %
1.	Context	03	10	30		
2.	Planning	09	10	90		
3.	Inputs	05	10	50		
4.	Process	05	10	50		
5.	Outputs	04	10	40		
6.	Outcomes	04	10	40		
Total		30		300		

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CHAPTER **TWO**



MANAGEMENT EFFECTIVENESS EVALUATION (MEE) OF NATIONAL PARKS AND WILDLIFE SANCTUARIES IN INDIA

2.1

RESULTS: AT A GLANCE 2006-2014

Overview of MEE of National Parks and Wildlife Sanctuaries, 2006 - 2014

The 125 National Parks and Wildlife Sanctuaries in 31 States and Union Territories of the country were grouped into five regions viz., Northern, Southern, Eastern, Western and North eastern regions. The overall MEE score is 60.80% with a range from 33.33% to 93.33% (Table 1). The Southern region is the better managed region and got the highest MEE score (65.10%) while the Northern region is fairly managed region and got the lowest MEE score (mean 55.30%) (Table 1). Gir National Park (Gujarat- Western region) achieved highest MEE score (Very Good category- 93.33%) (Table 3) whereas Karera Wildlife Sanctuary (Madhya Pradesh- Western region) and Nakti Dam Wildlife Sanctuary (Bihar- Eastern region) scored lowest MEE score (Poor category 33.33%). The overall MEE rating score of the 125 Protected Areas in the country are: 14% Very Good, 34% Good, 50% Fair and 2% Poor (Figure 1 and Table 2).

Table 1.
Regions, States,
PAs and MEE score
(mean % age and
range) from 2006-
2014

Regions	States	Number of NP/WLS	Mean MEE Score%	MEE Score Range %
Northern	Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Uttar Pradesh and Uttarakhand	22 PAs (12WLS+10NP)	55.30%	45.31-76.50
Southern	Andaman & Nicobar, Andhra Pradesh, Goa, Karnataka, Kerala, Pondicherry and Tamil Nadu	28 PAs (18 WLS+10 NP)	65.10%	45.50-81.10
Eastern	Bihar, Chhattisgarh, Jharkhand, Odisha and West Bengal	25 PAs (20 WLS+5 NP)	60.80%	33.33-84.10
Western	Gujarat, Maharashtra, Madhya Pradesh and Rajasthan	24 PAs (15 WLS+ 9 NP)	58.90%	33.33-93.33
North-eastern	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura	26 PAs (13 WLS+13 NP)	63.90%	42.50-77.34
	Total State+ UT = 31	Total 125 PAs (78 WLS+47 NP)	60.80%	33.33-93.33

Table 2.
Region wise and
category wise
summary of MEE
process of PAs from
2006 to 2013

Regions	Total number of PAs evaluated	Ratings*			
		Very Good (14%)	Good (34%)	Fair (50%)	poor (2%)
Northern	22	2	1	19	0
Southern	28	5	15	8	0
Eastern	25	6	7	10	2
Western	24	2	7	14	1
North-eastern	26	3	12	11	0
Total	125	18	42	62	3

*Ratings in %: Poor-upto 45; Fair- 41 to 59; Good- 60 to 74 and Very Good- 75 and above

Figure 1.
Region wise
MEE rating
categories

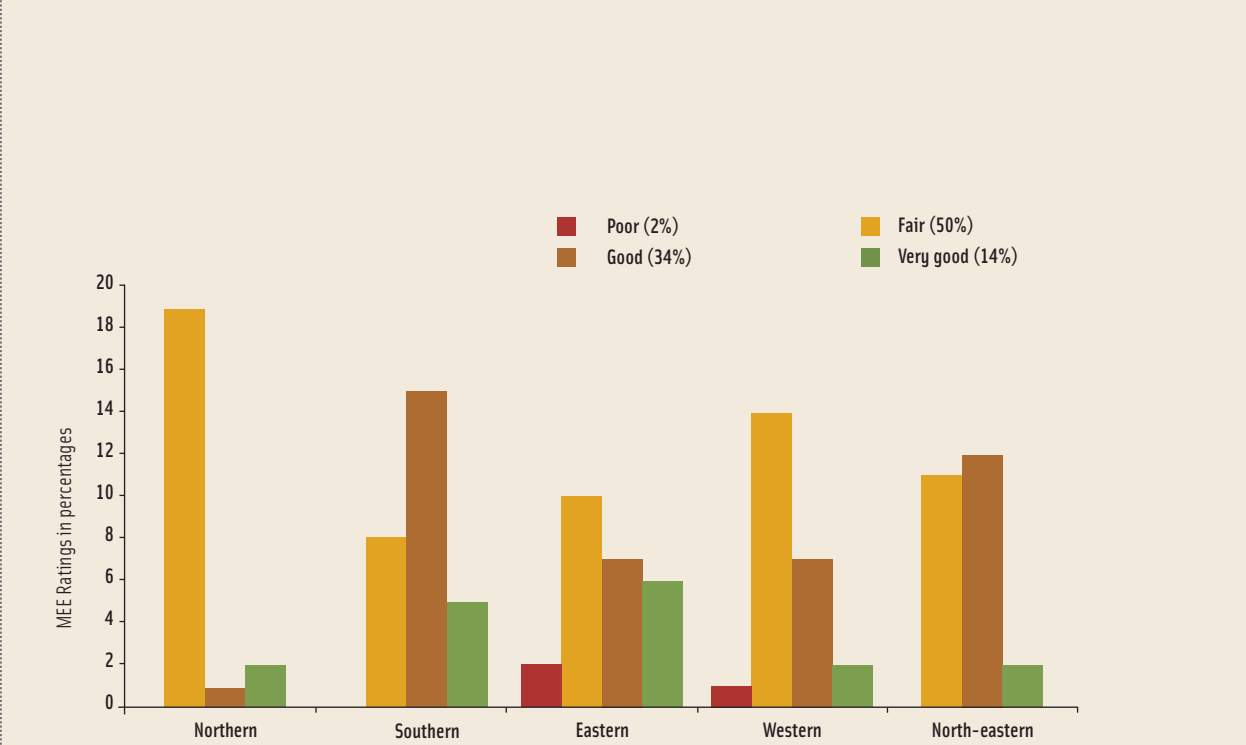


Table 3.
Three best
Protected Areas in
each MEE cycle

S. No.	MEE Cycle	1st Rank (MEE % Score)	2nd Rank (MEE % Score)	3rd Rank (MEE % Score)
1.	2006-09 (58 PAs)	Gorumara NP, West Bengal (83.00)	Mollem NP, Goa (83.00)	Singalila NP, West Bengal (81.00)
2.	2009-10 (29 PAs)	Neora Valley NP, West Bengal (81.06)	Biligiri Rangaswamy Temple WLS, Karnataka (79.68)	Pangolakha WLS, Sikkim (77.34)
3.	2012-14 (38 PAs)	Gir NP, Gujarat (93.33)	Chapramari WLS, West Bengal (79.17)	Kanger Valley NP, Chhattisgarh (78.33)

2.2

Performance of individual National Park
and Wildlife Sanctuary

Every National Park and Wildlife Sanctuary was evaluated separately and their MEE Score in percentage and rank category are presented region wise, northern, southern, eastern, western and north-eastern respectively. Twenty two National Parks and Wildlife Sanctuaries recorded an overall mean of 55.3% with fair category in Northern region. Among 22 National Parks and Wildlife Sanctuaries, Great Himalayan National Park, Himachal Pradesh was rated in very good category with highest MEE score (76.5%) and Sohagi Barwa Wildlife Sanctuary, Uttar Pradesh was rated in fair category with lowest MEE score (45%) in Northern region (Table 4). Twenty eight National Parks and Wildlife Sanctuaries recorded an overall mean of 65.10% with good category in Southern region. Among 28 National Parks and Wildlife Sanctuaries, Biligiri Rangaswami Temple Wildlife Sanctuary, Karnataka was rated in very good category with highest MEE Score (79.69%) and Papikonda Wildlife Sanctuary, Andhra Pradesh was rated in fair category with lowest mean score (45.50%) (Table 5). Twenty five National Parks and Wildlife Sanctuaries recorded an overall mean of 60.80% with good category in Eastern region. Among 25 National Parks and Wildlife Sanctuaries, Gorumara Wildlife Sanctuary, West Bengal was rated in very good category with highest MEE Score (84.10%) and Nakti Dam Wildlife Sanctuary, Bihar was rated in fair category with lowest mean score (33.33%) (Table 6). Twenty four National Parks and Wildlife Sanctuaries recorded an overall mean of 58.90% with fair category in Western region. Among 24 National Parks and Wildlife Sanctuaries, Gir National Park was rated in very good category with highest MEE Score (93.33%) and Karera Wildlife Sanctuary, Madhya Pradesh was rated in fair category with lowest mean score (33.33%) (Table 7). Twenty six National Parks and Wildlife Sanctuaries recorded an overall mean of 63.90% with good category in North-eastern region. Among 26 National Parks and Wildlife Sanctuaries, Pangolakaha Wildlife Sanctuary, Sikkim was rated in very good category with highest MEE Score (77.34 %) and Fambong Lho Wildlife Sanctuary, Sikkim was rated in fair category with lowest mean score (42.50 %) (Table 8).

Table 4.
Individual ratings of
National Parks and
Wildlife Sanctuaries
in Northern region

Region	State	National Park (NP) and Wildlife Sanctuary (WLS)	MEE %	Rank
N O R T H E R N	Delhi	Asola WLS	56.80	Fair
	Haryana	Sultanpur NP	56.10	Fair
	Haryana	Kalesar NP	59.80	Fair
	Haryana	Bhindawas WLS	59.17	Fair
	Himachal Pradesh	Great Himalayan NP	76.50	Very Good
	Himachal Pradesh	Pin Valley NP	49.22	Fair
	Himachal Pradesh	Kibber WLS	45.31	Fair
	Himachal Pradesh	Simbalbara WLS	60.83	Good
	Jammu & Kashmir	Kishtwar NP	47.70	Fair
	Jammu & Kashmir	Changthang WLS	47.70	Fair
	Jammu & Kashmir	Hemis NP	54.69	Fair
	Jammu & Kashmir	Dachigam NP	55.83	Fair
	Punjab	Abohar WLS	51.56	Fair
	Uttar Pradesh	Sohelwa WLS	49.20	Fair
	Uttar Pradesh	National Chambal WLS	56.10	Fair
	Uttar Pradesh	Kaimur WLS	51.56	Fair
	Uttar Pradesh	Sohagi Barwa WLS	45.00	Fair
	Uttarakhand	Govind Pashu WLS	52.30	Fair

Table 5.
Individual ratings of
National Parks and
Wildlife Sanctuaries
in Southern region

Region	State	National Park (NP) and Wildlife Sanctuary (WLS)	MEE %	Rank
	Uttarakhand	Rajaji NP	59.10	Fair
	Uttarakhand	Nanda Devi NP	75.78	Very Good
	Uttarakhand	Kedarnath WLS	59.17	Fair
	Uttarakhand	Gangotri NP	46.67	Fair
		Overall Mean MEE Score %	55.30	Fair
S O U T H E R N	Andaman & Nicobar	Mahatma Gandhi NP	65.90	Good
	Andaman & Nicobar	Interview Islands WLS	62.10	Good
	Andaman & Nicobar	Cuthberts Bay WLS	66.94	Good
	Andhra Pradesh	Papikonda WLS	45.50	Fair
	Andhra Pradesh	Gundla Brahmeswaram WLS	46.20	Fair
	Andhra Pradesh	Shri Venkateshwara NP	70.31	Good
	Andhra Pradesh	Coringa WLS	60.00	Good
	Andhra Pradesh	Kolleu WLS	53.33	Fair
	Goa	Bhagwan Mahaveer WLS	70.00	Good
	Goa	Bondla WLS	68.33	Good
	Goa	Mollem NP	81.10	Very Good
	Goa	Netravali WLS	59.38	Fair
	Karnataka	Dandeli WLS	60.60	Good
	Karnataka	Mookambika NP	64.40	Good
	Karnataka	Biligiri Rangaswamy Temple WLS	79.69	Very Good
	Karnataka	Kudremukh NP	64.17	Good
	Kerala	Wayanad WLS	59.10	Fair
	Kerala	Eravikulam NP	77.30	Very Good
	Kerala	Shendurney WLS	75.78	Very Good
	Kerala	Silent Valley NP	75.83	Very Good
	Kerala	Peppara WLS	58.33	Fair
	Pondicherry	Oussudu WLS	55.00	Fair
	Tamil Nadu	Gulf of Mannar NP	57.60	Fair
	Tamil Nadu	Mudumalai NP	71.20	Good
	Tamil Nadu	Mukurthi NP	71.20	Good
	Tamil Nadu	Satyamangalam WLS	68.55	Good
	Tamil Nadu	Srivilliputhur Grizzled Squirrel WLS	64.17	Good
	Tamil Nadu	Point Calimere WLS	70.83	Good
		Overall Mean MEE Score %	65.10	Good

Table 6.
Individual ratings of
National Parks and
Wildlife Sanctuaries
in Eastern region

Region	State	National Park (NP) and Wildlife Sanctuary (WLS)	MEE %	Rank
E A S T E R N	Bihar	Kaimur WLS	42.40	Fair
	Bihar	Kanwar Jheel WLS	41.67	Fair
	Bihar	Nakti Dam WLS	33.33	Poor
	Bihar	Vikramshila Gangetic Dolphin WLS	37.50	Poor
	Chattisgarh	Udanti WLS	52.30	Fair
	Chattisgarh	Semarsot WLS	50.00	Fair
	Chattisgarh	Bannawapara WLS	65.63	Good
	Chattisgarh	Guru Ghasidas NP	56.06	Fair
	Chattisgarh	Kanger Valley NP	78.33	Very Good
	Jharkhand	Mahauadar WLS	42.40	Fair
	Jharkhand	Dalma WLS	69.70	Good
	Jharkhand	Hazaribag WLS	53.91	Fair
	Jharkhand	Kodarma WLS	51.67	Fair
	Orissa	Sunebeda WLS	58.30	Fair
	Orissa	Bhitarkanika WLS	70.50	Good
	Orissa	Gahirmatha WLS	66.70	Good
	Orissa	Chandaka Dampara WLS	61.36	Good
	Orissa	Hadgarh WLS	55.83	Fair
	Orissa	Chilika (Nalaban) WLS	65.83	Good
	West Bengal	Mahananda WLS	63.60	Good
	West Bengal	Jaldapara WLS	76.50	Very Good
	West Bengal	Gorumara NP	84.10	Very Good
	West Bengal	Singalila NP	81.80	Very Good
	West Bengal	Neora Valley NP	81.06	Very Good
	West Bengal	Chapramari WLS	79.17	Very Good
		Overall Mean MEE Score %	60.80	Good

Table 7.
Individual ratings of
National Parks and
Wildlife Sanctuaries
in Western region

Region	State	National Park (NP) and Wildlife Sanctuary (WLS)	MEE %	Rank
W E S T E R N	Gujarat	Barda WLS	56.10	Fair
	Gujarat	Marine (Gulf of Kutch) NP	65.20	Good
	Gujarat	Wild Ass WLS	58.30	Fair
	Gujarat	Shoolpaneshwar WLS	49.24	Fair
	Gujarat	Velavadar NP	66.94	Good
	Gujarat	Gir NP	93.33	Very Good
	Gujarat	Purna WLS	64.17	Good
	Maharashtra	Sanjay Gandhi NP	62.10	Good
	Maharashtra	Navegaon NP	53.80	Fair
	Maharashtra	Bhimashankar WLS	58.30	Fair
	Maharashtra	Chandoli NP	60.16	Good
	Maharashtra	Chaprala WLS	54.69	Fair

Region	State	National Park (NP) and Wildlife Sanctuary (WLS)	MEE %	Rank
	Maharashtra	Great Indian Bustard WLS	47.50	Fair
	Maharashtra	Karnala WLS	63.33	Good
	Madhya Pradesh	Kuno Palpur WLS	58.30	Fair
	Madhya Pradesh	Madhav NP	51.50	Fair
	Madhya Pradesh	Ratapani WLS	52.30	Fair
	Madhya Pradesh	Noradehi WLS	59.38	Fair
	Madhya Pradesh	Karera WLS	33.33	Poor
	Rajasthan	Keoladeo NP	75.00	Very Good
	Rajasthan	Desert NP	53.00	Fair
	Rajasthan	Kumalgarh WLS	59.10	Fair
	Rajasthan	Sitamata WLS	58.33	Fair
	Rajasthan	Mount Abu WLS	60.83	Good
		Overall Mean MEE Score %	58.90	Fair

Table 8.
Individual ratings of
National Parks and
Wildlife Sanctuaries
in North-eastern
region

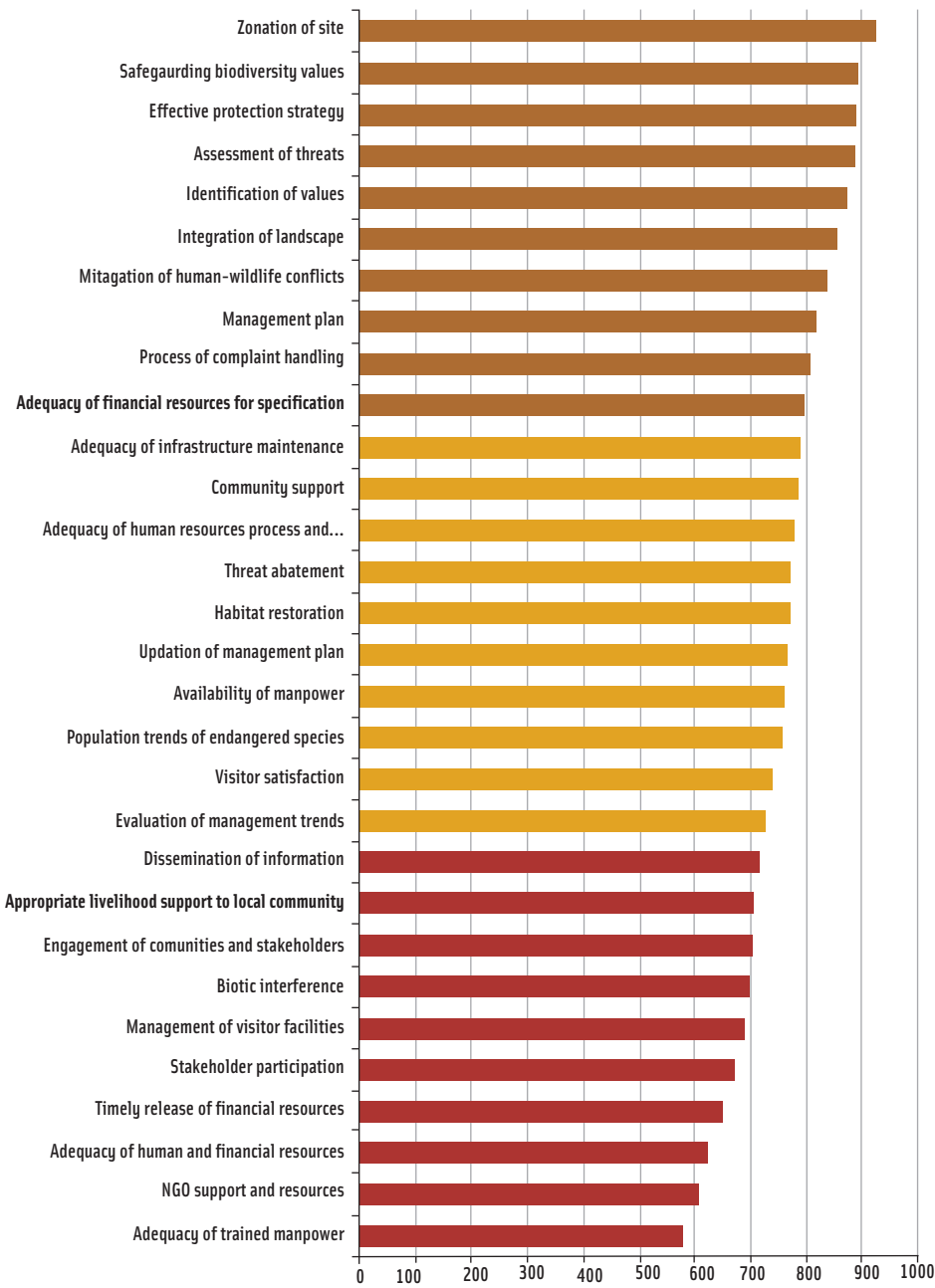
Region	State	National Park (NP) and Wildlife Sanctuary (WLS)	MEE %	Rank
N O R T H - E A S T E R N	Arunachal Pradesh	Sessa Orchid WLS	71.20	Good
	Arunachal Pradesh	Eagle Nest WLS	72.70	Good
	Arunachal Pradesh	Mouling NP	54.17	Fair
	Arunachal Pradesh	D'Ering Memorial (Lali)WLS	60.00	Good
	Assam	Pobitora WLS	77.30	Very Good
	Assam	Orang (Rajiv Gandhi) NP	72.70	Good
	Assam	Dibru-Saikhowa NP	52.27	Fair
	Assam	Hollongapar Gibbon WLS	75.00	Very Good
	Manipur	Keibul Lamjao NP	73.50	Good
	Meghalaya	Nongkhylliem NP	72.00	Good
	Meghalaya	Balphakram NP	58.59	Fair
	Meghalaya	Nokrek Ridge NP	60.00	Good
	Mizoram	Murlen NP	71.20	Good
	Mizoram	Ngengpui WLS	72.50	Good
	Mizoram	Phawngpui Blue Mountain NP	57.50	Fair
	Nagaland	Intanki NP	58.30	Fair
	Nagaland	Fakim WLS	48.33	Fair
	Sikkim	Kanchanzdonga NP	72.00	Good
	Sikkim	Barsey Rhododendron WLS	69.70	Good
	Sikkim	Pangolakha WLS	77.34	Very Good
	Sikkim	Fambong Lho WLS	42.50	Fair
	Tripura	Sipahijala WLS	65.90	Good
	Tripura	Gumti WLS	56.80	Fair
	Tripura	Trishna WLS	56.06	Fair
	Tripura	Bison (Rajbari) NP	56.67	Fair
	Tripura	Clouded Leopard NP	55.83	Fair
		Overall Mean MEE Score %	63.90	Good

2.3

Performance of Headline
Criteria/Indicators

The relative performance of 30 headline indicators is shown in Figure 2. 'Zonation of the site' had the best rating, while 'Adequacy of trained manpower resources' had the lowest rating across all the 125 National Parks and Wildlife Sanctuaries.

Figure 2.
Relative
performance of
headline indicators









CHAPTER **THREE**



STRENGTHS, WEAKNESSES AND ACTIONABLE POINTS

Region-wise Strengths, Weaknesses and Actionable Points of National parks and Wildlife Sanctuaries in India from 2006 to 2014

3.1

Northern Region

S. No.	State	National Parks and Wildlife Sanctuaries	Evaluation Year
1.	Delhi	Asola Bhatti Wildlife Sanctuary	2006-2009
2.	Haryana	Sultanpur National Park	2006-2009
3.	Haryana	Kalesar National Park	2006-2009
4.	Haryana	Bhindawas Wildlife Sanctuary	2012-2013
5.	Himachal Pradesh	Great Himalayan National Park	2006-2009
6.	Himachal Pradesh	Pin Valley National Park	2009-2010
7.	Himachal Pradesh	Kibber Wildlife Sanctuary	2009-2010
8.	Himachal Pradesh	Simbalwara Wildlife Sanctuary	2012-2013
9.	Jammu & Kashmir	Kishtwar National Park	2006-2009
10.	Jammu & Kashmir	Changthang Wildlife Sanctuary	2006-2009

11.	Jammu & Kashmir	Hemis National Park	2009-2010
12.	Jammu & Kashmir	Dachigam National Park	2012-2013
13.	Punjab	Abohar Wildlife Sanctuary	2009-2010
14.	Uttar Pradesh	Sohelwa Wildlife Sanctuary	2006-2009
15.	Uttar Pradesh	National Chambal Wildlife Sanctuary	2006-2009
16.	Uttar Pradesh	Kaimur Wildlife Sanctuary	2009-2010
17.	Uttar Pradesh	Sohagi Barwa Wildlife Sanctuary	2012-2013
18.	Uttarakhand	Govind Pashu Wildlife Sanctuary	2006-2009
19.	Uttarakhand	Rajaji National Park	2006-2009
20.	Uttarakhand	Nanda Devi National Park	2009-2010
21.	Uttarakhand	Kedarnath Wildlife Sanctuary	2012-2013
22.	Uttarakhand	Gangotri National Park	2012-2013

1

Asola Bhatti Wildlife Sanctuary, Delhi

Evaluation Year, 2006-2009

A. Management Strengths

- The site has little human and biotic interference. As the protected area (PA) is in the capital city, with thickly populated surroundings, it is cumbersome to keep it free from biotic interference; yet, by erecting storm fencing, etc., a great effort has been made to minimize the biotic interference.
- The site safeguards a large number of threatened biodiversity values. This is one of the few sanctuaries situated in a metropolis in India and surrounded by concrete jungle. The biodiversity values are immense.
- There is stakeholder participation in most of the planning processes.
- Keeping this small green island in the midst of a metropolis is a big task, considering the adverse factors of a poor soil, low rainfall, biotic interference, etc. The habitat restoration programmes are well planned and monitored.
- The site has a comprehensive protection strategy.
- Human-wildlife conflicts have been mitigated.
- The limited number of personnel available in the PA is well organized and managed with the resources required for that level.
- The resources are organized and managed to the extent required. The buildings, etc. are adequate.
- Human and financial resources appear to be no problem. There was no complaint about a paucity of funds or delayed release by funds by the state government.
- NGOs' contributions are systematically sought for management of some site-level activities.
- The resources are sufficient for most of the tasks.
- Most threats to the site have been ended.
- The expectations of many visitors are met.
- A planned approach to management is being instituted, and a deterioration of assets is being redressed.

B. Management Weaknesses

1. There is no management plan in place.
2. A limited number of planning and monitoring programmes are in place. Part of the wildlife sanctuary is being used to maintain deer enclosures and an enclosure for problem monkeys from various parts of the capital that are to be rehabilitated. Maintaining the monkey enclosure may be an unpleasant job for the PA management, but it is unavoidable. The number of monkeys is increasing, and they are degrading a part of the habitat where they are kept.
3. The site is not integrated into the wider network/landscape.
4. There is little or no public participation in the management of the PA. Except for the BNHS, there is hardly any public participation.
5. A complaint handling system is operational, but it is not responsive to individual issues, and limited follow-up is provided.
6. No livelihood issues are addressed by the PA management because there is no scope for this here.
7. There is some evaluation and reporting, but these are neither systematic nor routine.
8. The neighbours/adjacent communities are hostile and could not be involved in the management of the PA.

C. Actionable Points

1. A comprehensive management plan needs to be developed on a priority basis for effective PA management.
2. There is scope for integration of the network/landscape with Haryana State as the PA runs all along the western boundary. There is a good chunk of community/government land in Haryana that can be declared a conservation/ community reserve, but there seems to be no coordination with that state.
3. More public participation is needed for managing the site.
4. The complaint handling system needs to be responsive to individual issues and follow-ups.
5. Systematic and routine reporting of the flora and fauna needs to be taken up.

Sultanpur National Park, Haryana
Evaluation Year, 2006-2009

A. Management Strengths

1. Most of the values have been systematically identified, assessed and monitored.
2. Habitat restoration programmes are thoroughly planned and monitored.
3. The site has a comprehensive protection strategy.
4. Some resources are explicitly allocated towards achievement of specific management objectives.
5. Comprehensive formulae are systematically used to decide most resource allocation, and generally funds are released in time.
6. The resources and funds are sufficient for most of the tasks and are released in time.
7. The performance management for most staff members is directly linked to achievement of relevant management objectives.
8. Management-related trends are systematically evaluated and routinely reported.
9. The populations of most threatened/endangered species are increasing, and most others are stable.
10. Most of the biological communities are likely to be able to sustain the native biodiversity.
11. A planned approach to management is being instituted, and a deterioration of assets is being redressed.

B. Management Weaknesses

- 1. There is a management plan, but it is not comprehensive. There is no process in place for review the plan systematically and updating it.
- 2. Threats to the site have been identified correctly, but they have not been categorized systematically and assessed.
- 3. There are few, if any, opportunities for stakeholders to participate in the planning process.
- 4. NGOs make some contributions to the management of the site, but opportunities for collaboration have not been systematically explored.
- 5. Only a few trained officers and frontline staff members have been posted at the site.
- 6. There is little or no participation of the public in the management of the protected area (PA).
- 7. The complaint handling system is operational, but it is not responsive to individual issues. Only limited follow-up is provided.
- 8. No livelihood issues are addressed by the PA management.
- 9. The maintenance of the inventory of assets is ad hoc, and so is the maintenance schedule.
- 10. The neighbours/adjacent communities are hostile.

C. Actionable Points

- 1. Immediate actions need to be taken to develop a comprehensive management plan.
- 2. The threats to the site need to be systematically categorized and assessed.
- 3. Stakeholders need to be involved for effective long-term management of the site.
- 4. The contribution of NGOs to the management of the PA should be improved.
- 5. The site needs more trained frontline management staff members.
- 6. Steps need be taken to have strong participation of the public in the management of the PA.
- 7. The complaint handling system should be responsive to individual issues.
- 8. Livelihood issues need to be sought out for resource-dependent communities for management.
- 9. An inventory and a maintenance schedule of assets need to be maintained.

3. Kalesar National Park, Haryana, 2006-2009

A. Management Strengths

- 1. The site safeguards a large number of threatened biodiversity values.
- 2. Habitat restoration programmes are thoroughly planned and monitored.
- 3. The site has a comprehensive and very effective protection strategy.
- 4. Human-wildlife conflicts have been mitigated.
- 5. Adequate resources have been explicitly allocated for achievement of specific management objectives.

7. The performance management of most of the staff is directly linked to achievement of relevant management objectives.
8. The populations of most threatened/endangered species are increasing, and most others are stable.
9. Most of the biological communities are likely to be able to sustain the native biodiversity.
10. Most of the threats to the site have been abated.
11. The expectations of most visitors are met.
12. Most neighbours/local communities are supportive of the PA management.

B. Management Weaknesses

1. There is no management plan in place.
2. The values and threats of the site have been identified correctly but not systematically categorized, assessed and monitored.
3. There is little, if any, opportunity for stakeholder participation in planning.
4. NGOs contribute nothing to the management of the site.
5. There are only a few trained officers and frontline staff posted at the site.
6. There is little or no public participation in the management of the PA.
7. The complaint handling system is operational, but it is not responsive to individual issues, and limited follow-up is provided.
8. Little or no information is publicly available on the management of the PA.
9. There is some evaluation and reporting of management-related trends, but these are neither systematic nor routine.
10. Inventory maintenance of assets is ad hoc, and so is the maintenance schedule. Though funds do not seem to be a problem, there is no inventory or maintenance schedule.
11. Little or no management has been undertaken, or despite management efforts, deterioration of cultural heritage assets continues, or values are unknown

C. Actionable Points

1. Immediate actions are needed to develop a comprehensive management plan.
2. The site values and threats need to be systematically categorized, assessed and monitored.
3. Stakeholders need to be involved for long-term effective management of the site.
4. The contributions of NGOs to the management of the PA should be improved.
5. The site needs more trained frontline management staff.
6. Steps need be taken to ensure strong public participation in the management of the PA.
7. The complaints handling system should be responsive to individual issues.
8. Information on the management of the PA should be made available to the public.
9. Systematic and routine reporting of management-related trends is needed.
10. An inventory and maintenance schedule of assets needs to be maintained.

A. Management Strengths

1. Part of the Yamuna river basin in the state is predominantly agrarian, and yet because of its peculiar geomorphological features, it traditionally supported a rich biodiversity in its flood plain.
2. With intensive agricultural practices and urbanization/industrialization, dedicated land resources for conservation of aquatic faunal attributes are the need of the hour.

- 3. Site also freshwater faunal biodiversity outside reserve forest.
- 4. What was initiated as an irrigation balancing tank, required for regulating the flow of water in the Yamuna and an irrigation canal network for supplying water to towns, etc. incidentally started attracting migrant aquatic birds. This has provided a unique opportunity to conserve aquatic avifauna, which has been harnessed effectively.

B. Management Weaknesses

- 1. The water body and appurtenant lands are actually under dual control, and the objectives of the concerned agencies need be harmonized for better results and long-term sustainability.
- 2. Threats to the aquatic life, such as infestation by weeds [water hyacinth in particular], and increasing salinity may lead to eutrophication. Grazing by domestic cattle grazing, illicit felling of trees and trespassing are also management concerns.
- 3. There is a lack of control of the movement of vehicular traffic along the embankments.

C. Actionable Points

- 1. The management plan of Dalal is to be dovetailed with the report submitted by Tetra Tech. The plan should be consonant with the guidelines developed by the National Wetland Development. The emphasis should be on the provisions of the amended Wildlife Protection Act and strengthen a consultative mechanism for better convergence with the concerned agencies.
- 2. Science-based decisions need to be taken about an environmentally apt weed eradication method that will contribute to the income generation activity of Ecodevelopment Committees.
- 3. The interpretation centre needs to be refurbished, improved and made operative as soon as possible.
- 4. NGOs (local or otherwise, including those based in Delhi) need to be encouraged to carry out a long-term inventory, to institute a monitoring mechanism and to participate in environmental education/extension, etc.
- 5. The statutory requirements of appointing Honorary Wardens and forming a PA advisory committee need to be met to enhance local participation in planning and implementation of works as also to ensure transparency.

Great Himalayan National Park,
Himachal Pradesh
Evaluation Year, 2006-2009

A. Management Strengths

- 1. All the values and threats have been systematically identified, assessed and monitored.
- 2. The site has been identified correctly and systematically categorized with proper zonation plans.
- 3. The site has a comprehensive, science-based management plan prepared through a participatory process.
- 4. The management plan is routinely, systematically and scientifically updated through a participatory process.
- 5. The site safeguards a large number of threatened biodiversity values.
- 6. Stakeholders routinely and systematically participate in all planning processes.
- 7. Habitat restoration programmes are generally planned well and monitored.
- 8. Human-wildlife conflicts have.
- 9. The site is integrated fairly well into the network/landscape.
- 10. NGOs' contributions are systematically sought for management of some site-level activities.
- 11. The resources are sufficient for most tasks.
- 12. A large number of trained officers and frontline staff are posted at the site.
- 13. There is comprehensive and systematic public participation in all important aspects of the management of the PA.
- 14. Livelihood issues of resource-dependent communities, especially women, are addressed effectively by the PA managers.

- 15. Most threats to the site have been ended.
- 16. The expectations of most visitors are met.
- 17. Most neighbours/local communities are supportive of the PA management.
- 18. A planned approach to management is being instituted, and a deterioration of assets is being redressed.

B. Management Weaknesses

- 1. The site has some human and biotic interference.
- 2. Reintroduction programmes are entirely ad hoc.
- 3. A complaint handling system is operational, but it is not responsive to individual issues, and limited follow-up is provided.
- 4. Only some of the biological communities are likely to be able to sustain the native biodiversity.

C. Actionable Points

- 1. The human and biotic interference at the site needs to be addressed.
- 2. The site should be assessed to ascertain the possibility of any re-introduction programme.
- 3. The complaint handling system should be responsive to individual issues.
- 4. To carry out a census at this level will need more scientific inputs, but looking at the flora, the biological communities in most of the areas are supportive of the native biodiversity.

Pin Valley National Park,
Himachal Pradesh
Evaluation Year, 2009-2010

A. Management Strengths

- 1. A revised comprehensive landscape management plan is being prepared with the help of Nature Conservation Foundation, Mysore.
- 2. The flora and fauna of Trans-Himalayan Landscape are less diverse and threatened; the ibex, bharal, snow leopard and red fox, found in the national park, are also threatened, and the site is important as far as safeguarding their values is concerned.
- 3. Due to the vast area of the wilderness and low human population, there are very few conflicts within the human settlements, and no case has been recorded during the last 5 years.
- 4. The site is integrated fairly well into the network/landscape. In the draft proposal submitted to MoEF, Government of India titled "Understanding Snow Leopard Ranging along Human Pressure Gradient in Spiti, HP", the extent of Pin Valley National Park and Kibber Wildlife Sanctuary is proposed to be rationalized from the present 1400 km² to 2220 km² after excluding areas with a total extent of 46.88 km² situated close to habitation. These sites are to be treated as a single landscape, including the vast wilderness areas to the north-west of these areas, for the purpose of snow leopard conservation.
- 5. Most of the staffs are directly linked to performance and achievements of relevant management objectives.
- 6. Complaints are handled routinely. Due to the sparse population and the preoccupation of the people with their hard routine to ensure their livelihood, there are very few complaints.
- 7. A few livelihood issues, such as purchasing kerosene heaters and LPG heaters for villagers and maintenance of medicinal, fruit and fodder plant nurseries, are addressed by the PA management.
- 8. General information is available to the public regarding the management of the PA. The revised plan is likely to be more transparent.
- 9. Estimation of the populations of important species of mammals and birds was carried out in 2005-2006, 2006-2007 and 2009-2010 based on evidence collected by the field staff. The new management plan is likely to

emphasise estimation using more scientific methods, especially for the snow leopard and its prey species.

10. The estimates for important species such as the snow leopard and ibex show an increasing trend, but blue sheep population shows a downward trend.
11. Due to the difficult terrain and the minimal poaching, the biological communities are likely to support the native biodiversity.
12. Due to the harsh climatic conditions and the tough terrain, there are not many threats to the site. The population density is very low, and most of the people are Buddhists. The patrolling by the frontline staff keeps the threats under control.
13. The neighbouring communities, being totally dependent on the area for their existence, do support the park management to the extent possible.
14. The cultural heritage assets of the area, in the form of the culture and religion of the people, are very unique and are protected well.

B. Management Weaknesses

1. The threats to the site values were generally identified in the first management plan. They are proposed to be systematically documented or assessed in the revised management plan.
2. The site has some human and biotic interference. The entire Upper Spiti Landscape, including Pin Valley National Park, has a very low population density (less than 1 person per km²), but livestock husbandry is the mainstay of their existence, and the dependence of the people and development pressure pose stresses on the wildlife of the region.
3. The site has been identified correctly but not categorized properly. There was no zonation as such in the first management plan, but the revised management plan is likely to have core, buffer and transition zones for the entire Upper Spiti Landscape, which is being proposed as the Cold Desert Biosphere Reserve.
4. There is hardly any scope for habitat restoration except some soil conservation work, planting of bushes and fencing of areas for pasture development. Very few programmes have been carried out so far. They were ad hoc and unplanned. The revised plan is likely to determine the conservation needs of the snow leopard, for which specific habitat restoration programmes may be planned
5. The site has an ad hoc protection strategy. The entire Pin Valley National Park is looked after by one Range Officer, but the post is vacant and is being looked after by a single Range Officer who is also in charge of Kibber Wildlife Sanctuary. There are only three Forest Guards in the national park. There is an acute shortage of forest guards in Spiti Wildlife Division as 50% of the sanctioned strength is vacant.
6. The human resources are insufficient, and so are the financial resources. There is an acute shortage of frontline staff. There are no firearms with the frontline staff. The patrolling staffs also need high-calorie tinned foodstuffs in the difficult and inhospitable terrain.
7. There are hardly any resources in the protected area (PA); however, the available resources are explicitly allocated for PA management.
8. No local or outside NGOs are active in the area. Hence NGOs have not contributed anything to the management of the PA.
9. None of the staff members are trained in wildlife management; all have undergone only the induction training.
10. There are hardly any visitors to the national park. No visitors come specially to visit the PA, but large numbers of domestic and foreign tourists do visit Kaza and other areas of Kinnaur. At present there are no visitor services and facilities in place though there is ample scope for these.
11. The influx of domestic and foreign tourists and the pressure of development are likely to affect the local culture if these are not regulated properly.
12. The blue sheep population shows a downward trend.

C. Actionable Points

1. The management plan of the site needs to be revised immediately.
2. The extensive human and biotic interference need to be minimized immediately through effective public participation.
3. The site needs to be categorized into zones.
4. The habitat restoration programme needs to be more effective and carried out in a planned way for better

management of the site. In view of the difficult terrain and harsh weather conditions, a better strategy needs to be planned.

5. The site needs a better protection strategy with the availability of the requisite number of staff members ensured.
6. Adequate funds and resources should be released on time. The available human and financial resources are insufficient for most tasks. Even the sanctioned strength of the frontline staff is not in position. In view of the ecological and historical importance of the PA, the fund allocation by the Government of India needs to be enhanced immediately.
7. It is crucial to enhance the contribution of NGOs to the management of the PA.
8. More frontline staffs need to be trained in wildlife management.
9. Urgent steps need to be taken to start the visitor services. There is scope for a modest interpretation centre at Kaza, particularly displaying information about the ibex, snow leopard and a few other rare species of the area.
10. The influx of domestic and foreign tourists and the pressure of development need to be regulated properly.
11. Immediate actions need to be taken to determine the cause of the declining blue sheep population in the sanctuary.

7

Kibber Wildlife Sanctuary, Himachal Pradesh Evaluation Year, 2009-2010

A. Management Strengths

1. The site has a routine management plan (MP) along with Pin Valley National Park. The term of the old MP having expired, its revision has been outsourced to NCF Mysore, and it is under preparation.
2. The protected area (PA) is in the Trans-Himalayan cold desert area and has rare and threatened plant and animal species. After rationalization and inclusion of new areas, the entire upper Spiti catchment will more appropriately safeguard the threatened biodiversity values of this vast cold desert landscape.
3. Due to the geographical and climatic conditions there is not much scope for habitat restoration, but some efforts have been made to develop nurseries for medicinal, fodder and fruit plants, and planting has been done on a small scale on nullahs with perennial water. Some soil conservation work has also been carried out.
4. No incidents of conflicts have been recorded during the last 5 years from the habitations essentially because of the sparse population. The local staff have a good intelligence network for getting information about poaching, etc.
5. The site is integrated fairly well into the network/landscape. After rationalization the PA will have an area of 2220 km², and this, along with PVNP, to the south-west, and the vast wilderness of the surrounding area, is being proposed for snow leopard projects, for which a draft proposal has already been submitted to MOEF, Government of India.
6. The staffs are engaged in achievement of management objectives.
7. Complaints are handled routinely. Due to the sparse population and the preoccupation of the people with their hard routine to ensure their livelihood, the complaints are very few in numbers and are handled in a traditional way by the Forest Department.
8. A few livelihood issues, such as raising of medicinal, fodder and fruit plant nurseries and engagement of local youth in seasonal patrolling are addressed by the PA management.
9. Estimation of the important species of mammal and bird was carried out during 2005–2006, 2006–2007 and 2009–2010. The estimation of mammals was based on evidence recorded by the field staff.

10. The estimated figures for important species such as the snow leopard and ibex show an increasing trend, but the blue sheep population shows a downward trend.
11. Due to the difficult terrain and minimal poaching, the biological communities are likely to support the native biodiversity.
12. The neighbouring community is not hostile, but it is also not supportive. The community is indirectly supportive as the people are Buddhists and do not resort to poaching, etc.
13. The cultural heritage asset of the area is in the form of the culture and religion of the people, which is unique and well protected.

B. Management Weaknesses

1. Threats to the values of the site were generally identified in the original management plan. They are proposed to be systematically documented or assessed in the revised management plan.
2. The site has some human and biotic interference. The site has great grazing pressure from domestic cattle and particularly sheep and goats, which number over 23,000 in the local villages. There are also 10,000 migratory sheep and goats from Shimla, Kullu and Kinnaur districts.
3. The site has been identified correctly but not categorized properly. The wildlife sanctuary (WLS), which was notified in 1992 with an area of 1400 km², has not been categorized in terms of zonation.
4. The site has an ad hoc protection strategy. The only strategy adopted is to carry out routine patrolling of the area by the frontline staff. Teams of the local youth are also mobilized for 5 days' patrolling, apart from group patrolling by the frontline staff. There is an acute shortage of staff members, which hampers the protection.
5. The resource allocation is ad hoc, and funds are never released in time. Neither the human nor the financial resource are considered sufficient. There is a severe shortage of frontline staff members as 50% of the sanctioned posts of forest guards are vacant. Against a sanctioned strength of 4 Forest Rangers, there is only one in place, who also holds charge of PVNP. Buildings are generally available to the field staff, but resources such as high-altitude patrolling kits, a communication network, arms and ammunitions, binoculars and GPS are lacking. Nutritious rations, which are very necessary for long-range patrolling parties, are also not provided. The only vehicle with the DFO in charge of this WLS and PVNP is mostly used for this PA.
6. No local or outside NGOs are active in the area. Hence NGOs have not contributed anything to the management of the PA.
7. None of the staff have been trained in wildlife management. All of them have undergone the forestry induction training programme.
8. At present there is little information available publicly.
9. No visitor services and facilities are available at the moment. There are also not many visitors to the PA. There has been no effort to meet the expectations of visitors.

C. Actionable Points

1. The management plan needs to be revised immediately.
2. The extensive human and biotic interference needs to be minimized immediately through effective public participation, especially the grazing pressure from the domestic cattle from Shimla, Kullu and Kinnaur districts. The greatest threat to the site is the grazing pressure of domestic cattle, which has not been tackled so far, and this needs immediate attention. The site needs proper categorization into zones.
3. The site needs a better protection strategy wherein the requisite numbers of staff members are available.
4. Adequate funds and resources should be released on time. The human and financial resources are insufficient for most tasks. Even the sanctioned strength of the frontline staff is not in position. In view of the ecological and historical importance of the PA, the allocation of funds by the Government of India needs to be enhanced immediately.
5. Enhancing the contribution of NGOs is crucial for the management of the PA.
6. More frontline staff members need to be trained in wildlife management.
7. Information about the management of the site should be made available to the public.
8. Urgent steps need to be taken to improve the visitor services.
9. Immediate actions are needed to determine the cause of the decline in the population of blue sheep inside the sanctuary.

8

Simbalwara Wildlife Sanctuary, Himachal Pradesh Evaluation Year, 2012-2013

A. Management Strengths

1. Being located near a tri-junction of states, the site provides continuity to the habitat and acts as a corridor linking Himachal Pradesh with Uttarakhand and Haryana (Kalesar National Park).
2. The site is easily accessible from the Wildlife Institute of India. There is scope for initiating regular research and monitoring activities under the stewardship of the WII.
3. The protected area (PA) has a science-based management plan (the preparation of the plan was outsourced to Enviro-Search) that provides excellent data on the biological attributes.

B. Management Weaknesses

1. Considering the limitations of the agency to which drafting of the management plan was outsourced, there is scope for grounding a revised plan on remote sensing data and local site knowledge.
2. Weed control is needed for improving the habitat.
3. There is a lack of control over trespassers. The site is not protected adequately and lacks a strategy in which there are manned barrier gates, fire control, grazing, etc.
4. Traditional access and utilization of resources persist on the ground and thus need to be harmonized with the management goals.

C. Actionable Points

1. Lantana needs to be removed from the PA to improve the habitat. Allowing removal of weeds to cater to energy needs and improve fodder and forage needs to be explored.
2. Vaccination of cattle is essential.
3. Integration of the site into a larger ecological perspective by providing connectivity with Kalesar Conservation Reserve (1465 ha) and increasing the extent of the sanctuary by 887 ha are strongly recommended.
4. The primary stakeholder, village Pillodi, needs to be taken on board and the major thrust given to eco-tourism. The possibility of involving Amargarh or other villages willing to participate in eco-tourism initiatives must be explored.

9

Kishtwar National Park, Jammu and Kashmir Evaluation Year, 2006-2009

A. Management Strengths

1. The site has a comprehensive management plan.
2. Comprehensive formulae are systematically used to decide most resource allocation, and generally funds are released in time.
3. A large number of trained officers and frontline staff are posted at the site.
4. There is systematic evaluation and routine reporting of management-related trends.
5. Publicly available information provides detailed insight into major management issues of the Protected Area.
6. The populations of most threatened/endangered species are increasing, and most others are stable.

- 7. A planned approach to the management of the cultural heritage is being instituted, and a deterioration of assets is being significantly redressed.

B. Management Weaknesses

- 1. Threats are not systematically documented or assessed, as a result of which the site has extensive human and biotic interference. Threats such as poaching, grazing, woodcutting, fire, snow and insects are mentioned in the management plan, but they have not been assessed in different parts of the national park.
- 2. The site has been identified correctly but not categorized into zones.
- 3. The management plan has just been prepared and needs to be reviewed. Management prescriptions need to be made.
- 4. The site does not safeguard the threatened biodiversity values.
- 5. A limited number of planning and monitoring programmes are in place for habitat restoration.
- 6. The site has an ad hoc protection strategy.
- 7. Human-wildlife conflicts are rampant.
- 8. NGOs contribute nothing to the management of the site.
- 9. Neither the human resources nor the financial resources are considered sufficient by the PA manager.
- 10. There is no systematic approach to the handling of complaints.
- 11. No livelihood issues are addressed by the PA management.
- 12. The visitor services and facilities are at odds with the relevant PA category and/or threaten the values of the PA. The expectations of visitors are generally not met. Due to an insurgency problem there are no visitors at the site.
- 13. The inventory maintenance is ad hoc and so is the maintenance schedule.
- 14. The threats to the site have not ended but have increased. The threats remain at the same critical level as there are no efforts to contain them, except the poaching. Violation of Forest Conservation Act in construction of hydroelectric projects has added a new dimension to the threats.

C. Actionable Points

- 1. Threats need to be systematically documented and assessed so that the extensive human and biotic interference is minimized and the human-wildlife conflict is reduced.
- 2. The site needs proper categorization into zones.
- 3. The management plan needs to be reviewed and appropriate management prescriptions made.
- 4. The threatened biodiversity values of the site need to be assessed.
- 5. The site should have an effective protection strategy.
- 6. The contribution of NGOs should be improved for the management of the PA.
- 7. Adequate human and financial resources are needed for better management of the site.
- 8. Steps need to be taken to strengthen the participation of the public in the management of the PA.
- 9. The complaint handling system should be systematic and responsive to individual issues.
- 10. The visitor services and facilities need to be improved urgently.
- 11. An inventory and maintenance schedule of the assets needs to be maintained.

Changthang Wildlife Sanctuary,
Jammu and Kashmir
Evaluation Year, 2006-2009

A. Management Strengths

- 1. The site safeguards a large number of threatened biodiversity values.
- 2. The site is fully integrated into the wider network/landscape.

3. There is systematic public participation in most aspects of the management of the protected area (PA).
4. The PA management addresses the livelihood issues of resource-dependent communities to the extent possible. Changpas, who are mainly pastoralists, are not disturbed. Improvement of coral pens, supply of fodder, construction of home stays for tourists, etc. are being carried out on a limited scale for the local people.
5. A detailed insight into management issues and information are available to the public.
6. The expectations of most visitors are met.
7. Most neighbours/local communities are supportive of the PA management.
8. A planned approach to management is being instituted and a deterioration of assets is being significantly redressed.

B. Management Weaknesses

1. Values and threats have been identified but are not systematically assessed and monitored.
2. The site has extensive human and biotic interference. In spite of the large geographical area of the PA, the biotic pressures are high, especially when the biomass production is very poor, due to the cold desert conditions. There are 28 villages with 45 hamlets, with a population of over 15,000. Apart from the local population, there are about 10 Tibetan Refugee (TR) camps, with a population of over 2200. All the households, including those of the TRs, have on an average about 40 to 50 sheep and 150 to 200 goats, apart from large numbers of yaks, horses, donkeys and dogs. There is a huge presence of military and paramilitary persons all over the PA in 15 to 20 locations. The tourist inflow is also high, which necessitates the movement of pack animals, camping and movement of supplies.
3. The site has not been identified correctly or categorized. An extent of 4000 km² was notified as Changthang Wildlife Sanctuary (WLS) in 1987, but the local wildlife department is of the view that the boundaries described in the notification actually encompass an 18,800 km² area.
4. The site has no management plan in place.
5. Stakeholders participate in some planning processes.
6. A few planning and monitoring programmes are in place for habitat restoration.
7. The site has an ad hoc protection strategy.
8. There is a scarcity of resources. The only Forest Ranger in the WLS does not have any vehicle in spite of the vast area in which he is supposed to move around. There is one two-wheeler with him, but due to the harsh climate, its use is limited. The only two check-posts, at Tangse and Anle, are in a dilapidated condition. There are no guard chowkis. The Range Office and Range Quarter at Nyoma are also old. There are no weapons. There is no communication system. No high-altitude uniform has been provided; instead, the normal uniform is provided.
9. There has hardly been any contribution by NGOs in terms of finances or material. There has also been a general discouragement by the state government of such funding and resources.
10. The resources are highly insufficient, including the human resources, for the large number of tasks to be undertaken in such a vast landscape.
11. None of the frontline staff are trained in wildlife conservation and management.
12. There are hardly any complaints to be handled due to the poor communication facilities, ignorance of the people and token presence of PA staff.
13. There are very few assets available in the PA, and funds are not available for their maintenance and management.
14. There are numerous threats to the site such as grazing, tourism and other biotic pressures, which have not been ended.

C. Actionable Points

1. Immediate actions are needed to develop a comprehensive management plan.
2. The values and threats need to be systematically assessed and monitored.
3. The site needs to be re-notified after the final area is identified.
4. The extensive human and biotic interference should be minimized through community participation in the management and conservation of the PA.
5. The site needs an effective protection strategy.
6. The scarcity of funds needs to be addressed immediately.
7. Collaboration with NGOs should be enhanced for the management of the PA.
8. The complaints handling system needs to be more effective for better management of the site.

Hemis National Park, Jammu & Kashmir Evaluation Year, 2009-2010

A. Management Strengths

1. The site has properly been identified as a national park representing a varied assemblage of habitats of the high-altitude Trans-Himalayan regions.
2. There is a management plan. Recently, efforts were initiated to prepare a scientifically sound management plan with technical guidance from the Wildlife Institute of India (WII), Dehradun.
3. The site safeguards threatened biodiversity values such as the snow leopard, wolf, Himalayan red fox, blue sheep, Ladakh urial, Tibetan argali, ibex, Himalayan snow cock, golden eagle and lammergeier vulture, found typically in rolling and rugged hilly terrains.
4. Stakeholders participate in some planning. While a committee has not been created, the local participation is mainly drawn through a registered eco-development committee (EDC) named the Youth Association for Conservation and Development of Hemis National Park.
5. Due to the presence of Buddhist communities in and outside Hemis National Park (HNP), the site receives an effective social fencing. The communities help prevent any sort of poaching of wildlife species. The Wildlife Department has appointed Wildlife Watchers, and anti-poaching patrolling units have been established.
6. Human-wildlife conflicts are mainly restricted to livestock killing by snow leopards or wolves and crop damage by wild herbivores such as blue sheep. The Wildlife Department pays compensation for killing of livestock.
7. The site is integrated fairly well into the network/landscape. HNP is part of the Trans Himalayan region and is contiguous with other ecologically similar regions of high conservation values such as Nubra Valley and the Changthang region.
8. Wildlife Department is working along with a few local and national NGOs in various activities. The Snow Leopard Conservancy (SLC), Ladakh Ecological Development Group (popularly known as Ecology) and WWF are providing support in research, education and various programme implementations. Also, the National Conservation Foundation (NCF) provided some assistance in reducing human-wildlife conflicts in and around the HNP area. Recently the park authorities combined their research efforts with WWF and SLC.
9. Although a grievance redressal system is in place at HNP, an officer has been nominated for RTI-related enquiries. So far, no one has made any RTI request. For other complaints and comments, routine filing procedures are followed.
10. Substantial livelihood issues are addressed by the protected area (PA) management. Considering the fact that in recent years tourism (mainly trekking) has become a significant income generating system for the local people, the Wildlife Department has given support to the local people.
11. The populations of most threatened/endangered species are increasing, and most of the others are stable. Although no scientific census of major mammals has been carried out recently, in 2007 efforts were made to estimate the numbers of a few species such as the snow leopard, blue sheep, Ladakh urial, argali and ibex.
12. All the biological communities are likely to be able to sustain the native biodiversity.
13. Most of the threats to the site have been ended.
14. The expectations of most visitors are met. Large numbers of tourists/trekkers visit the HNP area. But no records are maintained about the feedbacks of visitors, and it is generally reported that those who visit HNP and experience the Buddhist culture, varieties of wildlife and colourful landscapes are generally satisfied.
15. Most of the neighbours/local communities are supportive of the PA management.
16. The main heritage asset of the site is the strong Buddhist culture, which is protected by the age old conservation ethos of the local people and constant motivation from the teachings of their revered masters. There are many old monasteries (gompas) located within HNP (e.g. in Hemis, Chilling, Markha, Kaya and Skyu.). These gompas stands naturally protected within the precincts of the national park.

B. Management Weaknesses

1. Threats and values have been systematically identified but not assessed properly.
2. The site has some human and biotic interference. Tourism-related activities, especially trekking, are the main human interference in the PA. Locating camping sites at different places of the NP is a key concern.
3. The site has not been systematically categorized and demarcated into different zones.
4. Though HNP was notified in 1987, there has been just one management plan, drafted in 2007, for a five-year period. The management plan draws only broad contours of PA management.
5. No targeted habitat restoration programmes are being planned and executed.
6. Given the large size of the national park, the manpower available to manage and guard the site is quite limited. The Wildlife Warden has additional charges of Changthang and Karakoram sanctuaries. There are just one RFO and one Forester to look after the entire national park area. Often, the staffs under the Leh Wildlife Division are given additional duties in the HNP area. Several requests were made to fill the positions of the vacant staff, but till date not much has happened on that front.
7. Surprisingly, no vehicles are available specifically for the management of HNP. So far, the need for vehicles has been met through the Leh Wildlife Division. There is no effective communication system in place. Most importantly, there are no buildings or camping sites for the patrolling or guarding staff within the HNP area. A request for one wildlife rescue vehicle was made in 2009–2010, but no grant has been received for one.
8. The resource allocation is ad hoc, and funds are never released in time. The resources are insufficient for most of the tasks. The PA management at the local level is helpless without adequate resources being received from the authorities. The funds released over the last many years are quite inadequate for achieving the objectives of the overall management of HNP.
9. There is no linkage between staff performance management and the management objectives. There is no clarity of objectives of the management in the absence of any well chartered management plan. None of the staff have been recruited specifically for HNP. Staff members from the Wildlife Division are deputed for some work on a need basis. Also, the staffs have to look after duties other than PA management. The Management plan suggested recruitment of PA staff, but no sanction has been made so far.
10. There is hardly any information available to the public. A web site was developed and hosted earlier, but it was not updated later on and currently it is non-functional. Within the HNP area there are hardly any hoardings, messages, etc. related to PA management.
11. There are no visitor services or interpretation facilities in place.

C. Actionable Points

1. Threats and values need to be properly assessed for the PA management.
2. Human and biotic interference, especially tourism, need to be regulated.
3. Considering the vastness of the site, coupled with the very low density of human presence, the site needs to be demarcated into different management zones innovatively. Since, the national park has been mainly formed by three almost parallel valleys (Rumbak, Markha and Shang), zoning needs to consider in these naturally demarcated areas.
4. The site needs immediate actions to revise the present management plan, prepared in 2007, including all site necessities.
5. Realizing the importance of this site, several other smaller PAs were proposed by WII. However, it would be extremely desirable to establish a biosphere reserve as suggested in the management plan for effective and effective management of the entire landscape instead of having many small PAs.
6. Habitat restoration should be carried out in a planned way.
7. Adequate funds and resources need to be released on time. The available human and financial resources are insufficient for most tasks. Even the sanctioned strength of frontline staff is not in position. In view of the ecological and historical importance of the PA, the allocation of funds by the Government of India needs to be enhanced immediately.
8. The staff performance management and management objectives need to be linked.
9. Information about the management of the site should be available to the public. Looking at the projected demands of both domestic and foreign tourism, a concerted plan for sustainable tourism needs to be put in place sooner than later. The Ladakh Autonomous Hill Area Development Council needs to play a major and significant role towards achieving this goal. Urgent steps need to be taken to improve the visitor services.

Dachigam National Park, Jammu & Kashmir

Evaluation Year, 2012-2013

A. Management Strengths

1. The biodiversity of the site is representative of eight forest types in the Himalayan Bio-geographic Zone, with Alpine, Temperate and Temperate Broad-Leaf biomes.
2. Together with other protected areas (PAs) in the buffer zone (Overa Aru Sanctuary–Dara Khimber, City Park, Khonmoh, Khreu and Khangund (CRs)), it makes an almost continuous, near-pristine area of nearly 500 km² extent.
3. The PA was acclaimed for its good governance during the 1980s (MoEF award for well managed national park).
4. The science-based comprehensive management plan that has been placed on the web site has established an open, transparent approach—a good trend setter for others to follow.

B. Management Weaknesses

1. Despite an almost century old history of wildlife conservation-centric forest resource management, documentation thereof is not evident.
2. The information available on the stakeholders, their needs and support needed and areas for joint efforts is rudimentary.
3. There is deterioration in the law and order situation as a result of weak administration of the upper regions, which are important as hangul habitats.
4. The mitigation measures for habitat improvement (planting 1 lakh seedlings for improvement of grazing land, with an outlay of Rs. 2 lakhs per annum, and weed control, with an outlay of Rs. 3 lakhs) are ad hoc and inadequate.
5. With more than 40 villages reported to be in the surrounding area, the provision made for eco-development (Rs. 10 lakhs per annum) is ad hoc and inadequate.
6. The measures taken to protect key species are not fully tuned for the best results.
7. The contentious issues of relocating a sheep breeding farm and excluding grazing by sheep and goats as measures for restoration of hangul habitats are unresolved. A database on man–animal conflicts is incomplete.
8. Considering the potential for tourism and environmental education, the proximity to the state capital, etc., the PA requires more staff, but even the currently sanctioned staff component is not in place. The staff is not fully equipped to work in the difficult terrain and climate.
9. There is a lack of participation of stakeholders in the development of the management plan.
10. "Holding of problematic animals" for too long within the PA is not desirable, and the allocation made therefor (Rs. 4 lakhs per annum) is meager. There has been sub-optimal utilization of funds during the last two years.

C. Actionable Points

1. Garnering the people's support for the conservation initiatives needs to be the first priority.
2. The efficacy of concerted measures for regulating grazing rather than fencing needs to be evaluated before substantial investments are made. Alternative pasture land development outside the PA is to be explored and planned. "Rescue centres" need to be phased out from the PA.
3. Enhance posts and ensure that the same are manned fully/ resolve issue of temporary 'labor'.
4. Information related to the PA needs to be made available, and the scope of public support for conservation and management needs to be defined.
5. Tourism-related support providers are also stakeholders and thus need to be consulted.

Abohar Wildlife Sanctuary, Punjab Evaluation Year, 2009-2010

A. Management Strengths

1. The site safeguards threatened biodiversity values such as fishes, reptiles, birds and small mammals and the blackbucks, which are found typically agricultural habitats due to the conservation ethics of the Bishnoi community.
2. Stakeholders participate in most of the planning processes.
3. The site has a comprehensive and very effective protection strategy.
4. Human-wildlife conflicts have been mitigated.
5. NGOs' contributions are systematically sought by the management for many site-level activities.
6. There is comprehensive and systematic public participation in all important aspects of protected area (PA) management.
7. Most of the biological communities are likely to be able to sustain the native biodiversity.
8. Most threats to the site have been ended.
9. The expectations of most visitors are met.
10. Most of the neighbours/local communities are supportive of the PA management.
11. A planned approach to management is being instituted, and a deterioration of assets is being redressed.

B. Management Weaknesses

1. There is no management plan in place.
2. Habitat restoration programmes are entirely ad hoc.
3. The site not integrated into the wider network/landscape.
4. The personnel are poorly organised and managed.
5. The resources available for PA management are limited.
6. Resource allocation is ad hoc, and funds are never released in time.
7. The resources insufficient for most of the tasks.
8. There are very few trained officers and frontline staff at the site for effective PA management.
9. There is no linkage between the staff performance management and management objectives.
10. There is no systematic approach to handling complaints and comments about the management of the PA.
11. Livelihood issues of resource-dependent communities, especially women, are not addressed by the PA management.
12. Little or no information on the management of the PA is publicly available.
13. There are no visitor services in place, but anybody visiting the PA gets a ready welcome, support and guidance from the community.

C. Actionable Points

1. An effective management plan is needed.
2. Habitat restoration programmes and periodic monitoring are needed.
3. More resources need to be allocated, and funds need to be released in a timely manner.
4. The staff strength needs to be reworked realistically by rank, considering the ecosystem, protection aspects and need for multiple roles.
5. The means of mobility and equipment support need to be augmented.
6. The site needs trained manpower resources for effective PA management.
7. A responsive system is required for handling complaints and comments about the PA management.

- 8. Steps need to be taken to address livelihood issues of resource-dependent communities.
- 9. Systematic evaluation and routine reporting of biodiversity trends need to be carried out on a priority basis.

Sohelwa Wildlife Sanctuary, Uttar Pradesh Evaluation Year, 2006-2009

A. Management Strengths

- 1. Most of the threats have been systematically identified and assessed.
- 2. The site has a comprehensive management plan.
- 3. The site safeguards a large number of threatened biodiversity values.
- 4. NGOs' contributions are systematically sought and negotiated for by the management for many site-level activities.
- 5. There is comprehensive and systematic participation of the public in all important aspects of management of the protected area (PA).
- 6. Publicly available information provides detailed insight into major management issues of Protected Area.
- 7. Most threats to the site have been ended.
- 8. The expectations of most visitors are met.
- 9. A planned approach to management is being instituted, and a deterioration of assets is being redressed.

B. Management Weaknesses

- 1. The site has extensive human and biotic interference.
- 2. The site has been identified correctly but not categorized.
- 3. The current management plan of the PA is the first one that is not due for revision. However, it needs to be updated immediately.
- 4. There are few, if any, opportunities for the participation of stakeholders in the planning process.
- 5. A limited number of planning and monitoring programmes are in place for habitat restoration.
- 6. The site has an ad hoc protection strategy.
- 7. Human-wildlife conflicts are rampant.
- 8. There are very few trained officers and frontline staff members at the site.
- 9. There is some linkage between the staff performance management and management objectives, but these are not consistently or systematically assessed.
- 10. There is little or no participation of the public in the management of the PA.
- 11. The complaint handling system is operational, but it is not responsive to individual issues. There is limited follow-up.
- 12. No livelihood issues are addressed by the management of the PA.
- 13. There is no routine reporting of management-related trends. The management trends are not being systematically evaluated. The current evaluation is the first of its kind to be carried out by an external agency on the basis of the IUCN framework.
- 14. Maintenance of the inventory of assets is ad hoc, and so is the schedule of maintenance of assets.
- 15. The neighbours/ adjacent communities are hostile.

C. Actionable Points

- 1. The management plan needs to be upgraded.
- 2. The site needs to be categorized into zones.

3. The extensive human and biotic interference need to be minimized through effective participation of the public. Human-wildlife conflicts will also be reduced thereby.
4. The protection strategies need to be reframed for management.
5. More frontline staff members need to be trained for PA management.
6. A responsive system for handling complaints and comments about the management of the PA is required.
7. Steps need to be taken to address the livelihood issues of resource-dependent communities.
8. Biodiversity trends need to be evaluated systematically and reported routinely on a priority basis.
9. The adjacent communities should be involved for effective PA management.

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National Chambal Wildlife Sanctuary, Uttar Pradesh Evaluation Year, 2006-2009

A. Management Strengths

1. Most threats have been systematically identified and assessed.
2. The site has a comprehensive management plan.
3. Reintroduction programmes are generally well planned and monitored.
4. The site is integrated fairly well into the network/landscape.
5. The performance management for most staff members is directly linked to achievement of relevant management objectives.
6. Except that the existing rights mentioned in the management plan are allowed with restrictions and local people are engaged as labourers in departmental work, no other livelihood issues are addressed.
7. The populations of most of the threatened/endangered species are increasing, and most of the others are stable.
8. Most of the biological communities are likely to be able to sustain the native biodiversity.
9. Most of the threats to the site have been ended.
10. The expectations of most visitors are met.
11. A planned approach to management is being instituted, and a deterioration of assets is being redressed.

B. Management Weaknesses

1. The site has extensive human and biotic interference.
2. The site has been identified correctly but not categorized.
3. This is the first management plan of the protected area (PA). It may need updating and systematization based on recent surveys and studies and experience gained.
4. Because of the remoteness of the site, the perpetual fear of the outlaws living in the ravines and the low consumption level of the local people and compatible way of life, the biodiversity values of the site have been safeguarded in spite of the heavy biotic pressures.
5. There is little scope for habitat restoration programmes except some soil and moisture conservation work and plantation of grasses and fodder species in the ravines.
6. The site has an ad hoc protection strategy.
7. NGOs make some contributions to the management of the site, but opportunities for collaboration have not been systematically explored.
8. The available resources are insufficient for most tasks.
9. Only a few trained officers and frontline staff have been posted at the site.
10. There is little or no public participation in the management of the PA.
11. A complaint handling system is operational, but it is not responsive to individual issues, and limited follow-up is provided.

- 12. There is some evaluation and reporting of management-related trends, but these are neither systematic nor routine.
- 13. The inventory and maintenance of assets are ad hoc, and so is the maintenance schedule.

C. Actionable Points

- 1. The present management plan needs to be reviewed.
- 2. The extensive human and biotic interference at the site need to be reduced.
- 3. The site needs to be categorized into zones.
- 4. The site needs an effective protection strategy.
- 5. Adequate resources need to be allocated on time.
- 6. The contributions of NGOs to the management of the PA should be improved.
- 7. The site needs more trained frontline management staff.
- 8. Steps need be taken to strengthen the participation of the public in the management of the PA.
- 9. The complaint handling system should be responsive to individual issues.
- 10. Systematic and routine reporting of management-related trends is needed.
- 11. An inventory and a maintenance schedule of assets need to be maintained.

Kaimur Wildlife Sanctuary, Uttar Pradesh
Evaluation Year, 2009-2010

A. Management Strengths

- 1. There is a management plan.
- 2. The site safeguards a large number of threatened biodiversity values.
- 3. Large-scale plantation and soil conservation work has been carried out under NREGA during the last two years for habitat restoration.
- 4. The site has a comprehensive protection strategy. The area is divided into 14 sections and 41 beats for protection purposes.
- 5. Some resources have been explicitly allocated for achievement of specific management objectives.
- 6. The performance of most staff members is directly linked to achievement of management objectives.
- 7. There is opportunistic public participation in a few aspects of protected area (PA) management. Earlier, under the World Bank's eco-development programme, some livelihood and forest restoration activities were planned through a participatory process.
- 8. The complaint handling system operates in a routine way and is typically bureaucratic in approach.
- 9. The park authorities are arranging health camps for both the human and livestock populations. The NREGA targets being taken up by the PA management are helping the poor local tribals and other people to address the livelihood issues hitherto left unaddressed.
- 10. A visitor cum interpretation centre has been developed at Mahoria (near the forest rest house). It is informative and is visited by students and other visitors. The remarks in the visitor book are encouraging.
- 11. A biennial census of important carnivores and herbivores is carried out regularly by traditional methods, and the counts are being maintained.
- 12. Most of the biological communities are likely to be able to sustain the native biodiversity.
- 13. Threats such as poaching and fire have been ended to some extent.
- 14. The expectations of most visitors are met. There are some sites of historical, ecological and recreational importance where visitors, mostly villagers, students and a few outsiders, visit. The interpretation centre at Mahoria and sightings of large herds of blackbuck are good attractions.

15. The cultural heritage assets, such as the fossil park at Salkhan, Lokhanja rock paintings, Mukha falls, Eco Valley and Blackbuck Valley, are protected, and deterioration is being readdressed.

B. Management Weaknesses

1. Threats and values have been generally identified but not systematically assessed and monitored. Most of the threats have been enumerated in the current management plan, but their adverse effects on the PA have not been properly assessed. Recently, threats from Naxalism in certain areas of the sanctuary have increased.
2. The site has extensive human and biotic interference. There is intense human and biotic pressure on the PA. There are 36 revenue villages within the periphery of the PA and 102 villages within 5 km from the boundary. There are around 27,000 cattle owned by people living in the periphery of the PA and over 50,000 in the immediate vicinity of the PA. The human population is over 35,000, mostly tribals depending on forest resources. There is heavy grazing by cattle, and removal of firewood and other forest produce is substantial.
3. The site has been identified correctly but not categorized properly. Although the delineation of the boundary of the sanctuary gives it a long and linear shape, it covers the best forested tracts of the region. Three mini core zones have been identified in the management plan, but they are not being managed as core zones due to heavy biotic pressure. Apart from the mini core zones, a buffer zone, a tourism zone and eco-development zones have also been identified, but these are not being managed according to the provisions of the management plan.
4. The site has a management plan for 10 years prepared in 2000–2001 but management plan is not comprehensive.
5. Very little or no opportunity has been given to stakeholders to participate in planning.
6. A limited number of planning and monitoring programmes are in place for habitat restoration. Only pasture development and afforestation programmes are undertaken, but due to heavy biotic pressure and because of low rainfall, the success is poor.
7. Due to a large number of villages inside and in the immediate vicinity of the PA, there is a rampant human–wildlife conflict in the form of crop damage, injury and death of humans by sloth bears, cattle killing by leopards, etc. While there is no proactive mitigation strategy in place, few attempts have been made to compensate cases of human killing/injury.
8. Fund allocation for management of priority actions is not according to the annual plan of operation. Except for the salary and a few other items, no funds have been provided by the state government for management of priority actions.
9. No resources have been provided by NGOs. On the contrary, of late, a couple of NGOs have raised the issue of forest rights in the sanctuary and other adjoining forests. A total of 594 beneficiaries were thus identified within the sanctuary and a total extent of 200 ha of forests diverted.
10. None of the officers and staff members are trained in any kind of wildlife management. The wildlife guards do not have formal training even as Forest Guards.
11. The data available for common species and the observations at the site show that these species are likely to be able to sustain the natural biodiversity, but information is not available on most other rare species. The tiger is already extinct. Due to degradation, exotic weeds such as lantana are spreading, threatening the native plant diversity.

C. Actionable Points

1. The current plan will need systematic updating with area-specific management prescriptions based on scientific information.
2. The extensive human and biotic interference need to be minimised immediately by effective public participation.
3. The site needs proper categorization into zones.
4. There is great potential for integrating the PA into a wider ecological network as there are large forest areas of U.P. and M.P. in the immediate vicinity, including two wildlife sanctuaries of M.P., but there is little or no coordination among the various forest divisions even within the state.
5. NGOs' contributions are needed for PA management.
6. Adequate funds and resources should be released in time. More funds are needed for maintenance of the infrastructure and assets, especially the wireless system, firearms and vehicles.
7. The human and financial resources are insufficient for most tasks. Even the sanctioned strength of the frontline staff is not in position. In view of the ecological and historical importance of the PA, the fund allocation by the Government of India needs to be enhanced immediately.
8. Frontline staff members need to be trained for PA management.

- 9. Most of the local communities are resource dependent and sincere efforts will be needed to address the livelihood issues of such a large human population. The PA management is not able to pool different livelihood improvement programmes of different departments in the target villages.
- 10. Systematic evaluation and routine reporting of biodiversity trends need to be done on a priority basis. The cause of the decline of biodiversity inside the sanctuary needs to be determined.
- 11. The adjacent communities should be involved for effective PA management.
- 12. Little or no information on PA management publicly available. The brochure of the PA is brief and needs to be updated. Separate brochures need to be developed for historical sites such as the fossil park and other sites of importance.
- 13. The visitor facilities and services need to be improved. Detailed information on important sites such as Salkhan Fossil Park, Black buck Valley, the Lekhania rock paintings, Mukha falls and Eco Valley needs to be provided as these are frequented by visitors.
- 14. From the available information it is difficult to ascertain the trend, but the tiger has vanished, and the status of the chinkara, wolf, caracal, pangolin, etc. needs to be ascertained through good research. In the case of plants there is absolutely no information to assess the population.

Sohagi Barwa Wildlife Sanctuary, Uttar Pradesh Evaluation Year, 2012-2013

A. Management Strengths

- 1. The protected area (PA) has connectivity with Valmiki Tiger Reserve, in Bihar, and with *tarai* forests of Nepal (via Chitwan National Park) and thus is part of an important trans-national landscape. It spreads over an area of 428.20 km², with seven forest ranges in North Gorakhpur Forest Division.
- 2. Badi Gandak, Choti Gandak, Pyas, Rohin, etc. are important rivers flowing through this wildlife sanctuary (WLS). Hence the PA plays an important role in maintaining the hydrological system of the region.
- 3. The PA represents the North Indian Moist Sal, Deciduous forest type and supports the finest sal forests/grasslands and last remnant areas of Cane Forest wetlands in the country. It also supports the unique faunal species of such forest types (occasionally, rhinoceroses visit some of the riverine grasslands near the sanctuary).

B. Management Weaknesses

- 1. There are heavy biotic pressures, around 300 villages situated within and around the PA. There are also several Tangiya communities, with the total extent of their habitations being 1882 ha.
- 2. Protection work is very difficult as the WLS encompasses several fragments of forests with intervening human habitations and agriculture fields (one of these stretches is more than 50 km wide), as a result of which the boundary is long. Encountering a high level of political influence when handling illegal activities is the norm.
- 3. Grazing by livestock, removal of biomass for fuel and fodder, trespassing and human-wildlife conflicts (especially crop damage) are the prominent threats to the PA values. Threats posed to the habitat by grazing, illicit felling, poaching of crocodiles, deer, turtles, wild boars, etc. are serious concerns.
- 4. There are no visitor service or interpretation facilities.
- 5. Due to the limited availability of funds and inadequate coordination and cooperation with the local community, the efforts made to control or compensate for the damage are inadequate.
- 6. A limited number of habitat restoration programmes are being planned and executed.
- 7. The management plan has not been prepared with any significant participation of the local community.

C. Actionable Points

1. Critical wildlife habitats within the PA and eco-sensitive zones around the sanctuary need to be delineated and notified.
2. There is scope for reintroduction of some rare, endangered or threatened animal and plant species. Regulation of livestock grazing is prescribed.
3. Innovative habitat improvement schemes need to be prepared for sal forests and riverine cane. Pilot work must be carried out. Estimation of populations using rigorous scientific methods needs to be carried out and follow-up action taken.
4. A sanctuary advisory committee needs to be constituted (this is a statutory requirement). Local initiatives in which NGOs are actively involved in wildlife conservation or natural resource management-related works must be promoted/ encouraged.
5. Wetland and grassland management-related training opportunities need to be provided to the frontline staff and other key forest staff members.
6. Eco-development committees should be revived/ extended for effective interface between conservation and rural livelihoods.
7. A nature interpretation centre needs to be created, and staff members need to be trained in outreach and interpretation work. The wooden bridges that have been built across small streams need regular maintenance.

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Govind Pashu Vihar Wildlife Sanctuary,
Uttarakhand,
Evaluation Year, 2006-2009

A. Management Strengths

1. The site has a comprehensive management plan.
2. The threats have been documented well and assessed.
3. Most of the values have been systematically identified, assessed and monitored.
4. Habitat restoration programmes are generally well planned and monitored.
5. The site has a comprehensive protection strategy.
6. The performance management of the available staff is linked to achievement of management objectives.
7. A complaint handling system is operational.
8. Few livelihood issues are addressed by the management of the protected area (PA).
9. All the visitor services and facilities accord with the relevant PA category and most of them enhance the values of the PA. Generally, all the expectations of visitors are met.
10. The populations of some threatened/endangered species are increasing. Most of the others are stable.

B. Management Weaknesses

1. The site has extensive human and biotic interference. Mitigation of human-wildlife conflicts has not been effective. The site experiences intense grazing pressure from May to September from nearly 80,000 sheep and goats, from not only the 42 villages falling in the buffer area of this PA but also from the far-off Mori and Sandra aras. Gujjar buffalo herds from Rajaji National Park/Dehradun Forest Division and even from Shivalik Forest Division, of U.P., also migrate to this site during this period. There are nearly fifty *Gujjar Deras* all over the PA. Extraction of medicinal plants, grazing by local cattle and collection of fuelwood and timber by the local people are also significant.
2. The current management plan of the site is the first one, and it has not been revised or updated so far.
3. Except for the eco-development and tourism activities, there is little participation of stakeholders in planning.
4. Though long-range and short-range patrolling has been planned recently as an anti-poaching strategy, this

strategy is weak due to a lack of sufficient manpower and training in mountaineering and other high-attitude training. There is no strategy to monitor the activities of shepherds and Gujjars who visit the interior parts of the PA and roam freely from May to September.

- 5. The site has not been integrated into the wider network/landscape.
- 6. There has been great inconsistency in the availability of funds from the Government of India (GoI) and the state government.
- 7. No support is available from NGOs for the management of the site.
- 8. The resources, both human and financial, are inadequate considering the vast area, difficult geographical terrain, tough climatic conditions, number of villages requiring eco-development, presence of a large number of rare/endangered species of plants and animals and high intensity of biotic pressure.
- 9. There are very few trained officers and frontline staff at the site.
- 10. A complaint handling system is operational, but it is not responsive to individual issues, and limited follow-up is provided.
- 11. There is little or no systematic evaluation or routine reporting of management-related trends.

C. Actionable Points

- 1. The values have been documented well and assessed, but the monitoring needs a lot of improvement.
- 2. The final notification of the national park has not yet been issued although an intention notification was issued in 1990. Govind Wildlife Sanctuary (WLS), out of which Govind National Park (NP) has been carved out, was notified in 1955, but due to Supreme Court judgements, rights of timber and other forest produce have been stopped. But there is no alternative source to meet these demands, and as a result there is a constant conflict. A proposal to re-delineate the boundaries of the WLS and part of the NP was sent to the GoI, but it was turned down. The antagonism of the local people continues, due to which the final notification is not coming.
- 3. The high biotic pressure needs to be reduced by notification of the site as a national park.
- 4. There is a combined management plan for Govind NP and WLS, which was prepared in 1999-2000 and was operative till 2008-2009. This is the first management plan, and it needs an interim review and updating at once.
- 5. Stakeholder participation is needed for effective management of the site.
- 6. There is hardly any integration into the wider ecological network, which exists in the neighbouring Tons Forest Division and Shimla Wildlife Division of H.P. Some preliminary discussions were held between the WLW and the DFO of Shimla Wildlife Division recently. These need to be taken to a logical conclusion.
- 7. Resources need to be allocated and funds released in a timely manner.
- 8. Steps need to be taken so that there is collaboration with NGOs for effective PA management.
- 9. The site needs trained manpower resources for competent management.
- 10. Systematic evaluation and routine reporting of biodiversity trends are needed on a priority basis.

Rajaji National Park, Uttarakhand,
Evaluation Year, 2006-2009

A. Management Strengths

- 1. All values have been systematically identified, assessed and monitored.
- 2. All threats have been systematically identified and assessed.
- 3. The site has a comprehensive science-based management plan prepared through a participatory process.
- 4. The management plan has been routinely and systematically updated.
- 5. The site has a comprehensive protection strategy.
- 6. A coordinated system logs and responds effectively to most complaints.

7. The management plan is comprehensive and is available to the public on demand. A good guidebook has been published recently. It provides good information for visitors. Folders with maps and some other literature are available to the public.
8. Management-related trends are evaluated systematically and reporting is routinely carried out.
9. Most of the biological communities are likely to be able to sustain the native biodiversity.
10. The expectations of most visitors are met.
11. A planned approach to management is being instituted, and a deterioration of assets is being redressed.

B. Management Weaknesses

1. The site has some human and biotic interference. The site has suffered immensely due to the presence of a large number of Gujjars with large herds of buffalo and cattle. Over-logging of certain species of tree by them has resulted in a large-scale dying out of these species. Theft of baib grass, presence of Tongya villages, grazing by domestic cattle in certain areas and illicit felling of trees are also rampant. Fires are also frequent.
2. The site safeguards a few threatened biodiversity values.
3. Stakeholders participate in some planning processes.
4. There are a limited number of planning and monitoring programmes in place for habitat restoration.
5. There are a limited number of planning and monitoring programmes in place for reintroduction programmes.
6. The site is not integrated into the wider network/ landscape.
7. Resource allocation is ad hoc, and funds are never released in time.
8. NGOs make some contributions to the management of the site, but opportunities for collaboration have not been systematically explored.
9. No livelihood issues are addressed by the management of the protected area (PA).
10. The populations of threatened/endangered species are declining.
11. The neighbours/adjacent communities are hostile.

C. Actionable Points

1. The human and biotic interference needs to be reduced by managing the large number of Gujjars.
2. Many more planning and monitoring programmes, as well as reintroduction programmes, are needed for habitat restoration.
3. Adequate resources need to be allocated on time.
4. The contributions of NGOs to the management of the PA should be improved.
5. Livelihood issues should be addressed by developing community participation for effective long-term management of the site.
6. Immediate actions are required to determine the cause of the decline in the populations of threatened/endangered species.
7. The adjacent communities should be involved in the management of the PA.

Nanda Devi National Park, Uttarakhand,
Evaluation Year, 2009-2010

A. Management Strengths

1. All the threats and values have been systematically monitored and assessed.
2. The site has little human and biotic interference. The only biotic pressure is from the mountaineers who manage to get entry in the name of research. The entire park is a part of the core zone of Nanda Devi Biosphere Reserve (NDBR) and is managed as such. The only activity is trekking up to Debrugata (9 km inside the park), but no camping is allowed inside the national park.
3. The site has been identified correctly and systematically categorized with proper zonation plans.

4. The site has a comprehensive, science-based management plan prepared through a participatory process for 10 years (from 2009–2010 to 2018–2019) and has been updated in a timely manner.
5. The site safeguards a large number of threatened biodiversity values. The Nanda Devi basin has rare animals and plants of the high Himalaya, including mammals such as the snow leopard, musk deer, Himalayan tahr, blue sheep, brown bear and red fox, birds such as the monal pheasant, koklas, chir pheasant, snow partridge, steppe eagle and griffon vulture and rare, endangered species of medicinal and aromatic plants.
6. With the NDNP being a part of the NDBR, the participation of stakeholders is very good. The eco-development and eco-tourism activities in the buffer area of the park are carried out in a planned manner, with the involvement of the village communities and guides.
7. Habitat restoration programmes are generally well planned and monitored. Due to the geographical conditions and harsh climate, no habitat restoration programmes are required. Major portion of the park consists of snowy peaks, glaciers, rocky slopes, moraines and grasslands (bugyals), and only a small portion is woody. Habitat monitoring is being done at intervals of 5–10 years by study teams. Habitat restoration efforts that were undertaken include restoration of medicinal plants, restoration of ringal (bamboo) and creation of water holes in the buffer area.
8. The site has excellent protection due to the inaccessibility of most parts of the protected area (PA). There is no anti poaching camp inside the park.
9. The site is fully integrated with the wider network/landscape. It is well connected with similar habitats all along the north-eastern and north-west limits. Its proximity and linkage with the Valley of Flower National Park, which is designated as another world heritage site by UNESCO, adds its conservation values.
10. The available resources such as firearms, vehicles, motorcycles, weapons, wireless equipment, GPS, mobile phones, cameras and binoculars are adequate. The buildings are also adequate.
11. Resources such as GPS, cameras and binoculars have been provided under the World Heritage programme by UNESCO. Training on legal matters was once provided by the Wildlife Trust of India. The involvement of local NGOs in awareness-raising programmes is common.
12. The financial resources, especially from the NDBR and catchment area treatment (CAT) plans, are sufficient.
13. Five foresters and 17 forest guards of NDBR have got short-term refresher training through courses of 1–2 weeks' duration at the Wildlife Training Institute at Kalagarh (Uttarakhand). At local-level training programmes/workshops for the frontline staff, and men and women from the village communities are organized under NDBR and CAT plans for capacity building, equity issues, micro planning, self-help groups, etc.
14. There is systematic participation of the public in most aspects of PA management. Due to the extensive work being carried out under the NDBR and CAT plans for communities in the buffer area, the involvement of the public is very good.
15. Complaint handling is responsive, especially after the coming of RTI. Information sought by the public under RTI is made available in time. Several RTI queries were made by local people regarding the micro planning of CAT programmes.
16. Livelihood issues of communities, especially women, are being addressed effectively under the NDBR and CAT plans. A carding plant was established at Lata village under NDBR and handed over to Mahila Mangal Dal for further management. Carding of wool and carpet weaving are very common activities with the women of scheduled tribes in this area.
17. The management plan is a public document, but it is not available in the district library. Due to frequent interactions with people, a lot of research material on NDNP is also available in research institutions such as WII, ZSI, BSI and HNB Garhwal University, Srinagar. A good amount of information is also available in the publicity material of the PA. The information sought under RTI is also made available easily. Much information is available online also.
18. All the visitor services and facilities accord with the relevant PA category, and most of these enhance the values of the PA.
19. A systematic inventory of infrastructure/assets is maintained, and adequate funds are available for maintaining these.
20. The reports of the expert committees that visited the national park in 1993 and 2003 show that there are increases in the numbers of endangered/threatened species.
21. Due to the very low levels of biotic interference, there are a mix of ages and wide spacing among the biological

communities wherever possible, considering the harshness of the habitat. The undisturbed wilderness of the Nanda Devi basin is known to support the native biodiversity.

22. Due to a ban on all biotic activities for almost three decades, most threats have been ended.
23. The expectations of the few visitors who trek up to Debrugeta and others visiting the buffer area of the park are generally met.
24. Till 2002–2003, there were frequent agitations and opposition to NDNP and NDBR among the adjacent communities, but the efforts of Ms Jyotsana Sitling, Director, NDBR and Mr. A.K. Banerjee, Director NDNP turned the tables in favour of both, and the neighbouring communities became very supportive.
25. A planned approach to management is being instituted, and a deterioration of assets is being significantly redressed. Nanda Devi, the second highest peak in India, is revered as the goddess Nanda Devi, the reigning deity of Uttarakhand. The sanctum sanctorum is in NDNP and is held in great reverence throughout the state.

B. Management Weaknesses

1. Due to the harsh climatic conditions inside the park during winter, black bears, wild boar and leopards take shelter in the buffer areas, especially in forest panchayats, and damage crops and lift cattle in the surrounding villages. The damage to fruit orchards and potato fields is substantial.
2. Few, if any, personnel have been explicitly allocated for PA management. The frontline staffs of NDNP have to carry out the duties associated with NDBR and the CAT projects, apart from the protection and management duties of NDNP and Valley of Flowers National Park.
3. The available resources such as firearms, vehicles, motorcycles, weapons, wireless sets, GPS, mobile phones, cameras and binoculars are adequate. The buildings are also adequate, but the equipment used for long distance patrolling in high-altitude areas needs to be replaced regularly. Energy-providing food items need to be provided during patrolling, but these are not provided.
4. The resource allocation is mostly for buffer area management, eco development, etc. Allocation of funds and resources for management inside the national park are inadequate.
5. The human resources available, in terms of the frontline staff, are considered inadequate by the PA managers. There is an overall shortage of one ACF, three Forest Rangers, 59 Forest Guards, three Foresters and three daily wage employees.
6. No officer has undergone a diploma or certificate course at WII.
7. Due to the heavy pressure of work under the NDBR and CAT plans, the staffs, especially officers, are mostly busy with the achievement of the targets under these. The frontline staffs are also overburdened with these in the buffer area and get little time to concentrate on aspects of management of NDNP.
8. The services available for the small number of visitors are satisfactory and are in the form of small interpretation centres at Joshimath and Reni and publicity material. It was, however, strongly felt that at least two good-quality interpretation centres need to be developed.
9. No routine census operations are possible inside the national park because most of the terrain is inaccessible. Assessment of the flora and fauna has, however, been performed by expert committees at intervals of 5 to 10 years, and the reports are available.
10. There are still reports of stray incidents of poaching by local people and attempts by a few influential people to get permits in the name of research and indulge in unlawful activities, such as a few members of a team sponsored by IMF and permitted by MoEF in 2001.

C. Actionable Points

1. Damage caused to fruit orchards and potato fields by black bears, wild boar and leopards needs immediate resolution by mitigation measures.
2. Equipment used for long-distance patrolling in high-altitude areas and energy-providing food items required during patrolling need to be allocated immediately.
3. Adequate resources need to be allocated in time for the management of the PA, especially for core zone activities.
4. Human resources, in terms of frontline staff (including one ACF, three Forest Rangers, 59 Forest Guards, three Foresters and three daily wage employees), need to be employed as soon as possible.
5. The site needs trained manpower, especially personnel who have undergone certificate and diploma programmes offered by WII, for effective PA management.

- 6. There is a need to establish an elaborate interpretation cum extension centre somewhere on the main road to Mana or Malari under the biosphere programme and the UNESCO-aided World Heritage programme. Both the Nanda Devi and Valley of Flowers national parks are World Heritage sites. The information centre set up at Reni under World Heritage programme is very sketchy. The information centre at Joshimath also needs considerable improvement and updating.
- 7. A routine census of the flora and fauna of the park needs to be conducted.

Kedarnath Musk Deer Sanctuary, Uttarakhand Evaluation Year, 2012-2013

A. Management Strengths

- 1. This high-altitude Himalayan region is geologically fragile. It is a part of a major river catchment that receives high rainfall and thus needs vegetative cover for soil and moisture conservation.
- 2. The region has an interesting mosaic of habitats. The key faunal species require large habitats to cover their local migration needs, and thus a number of small- or medium-sized protected areas (Pas) will provide much needed continuity if care is taken to protect corridors in between. The location is thus appropriate
- 3. The site has a very long history of conservation-centric forest resource management and provides scope for managing the fragile ecosystem, with the active involvement of Van Panchayats.
- 4. The PA attracts a large number of Hindu pilgrims. It supports extensive religious tourism activity as it encompasses the locations of the "Panch Kedars", thereby providing an opportunity for sensitization/education on biodiversity conservation.
- 5. The formation of a medicinal plant conservation area (MPCA), with the active involvement of the local people and emphasis on the conservation of arboreal species, at Kanchula, is an excellent initiative.
- 6. The site has a comprehensive management plan that also prescribes control forms that are expected to provide a database for assessing the impacts of the management practices followed.

B. Management Weaknesses

- 1. The process of settlement of rights, has been protracted/ delayed, and the opportunity to meaningfully engage Van Panchyats and providing services to visitors in active partnership with them has not been explored properly, resulting in almost an abdication of the responsibility to implement the provisions under the Wildlife (Protection) Act, 1972.
- 2. The carrying capacity of frequently visited sites/routes passing through the PA has not been worked out to provide science-based, reliable data to develop a strategy for regulating the passage of visitors, including by aerial routes, to minimize adverse impacts.
- 3. Long-term conservation efforts related to the key species, the musk deer, need to be more focused and to be maintained continuously.

C. Actionable Points

- 1. The process of settlement should be given the highest priority and a "middle path" explored to ensure an active and participatory role of Van Panchayats (on the lines of joint PA management through EDCs).
- 2. An environmental impact assessment needs to be conducted to study the footprint of tourism-related activities and the carrying capacity worked out. If deemed necessary, the number of horses/helicopter trips should be regulated or curbed. Their movements during the day should be restricted (on the lines of the restrictions in the case of Gangotree National Park).
- 3. The statutory requirements of appointment of Honorary Wardens and formation of a PA advisory committee need to be fulfilled for enhancement of local participation in planning and implementation of works as also for transparency.

Gangotri National Park, Uttrarakhand Evaluation Year, 2012-2013

A. Management Strengths

- 1. This high-altitude Himalayan region is geologically fragile. It is a part of the Bhageerathree river catchment, upstream of Tehri dam, the lifeline of the northern power grid.
- 2. As the area receives very high rainfall and snow, it needs protection for soil and moisture conservation. Hence it needs undisturbed vegetative cover.
- 3. From the viewpoint of national defence too, it is a critical area. The location of the PA is thus advantageous.
- 4. The region has an interesting mosaic of habitats. The key faunal species require large habitats for their local migration needs. Thus a number of small- or medium-sized PAs will provide much needed continuity if care is taken to protect corridors in between.
- 5. In view of the peculiar geology/geomorphology and its importance in a climate change scenario, scientific inputs on the impacts on the alpine zone (retreating glaciers, etc.) have been taken into account to regulate the impacts of visitors on the fragile ecosystem. The regulatory mechanism for visiting Gomukh is a trend setter.

B. Management Weaknesses

- 1. The sanctioned staff strength is meagre, and even so there are large numbers of vacancies. The staffs are not trained to meet the challenges of the difficult terrain. The resources available to work under the very adverse conditions are inadequate.
- 2. The religious tourism to Gangotree, Gomukh, etc. has almost eclipsed the biodiversity conservation values of the site. The opportunity to expose visitors to the unique ecological attributes has almost been lost.
- 3. There is almost no focus on the key managerial issues, and thus a comprehensive science-based PA management plan document is essential. Rationalization of the PA boundaries and more manned gates to regulate traffic to sites other [than Gomukh route] are required.
- 4. Additional field-level posts are required. Winter patrolling by teams is needed. Camping facilities and logistic support are lacking. The participation of the local community in the planning and implementation of works and transparency are sub-optimal.
- 5. Adventure tourism could be introduced through mountaineering that is dovetailed with conservation education. The local population in the surrounding villages and the field staff the need to be oriented towards this effort.

C. Actionable Points

- 1. A duly approved comprehensive, science-based, management plan that includes the views of stakeholders needs to be developed as soon as possible.
- 2. The habitat improvement practices in vogue need to be reviewed carefully. The commitments under the FC Act for clearances for road construction need to be followed up.
- 3. Measures such as the formation of a PA advisory committee and appointment of Honorary Wardens, which are statutory requirements, need be put in place.
- 4. Observations and remarks in the visitor book at the entrance gate need to be followed up.







SOUTHERN REGION



SOUTHERN REGION

3.2

Southern Region

S. No.	State	National Parks and Wildlife Sanctuaries	Evaluation Year
1.	Andaman & Nicobar Islands	Mahatma Gandhi National Park	2006-2009
2.	Andaman & Nicobar Islands	Interview Islands Wildlife Sanctuary	2006-2009
3.	Andaman & Nicobar Islands	Cuthbert's Bay Wildlife Sanctuary	2009-2010
4.	Andhra Pradesh	Papikonda Wildlife Sanctuary	2006-2009
5.	Andhra Pradesh	Gundla Brahmeswaram Wildlife Sanctuary	2006-2009
6.	Andhra Pradesh	Shri Venkateshwara National Park	2009-2010
7.	Andhra Pradesh	Coringa Wildlife Sanctuary	2012-2013
8.	Andhra Pradesh	Kolleru Wildlife Sanctuary	2012-2013
9.	Goa	Bhagwan Mahaveer Wildlife Sanctuary	2012-2013
10.	Goa	Bondla Wildlife Sanctuary	2012-2013
11.	Goa	Mollem National Park	2006-2009
12.	Goa	Netravali Wildlife Sanctuary	2009-2010
13.	Karnataka	Dandeli Wildlife Sanctuary	2006-2009
14.	Karnataka	Mookambika National Park	2006-2009
15.	Karnataka	Biligiri Rangaswamy Temple Wildlife Sanctuary	2009-2010
16.	Karnataka	Kudremukh National Park	2012-2013
17.	Kerala	Wayanad Wildlife Sanctuary	2006-2009
18.	Kerala	Eravikulam National Park	2006-2009
19.	Kerala	Shendurney Wildlife Sanctuary	2009-2010
20.	Kerala	Silent Valley National Park	2012-2013

21.	Kerala	Peppara Wildlife Sanctuary	2012-2013
22.	Pondicherry	Oussudu Wildlife Sanctuary	2012-2013
23.	Tamil Nadu	Gulf of Mannar National Park	2006-2009
24.	Tamil Nadu	Mudumalai National Park	2006-2009
25.	Tamil Nadu	Mukurthi National Park	2006-2009
26.	Tamil Nadu	Satyamangalam Wildlife Sanctuary	2009-2010
27.	Tamil Nadu	Srivilliputhur Grizzled Squirrel Wildlife Sanctuary	2012-2013
28.	Tamil Nadu	Point Calimere Wildlife Sanctuary	2012-2013

1

Mahatma Gandhi National Park, Andaman & Nicobar Islands Evaluation Year, 2006-2009

A. Management Strengths

1. The site safeguards all the threatened biodiversity values, correctly identified and systematically categorized with zonation plans.
2. The site has a comprehensive management plan.
3. The site has a comprehensive and effective protection strategy to safeguard the conservation values.
4. The site is quite well integrated into the landscape and seascapes with networking of adjoining Crocodile Sanctuary and Cinque (Five) Island Sanctuary.
5. A coordinated system logs and responds effectively to most of the complaints.
6. There is a systematic inventory of infrastructure and assets with maintenance schedule and adequate funds.
7. Most of the threatened and endangered species populations are stable or increasing and give space to native biodiversity.
8. Most of the threats are abated and there is good support from the local communities.
9. The cultural heritage assets are systematically protected.

B. Management Weaknesses

1. The updation and revision of the management plan is adhoc.
2. Stakeholder participation in the management planning process is weak.
3. The programmes for habitat restoration are not systematic and these entirely depend upon the availability of resources.
4. Reintroduction programmes are also poorly planned and adhoc.
5. The staffs working in this area requires different capacities and skills. Few staff are trained and posted in the area. However, most of them require training in related fields like Marine biology, marine biodiversity, coastal zone management, etc.
6. The participation of the public is opportunistic and as such not very systematic.
7. Information about the park available to public is inadequate and weak.
8. The evaluation of management related trends is not systematic and it is routinely done.

C. Actionable Points

1. The staff and officer need to be trained periodically and the training programmes should cover subjects like marine biology, marine biodiversity, coastal zone management, intelligence gathering and sharing with other agencies, skills for monitoring of marine biodiversity and other related issues.

2. The management plan need to be updated and improved periodically as per the information generated through research and regular monitoring.
3. Collaboration with other agencies, research institutions and NGOs need to be improved.
4. Opportunities of public participation during preparation of management plan and subsequent implementation should be systematic and strong.
5. The availability of information about park in public domain need to be improved.
6. The system of regular assessment of management related trends need to be strengthened.

2

Interview Island Wildlife Sanctuary, Andaman & Nicobar Islands Evaluation Year, 2006–2009

A. Management Strengths

1. The site safeguards large number of threatened biodiversity values and is well integrated into wider ecological network covering adjoining Protected Areas.
2. The Protections strategy is comprehensive and very effective due to continuous presence of coast guard and Navy patrolling in this area.
3. There is a good system of handling complaints and suggestions of public.
4. Due to effective protection strategy, the populations of all threatened/endangered species are either increasing or stable. The population of nest Swiftlet, an indicator species is also increasing.
5. In general, there is a good support from the local communities.

B. Management Weaknesses

1. The site has been identified correctly but not systematically categorised into different zone.
2. Due to absence of human settlements there is possibility of entry of poachers in some of the islands.
3. Because of lack of scientific information, the habitat restoration and monitoring programmes are nearly lacking.
4. Very few trained officers and frontline staff have been posted at the site.

C. Actionable Points

1. Systematic habitat restoration programme need to be planned with a sound foundation of scientific information through research and continuous monitoring. This will require good collaboration with research institutions and some relevant NGOs.
2. The management plan should clearly define the zonation with appropriate strategies for each zone.
3. The possible impacts of the feral elephants on the native biodiversity have to be monitored.
4. The staffs and the officers may be provided required trainings to manage the different issues of this protected area.

Cuthbert's Bay Wildlife Sanctuary, Andaman & Nicobar Islands Evaluation Year, 2009-2010.

A. Management Strengths

1. The site is a breeding place of marine turtles and good site for biodiversity, tourism and aesthetics and is well integrated into the adjoining landscape. It safeguards migratory turtles, birds and other animals found in the area.
2. The site has a detailed and comprehensive approved management plan since 2008, and is updated routinely and systematically.
3. Habitat restoration programmes are generally well planned and monitored. Regular cleaning of the beach and removal of small sand cliffs formed due to tidal effect are carried out. One row of casuarinas trees has been removed to restore the nesting area and free it from leaf litter.
4. The site has a comprehensive and very effective protection strategy with adequate deployment of manpower and resources.
5. There is an annual performance assessment review (APAR).
6. Systematic data collection is being carried out during the breeding season of the turtles and these are being submitted to the Chief Wildlife Warden. Fourteen years data on the turtle breeding are available and other parameters are not being monitored.
7. A systematic inventory of assets provides the basis for the maintenance schedule and adequate funds are made available.
8. Populations of different species particularly turtles are either stable or increasing. Biological communities are able to sustain local native biodiversity.
9. Most of the threats (in the form of stray dogs, sand mining, illegal collection of eggs) are being controlled by forest watchers/guards during the breeding season.
10. There is good support of neighbours for PA management and protection.

B. Management Weaknesses

1. Boundary demarcation has not been completed and also there is no systematic zonation carried for the area.
2. Resource allocation is ad hoc, and funds are never released in time. Central funds are usually received late (October-January), which gives limited time for implementation of work.
3. The officers and staffs are not trained in wildlife management issues. Recently one Range Officer was deputed to visit other PAs on the mainland for creating awareness.
4. Active participation of public is wanting, however sometime the opinions of stakeholder are taken while handling management issues.
5. No livelihood issues are addressed by the PA management.

C. Actionable Points

1. The boundary demarcation for the site needs to be completed immediately and carefully worked out zonation and zone plan should be put in place.
2. Allocation of resources and release of funds need to be on time for management of the PA.
3. The officers need training in wildlife management issues. Departmental-level awards and special incentives are desirable to motivate the staff.
4. The Andaman & Nicobar Islands administration is planning to relocate the 178 families living adjacent to the PA. Out of 178 families, 27 families are residing inside the sanctuary. A detailed demarcation of the boundary is required to know the exact number of families living inside the sanctuary.
5. Detailed studies are recommended to take a decision on the removal of *Ipomoea biloba*, which is growing all along the beach, for restoring the habitat.
6. More cameras and binoculars (night vision) are needed at the field staff level. Rain gauges and thermometers (for

measuring the soil temperature during the breeding season) are also advisable. A new wooden boat jetty is being planned at Betapur, which is the main approach to the sanctuary. Three staff quarters are also needed. One new speed boat will be ideal for transporting the staff and protection workers.

7. Ecodevelopment committees need to be established and strengthened in order to address the livelihood issues of local communities.
 8. A study of the avian communities in the PA is desirable.
 9. A separate website needs to be developed for each PA in Andaman & Nicobar Islands for providing information to the public.
- apikonda Wildlife Sanctuary, Andhra Pradesh, 2006–2009

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Papikonda Wildlife Sanctuary, Andhra Pradesh Evaluation Year, 2006–2009

A. Management Strengths

1. There is a management plan for the site however it needs to be updated and improved.
2. There is a reasonably effective system of complaints handling

B. Management Weaknesses

1. Values and threats have been generally identified but not systematically assessed and monitored. The sanctuary has access from three different routes because of its location in three districts and four forest divisions.
2. The site has been identified correctly but not systematically categorised. It safeguards only few threatened biodiversity values.
3. There is a management plan, but it is not comprehensive and it is not updated. Very few strategies of management for dealing with habitat are in place.
4. The protection strategy is weak and adhoc. Very few staffs are available for the protection of the area even though adequate staff strengths have been sanctioned. Training of the Staff is another area of concern. The resources and infrastructure for protection are also thin as compared to the difficulty of the terrain and emerging problems of extremism in some of the areas. The funding support is poor and the releases are the delayed.
5. The visitor services and facilities are almost non-existent. The expectations of visitors are generally not met. There are neither sightings of animals nor appropriate facilities for land-/river-based nature tourism.
6. There is some evaluation and reporting, but these are neither systematic nor routine.

C. Actionable Points

1. The values and threats need to be systematically monitored and assessed.
2. The site needs to be properly categorised into zones.
3. There is an urgent need to develop a science-based comprehensive management plan and to update it routinely.
4. Adequate protection strategies need to be planned and implemented with sufficient staff, infrastructure, communication facilities, equipments, incentives, timely & sufficient funds and above all training of staff in different aspects of wildlife management. Efforts should be made to check the early spread of extremist movements in the area.
5. Strategies for habitat improvement and restorations need to be carefully planned and implemented with required baseline scientific information through research and monitoring.
6. A well developed system for monitoring the management related trend need to be put in place on a priority basis.
7. The visitor facilities need to be created and maintained along with supportive ecotourism, interpretation and education programmes as per the expectations of the tourists.

Gundla Brahmeswara Wildlife Sanctuary, Andhra Pradesh Evaluation Year, 2006-2009

A. Management Strengths

- 1. The site has been planned in a manner that it covers a large number of threatened biodiversity values and is integrated fairly into the landscape with network of adjoining PAs. This sanctuary has been proposed as a satellite core for the Project Tiger area in Nagarjunasagar Srisailem Tiger Reserve (NSTR) and is well integrated with the wider network/landscape connected to NSTR, in the north, and Lankamalleswara (Jerdon's Courser Sanctuary) and Sri Venkateswara National Park, in the south, through the excellent corridors of the reserve forests of Palakonda and Veligondas.
- 2. This area had been infested with extremists and recently it has come under the control of the park management.

B. Management Weaknesses

- 1. The site had a number of problems of human and biotic interferences including extremist problems.
- 2. The planning is poor and there are hardly any monitoring and habitat restoration programmes.
- 3. Protection strategy is extremely vulnerable. Resources are poorly allocated and that also are not received in time. Infrastructure and equipments is in bad shape due to extremist problems in the past.
- 4. Very few trained officers and frontline staff have been posted at the site.
- 5. There is practically no public participation in the management of the PA.
- 6. The visitor facilities are non-existent due to the presence of extremists for one and half decades in the past hampered the development of visitor services at the site.
- 7. There is some evaluation and reporting of management-related trends, but these are neither systematic nor routine.
- 8. Threats to the site have not reduced but have grown.

C. Actionable Points

- 1. There is some human and biotic interference, which needs to be reduced through community participation for management of the site.
- 2. Habitat restoration is important for enhancing the long-term conservation prospects and management of the site.
- 3. The site needs an effective protection strategy with adequate human and financial resources, infrastructure and equipments. In fact many of the basic needs of protection have to be rebuilt.
- 4. The staffs need to be provided adequate training in wildlife management.
- 5. The participation of the public needs to be augmented for long-term management of the site and ending threats.
- 6. Visitor management facilities and services need to be created and made functional at the earliest.
- 7. Systematic and routine reporting of management-related trends is needed on a priority basis.

6

Sri Venkateswara National Park, Andhra Pradesh Evaluation Year, 2009-2010

A. Management Strengths

1. The site safeguards large number of threatened biodiversity values and is well integrated into the wider landscape.
2. The site has a comprehensive and very effective protection strategy.
3. Adequate resources are explicitly allocated for achievement of specific management objectives.
4. A large number of trained officers and frontline staffs are posted at the site.
5. A systematic inventory provides the basis for the maintenance schedule and adequate funds are made available.
6. The populations of most of the threatened/endangered species are increasing, and most others are stable.
7. A planned approach to management is being instituted for cultural heritage assets and the deterioration of assets is being significantly redressed.

B. Management Weaknesses

1. The site has been identified correctly but not systematically categorised.
2. There is no process in place for reviewing and updating the management plan systematically.
3. There is opportunistic participation of the public in some aspects of PA management.
4. There is some evaluation and reporting, but these are neither systematic nor routine.

C. Actionable Points

1. The site needs proper categorisation into zones and the management plan need to be periodically updated.
2. The contributions of NGOs need to be explored for PA management.
3. The greater involvement of the public needs to be ensured for PA management.
4. Systematic and routine evaluations of the biodiversity are needed.

7

Coringa Wildlife Sanctuary, Andhra Pradesh Evaluation Year, 2012-2013

A. Management Strengths

1. There is an effective management plan.
2. Conservation values and threats have been identified effectively.
3. Integration of the protected area (PA) with the larger landscape level is planned through the UNDP-supported East Godavari River Estuarine Ecosystem (EGREE) project.
4. Twenty eco-development committees (EDCs) have been established.
5. There is a responsive system to handle and address complaints effectively.
6. Good research has been conducted in the past. The WII has identified gaps in research and has indicated priority areas.
7. EGREE has research on its mandate, including monitoring populations of birds, with a focus on threatened species.
8. There is an excellent boardwalk through a patch of mangroves and another one is being built around the old

lighthouse, which was built during the British time.

9. Threats are not allowed to escalate.

B. Management Weaknesses

1. The poor participation of stakeholders in planning processes.
2. The protection strategies in the plan are not specific.
3. The vacancies amount to 40% of the sanctioned strength.
4. There is only one old jeep for mobility on land and this has to be shared.
5. The POL and funds for running the jeep and boats are inadequate.
6. Hand-held wireless sets are in short supply.
7. One EDC is involved in tourism and five more are involved in other activities that are not very significant.
8. Funding from the central government is received late via the state release, usually in December-January.
9. The funding is inadequate.
10. Findings of past research have not been collated for action.
11. There is inadequate information about the PA in the public domain. This is available in the form of brochures and handbills only.
12. There is no interpretation centre.
13. The services of trained guides are lacking.
14. There is no proper and regular monitoring of threatened species.

C. Actionable Points

1. The term of the management plan ends this year and the new management plan (as part of the EGREE) needs to overcome the shortcomings.
2. There is a need to rework the staff strength realistically by ranks considering the ecosystem, protection aspects and needs for multiple roles.
3. The means of mobility and equipment support need to be augmented.
4. A new base camp with adequate personnel support is needed on Hope Island since it has nesting sites of Olive Ridley turtles. There are two other Islands that need to be managed.
5. Protection need to be focused on. Inadequate manpower and other support that has been identified as lacking need to be addressed effectively. At least one more check-post and barrier is needed to control smuggling of firewood and other produce.
6. Extra effort is needed to involve other EDCs. The existing schemes of other government departments and the areas of interest of some of the NGOs could take care of vocational training and development of skills, which would lead to assorted livelihoods. Health, education, sustainable fishing and improved farming practices are some of the avenues for the NGOs. Self-reliance would permit an EDC to raise corpus fund. Hopefully, under the EGREE, the EDCs will be made to function effectively via multiple livelihood pathways.
7. Steps need to be taken to secure early release of grants. The inadequacy of funding could be addressed to an extent by EGREE; however, efforts are needed to enhance the funding, especially since the PA has the largest patch of mangroves in the state.
8. Actionable components from the past research need to be collated and acted upon.
9. An informative well designed website is required.
10. The boardwalks need to be treated as self-guided trails with corresponding material and wayside exhibits.
11. Monitoring is most likely to gain strength under the EGREE, but depending on projects is not an approach of choice because once a project is over even regular and essential activities get-out, therefore an enduring system need to be in place.

Kolleru Wildlife Sanctuary, Andhra Pradesh Evaluation Year, 2012-2013

A. Management Strengths

1. Conservation values and threats have been effectively identified.
2. The Supreme Court judgment of 2006 has consolidated the area and set boundaries amidst intense protests and politics.
3. Critical areas of conservation have been identified.
4. Some excellent habitat restoration works, such as the creation of an artificial heronry at Atapaka, has been carried out.
5. There is a strong, responsive system for handling complaints.
6. The plan is backed by good research information.
7. Bird counts are conducted annually.
8. The removal of aquaculture pond is a great achievement and given the political obstacles, this could not have happened without the order of the Supreme Court.

B. Management Weaknesses

1. The management plan does not follow WII guidelines and so a rational flow is missing. The term of the plan is about to get over, but a process to revise it is not in sight.
2. The entire area is considered the core zone, but there are many villages and settlements in enclaves that are practicing the permitted traditional agriculture and fishing. Considering the severe opposition to the +5 contour boundaries, this appears to have been done much to stem further claims though this militates against the concept of a core.
3. The strategies lack focus and specific directions, especially protection.
4. There is no explicit list of the threatened biodiversity values.
5. There is no involvement of stakeholders in planning processes.
6. There are some good ideas about integrating the site into the larger landscape (e.g. areas under the +7 and +10 contours) but under the prevailing situation these are distant dreams.
7. Of 100 staff strengths, 32 positions are vacant.
8. Seventy positions annually need government orders for continuation.
9. More serious, the positions of the DFO and SDO and two out of six RFO positions are vacant and the entire sanctuary running under the temporary charge of retired knowledgeable person.
10. Only two jeeps are available and out of four motor boats, only one is operational.
11. There is significant shortage of residential facilities.
12. The funding is inadequate. Central funds are received usually in November–December.
13. There is no contribution of NGOs.
14. The trained staffs are lacking.
15. Livelihoods issues have not been addressed. There are 23 EDCs, but except for some, their involvement with tourism has progressed little.
16. Outreach involves only brochures, handbills and a few roadside boards.
17. There is no interpretation centre and no guide services or facilities such as drinking water and restrooms for visitors.
18. The maintenance schedule of assets is poor.
19. Although bird counts are conducted annually, threatened species are not monitored.
20. There is simmering discontent over the +5 contour boundaries. Hostile events are fomented from time to time.

C. Actionable Points

1. By reducing the extent of the core zone, tourism and habitat restoration zones could be carved out from the core zone.
2. The situation is too sensitive to offer voluntary relocation to villages at present.
3. A planning officer needs to be appointed to revise the management plan at the earliest with a strong focus on strategies to overcome gaps and weaknesses.
4. The WII guidelines need to be followed and threatened biodiversity values need to be spelled out in detail.
5. The participation of the local people could be started slowly for better and sustainable agriculture and fishing practices, education, health and drinking water through the existing schemes in the district plan.
6. There is a need to explore the possibilities of integration with the landscape. To begin with, few steps could be taken towards improved water use.
7. Concerted efforts are needed to fill all vacancies, with an accent on wildlife-trained personnel as available for various positions of responsibility. Due thoughts are needed on the 70 positions that need to be sanctioned annually.
8. Four more 4WD vehicles are needed. All four motor boats need to be made reliably operational. A further four non-motorised boats are also needed. These will provide the requisite mobility, especially for crucial protection.
9. Ways to augment the residential facilities need to be explored seriously.
10. This is a Ramsar site and needs to be supported with adequate funding. The available alternate sources need to be explored. Obstacles to the timely release of funds need to be addressed.
11. There needs to be a strong focus on training and this can be brought in phases. The PA is a Ramsar site and needs a well-designed website and an aggressive outreach strategy. There are many established examples to emulate. The material and design for an interpretation centre are needed. Guides can be trained from the local communities. It does not take much to develop basic visitor facilities.
12. A maintenance schedule of assets is a standard requirement. Once a regular DFO and SDO/s are in position, hopefully this will sort itself out.
13. It should not be difficult to focus on the threatened species during the annual counts. The known areas of bird congregations should also be focussed on.
14. A database needs to be set up.

9

Bhagwan Mahaveer Wildlife Sanctuary,
Goa
Evaluation Year, 2012-2013

A. Management Strengths

1. The national park (NP)/sanctuary is integrated into the wider network of the landscape, which has an area of 600 km², including the adjoining Madaii and Netravali sanctuaries.
2. Its biodiversity is very rich, and it has a large number of plant and animal species endemic to the Sahyadri Range. It also has diverse geological formations and a varying climate and hydrology.
3. There are 721 angiosperms and 20 pteridophytes in the checklist of plants.
4. There are no villages within the boundaries of the PAs.
5. The protection network is good. The numbers of vehicles, watch towers and base and mobile stations are sufficient, and so the incidence of forest offences is negligible. The forests are of the evergreen and semi-evergreen types, and so the occurrence of fires is minimal.

B. Management Weaknesses

1. The close proximity to human settlements and the pressures of grazing and firewood and NTFP collection pose a big problem.

2. A stretch of 15 km of the Vasco–Londa railway line, including three railway stations, lies within the sanctuary and NP. This causes disturbances.
3. Considering the importance of the landscape, the funding pattern is grossly inadequate.
4. The contribution of NGOs to the PA and its involvement with it are minimal, particularly in ecotourism and the interface with forest fringe communities.

C. Actionable Points

1. A checklist of the fauna should be included in the management plan.
2. The two villages in the NP, viz. Caranzol and Sonalium, which have one family and seven families, respectively, should be relocated outside the PA. This should not pose a problem, and it will result in a disturbance-free habitat.
3. Two subzones have been formed for day visitors and overnight visitors. But these need to be depicted on the maps for easy access and control.
4. Though all the staff positions have been filled up, the sanctioned strength of the field staff needs a revisit considering the increase in anthropogenic pressures.

Bondla Wildlife Sanctuary, Goa Evaluation Year, 2012-2013

A. Management Strengths

1. The site is integrated into the wider network of the landscape. It is contiguous with other PAs of Goa, Maharashtra and Karnataka, as a result of which its potential and importance are enhanced.
2. There is no human settlement inside the sanctuary, and the level of biotic interference is minimal.
3. The protection strategy is very effective. There are forest guards, trekkers and labourers on patrolling daily, and check posts are manned 24 hours a day even though the threats to the sanctuary are minimal, indicating the commitment of the staff.
4. The infrastructure available for tourists to stay overnight is sufficient. The Bondla Zoo, nearby, helps with providing nature education and raising conservation awareness.

B. Management Weaknesses

1. The very small area of the sanctuary makes it dependent on other adjoining forest areas for effective conservation measures.
2. The involvement of NGOs particularly in ecotourism and in developing the interface with forest fringe communities is minimal.

C. Actionable Points

1. Although the core and ecotourism zones have been clearly demarcated on the ground, they need to be shown on maps for the benefit of the staff and tourists.
2. Wildlife training should be provided for the subordinate staff in a phased manner.
3. The teak plantation in the PA should be gradually removed in a phased manner to help improve the habitat.

Mollem National Park, Goa

Evaluation Year, 2006–2009

A. Management Strengths

1. The site has been identified correctly and systematically categorized with zonation plans. This site is fully integrated into the wider network/landscape. The entire stretch of the Western Ghats in Goa and in adjoining areas of Karnataka and Maharashtra has been declared PAs.
2. There are well demarcated management and ecotourism zones. It safeguards all threatened biodiversity values.
3. A comprehensive management plan has been prepared and is soon being implemented.
4. Habitat restoration programmes are generally planned and monitored well. Removal of eupatorium, creation of check dams and water holes, planting of fruit-bearing species and maintenance of grass plots and CPT/rubble walls are being carried out.
5. The site has a comprehensive and very effective protection strategy. Check gates, patrolling and CPT/rubble walls are in place. An adequate number of personnel have been explicitly allocated for achievement of specific management objectives.
6. Human–wildlife conflicts have been mitigated. An animal rescue squad operates round the clock. Every year around 1000 snakes and 4 leopards are rescued.
7. There is comprehensive and systematic public participation in all important aspects of PA management.
8. All complaints are systematically logged in a coordinated system and timely responses are provided, with minimal repeat complaints.
9. All the visitor services and facilities accord with the relevant PA category and enhance the values of the PA. The web site is updated from time to time.
10. The populations of all threatened/endangered species are increasing or stable.
11. A planned approach to management of heritage assets is being instituted, and a deterioration of assets is being significantly redressed.

B. Management Weaknesses

1. There are few habitations inside the PA, including some hamlets and some settled pastoral people.
2. There is a management plan, but it is not comprehensive. It was prepared in 2008–2009 and till today it has not been revised or updated.
3. No reintroduction programme has been proposed yet.

C. Actionable Points

1. More vehicles and staff members are required.
2. Central assistance, which is released in October–November, should be released in the first quarter of the year.
3. Immediate actions are needed to develop a comprehensive management plan that is updated routinely.
4. Few habitations inside the PA need to be relocated.
5. Since the site has been managed well and conserved with goals and objectives, some reintroduction programmes can be proposed.

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Netravali Wildlife Sanctuary, Goa Evaluation Year, 2009–2010

A. Management Strengths

1. The site safeguards large number of threatened biodiversity values.
2. Habitat restoration programmes are generally well planned and monitored.
3. A coordinated system logs and responds effectively to most of the complaints.
4. A planned approach to management of heritage assets is being instituted and the deterioration of assets is being significantly redressed.

B. Management Weaknesses

1. The site has been identified appropriately but no zonation has been done for proper management of the area.
2. There is no management plan at present.
3. Threats and values are not monitored and assessed systematically.
4. The site has extensive biotic interference.
5. So far there has been no attempt to develop stakeholder participation.
6. No information is available on whether the populations of threatened/endangered species are stable or increasing.

C. Actionable Points

1. Immediate actions need to be taken to prepare a science-based comprehensive management plan for the site with clear categorisation of zones.
2. Threats and values need to be monitored and assessed systematically.
3. The extensive biotic interference needs to be minimised immediately.
4. Stakeholder participation should be enhanced for long-term management.
5. Urgent steps need to be taken to evaluate the populations of the threatened/endangered species of the site.

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Dandeli Wildlife Sanctuary, Karnataka Evaluation Year, 2006–2009

A. Management Strengths

1. The site is fairly well integrated into the network/landscape.
2. The site has a comprehensive science-based management plan prepared through a participatory process, which is routinely and systematically updated.
3. Habitat restoration programmes are generally well planned and monitored.
4. A coordinated system logs and responds effectively to most of the complaints.
5. Most of the neighbours/local communities are supportive of the PA management.
6. A planned approach to management of heritage assets is being instituted and the deterioration of cultural assets is being redressed.

B. Management Weaknesses

- 1. The values have been generally identified but not systematically assessed and monitored.
- 2. The site has some human and biotic interference.
- 3. The site has been identified correctly but not systematically categorized.
- 4. NGOs contribute nothing to the management of the site.
- 5. There are very few trained officers and frontline staff at the site.
- 6. Some evaluation and reporting have been undertaken, but they are neither systematic nor routine.

C. Actionable Points

- 1. The identified values should be systematically assessed and monitored
- 2. The human and biotic interferences at the site need to be reduced by community participation.
- 3. There is a need to categorise the site into zones.
- 4. The contributions of NGOs need to be enhanced for effective PA management.
- 5. The site needs trained manpower resources for effective PA management.
- 6. Systematic evaluation and routine reporting of biodiversity trends need to be done on a priority basis.

Mookambika Wildlife Sanctuary, Karnataka
Evaluation Year, 2006-2009

A. Management Strengths

- 1. The site safeguards all threatened biodiversity values and is integrated fairly well into the network/landscape.
- 2. The management plan is routinely and systematically updated.
- 3. Habitat restoration programmes are generally well planned and monitored.
- 4. A coordinated system logs and responds effectively to most complaints.
- 5. There is systematic evaluation and routine reporting of management-related trends.
- 6. The populations of most of the threatened/endangered species are increasing, and most others are stable.
- 7. Most of the threats to the site have been abated.
- 8. The expectations of most of the visitors were met.
- 9. A planned approach to management of heritage assets is being instituted and the deterioration of assets is being significantly redressed.

B. Management Weaknesses

- 1. No reintroduction programme has been proposed yet.
- 2. No NGO contribution to the management of the site.
- 3. Only few trained officers and frontline staff have been posted at the site.
- 4. There is little or no public participation in the management of the PA.
- 5. Only key neighbours/communities are supportive of the PA management.

C. Actionable Points

- 1. Since the site has been well managed and conserved with all goals and objectives, some reintroduction programmes can be initiated.
- 2. Possibilities of collaboration of NGOs should be explored for management of the site.
- 3. The site needs more trained frontline staff members.
- 4. Immediate action needs to be taken for involvement of the local public in various long-term management initiatives of the site.
- 5. The local communities need to be involved in the management of the PA.

Biligiri Rangaswamy Temple Wildlife Sanctuary, Karnataka Evaluation Year, 2009–2010

A. Management Strengths

1. The site serves as a connecting link between the Western Ghats and Eastern Ghats and it safeguards all threatened biodiversity values.
2. It has a comprehensive management plan, which is updated routinely and systematically.
3. Habitat restoration programmes are thoroughly planned and monitored. An elephant corridor has been restored by purchasing land from private owners. Excessive growth of lantana on both sides of roads has been cleared for better viewing. There is a plan to remove parasitic plants from *Emblica officinalis*.
4. The site has a comprehensive and very effective protection strategy. Watchers have been placed at all vantage points for protection.
5. Many NGOs have associated themselves with the sanctuary and they contribute to the sanctuary at all levels.
6. A large number of trained officers and frontline staff are posted at the site.
7. There is a comprehensive and systematic public participation in all important aspects of PA management.
8. All visitor services and facilities accord with the relevant PA category and most of them enhance PA values, website and leaflets are available for the public information.
9. Systematic evaluation and routine reporting of management-related trends have been undertaken.
10. Populations of threatened/endangered species are increasing and the area is good for the rusty spotted cat and four-horned antelope.
11. A planned approach to manage cultural heritage. There is a Champaka tree that is supposed to be more than 1000 years old and buildings built by the Maharaja of Mysore are still maintained very nicely.

B. Management Weaknesses

1. The site has some biotic interference in terms of settlements present inside the sanctuary.
2. No zonation of the sanctuary has been carried out.
3. Funds are not coming in time. Central funds are often delayed.

C. Actionable Points

1. Training of more field staff in wildlife management will be helpful.
2. A modern interpretation centre is needed for developing awareness and education.
3. There is some biotic interference caused by settlements present inside the sanctuary, which needs to be effectively managed.
4. The site needs categorisation into zones instantly.
5. Funds for PA management should be made available timely.

Kudremukh National Park, Karnataka, Evaluation Year, 2012-2013

A. Management Strengths

1. Conservation values and threats have been effectively identified.
2. Buffer and tourism zone have been identified.
3. Habitat improvement efforts are concentrated on fire protection, control of encroachments, poaching and livestock.
4. The Mookambika, Someshwara and intervening reserve forests are being transferred to the Kudremukh Wildlife Division to integrate the protected area (PA) into the larger landscape.
5. Adequate staff strength.
6. The trained Wildlife Warden and new recruits are knowledgeable and eager to learn.
7. Personnel deployment is done so as to get the best out of the known capabilities.
8. An effective system is in place to handle complaints.
9. The Bhagwati herbal camp has excellent potential, good visitor facilities and trails.
10. Though there are few brochures and trail guides, their quality is very good.
11. Twenty-four research projects have been carried out.
12. Given the steep odds against Naxalism, the efforts at protection are as good as they can be.

B. Management Weaknesses

1. The internal zones overlap with the core zone, which extends over the national park. This militates against the principles of zonation.
2. The park is managed under the shadow of Naxalites.
3. The management plan term is getting over, but the readiness to revise it is not in sight.
4. There are large numbers of stakeholders, but there is minimal participation.
5. There are a number of habitat management prescriptions in the plan, but there is little evidence of these on the ground. Invasive ferns, eupatorium and to a lesser extent, lantana are issues, but there is little monitoring.
6. Beyond the two sanctuaries and intervening RFs, there are no attempts to view the larger landscape and corridors.
7. The involvement of the district administration is limited to addressing the Naxalite threats.
8. There are no research priorities in the plan.
9. The terrain is hilly with few roads. Site not easily accessible and the management units are large.
10. The wireless network is not working since 2005 as the repeaters on hill features were destroyed by Naxalites. Likewise, the patrolling camps have also been burned. Communication with distant points is conducted using mobiles, which do not always have connectivity.
11. The residential accommodation is short by 29 units.
12. The vehicles, except two, are old, and the new ones are not 4WD vehicles, which are essential in this hilly terrain.
13. The funding is significantly short of what is needed.
14. There is no contribution by NGOs.
15. The now abandoned mined area of KIOCL and the silt dam are seriously degraded areas.
16. The participation of the public is limited.
17. The formation of EDCs is in its infancy and livelihoods are yet to be addressed.
18. There are few awareness camps.
19. Beyond brochures, the outreach is stagnant. The mechanisms used to distribute these are inadequate.

20. Even though there have been many research projects, only one report is on hand. The estimates of the populations of animals and tracking changes in the habitats are areas of weakness.
21. The mining township of KIOCL, with some 400 families, continues to remain where it is because it has not been possible to rehabilitate those villages and habitations that have volunteered to move because of a want of funding.
22. Encroachers with local political backing refuse to leave unless compensation is paid to them on par with encroachers who were evicted some time back in Chikamagalur district.

C. Actionable Points

1. The tourism and habitat improvement zones need to be separated from the core area as distinct non-overlapping zones. The buffer at present does not have legal status, but the district administration could be engaged in the zone through various schemes in the district plan to focus on practices that are consistent with ecological security.
2. The process for revision of the management plan needs to be put in place on priority. The new plan needs to seek out the participation of the stakeholders.
3. Habitat management on the ground must be accorded priority with an appropriate monitoring approach to gauge the efficiency of the programme.
4. An attempt needs to be made to explore the contiguity of the larger landscape with corridors (several corridors in the context of the elephant and tiger have already been identified in the Western Ghats).
5. Research needs with priorities and monitoring protocols have to be considered in the new plan alongside efforts to overcome the other weaknesses in the existing plan.
6. There is a need to realistically reorganize the sizes of ranges, sections and beats. The average size of a beat at present is 25 km². About 15 km² is considered appropriate. With Naxalites active in the area, not much can be done with the wireless system, and the police units at the patrolling camps could be requisitioned for random patrolling in the affected areas. This can be done at the government level.
7. The possibilities of augmenting the residential facilities on a hiring basis with charges paid by the government under exceptional situations rather than using the system of meagre HRAs need to be explored.
8. The old vehicles need to be replaced with new 4WD vehicles, and the new ones without 4WD may be exchanged for ones with such traction within the department (same age and condition).
9. The funding crunch is a perennial issue that needs to be addressed by seeking alternate sources.
10. The park is as good a PA as any in the state, and there are good sightings, even if these are not of the tiger and elephant. It is scenically unmatched and ecologically extremely important though it is somewhat neglected. Rather than measuring it by its current attraction to visitors vis-à-vis Bandipur, Nagarhole and Bhadra, it needs to be seen by its conservation significance.
11. Given better outreach, the park will have the potential to attract investment from NGOs.
12. The abandoned mine area of KIOCL needs to be afforested in a project mode. It is going to be much more expensive because of its highly degraded status, and it should not be fitted into the format of a standard afforestation scheme.
13. There are many enclaves that have volunteered for relocation, but there are no funds. If the most vocal ones are rehabilitated, a better atmosphere will be created for seeking the participation of the back benchers or even those who are unhappy. There is a need to explore the schemes under the district plans to focus on the right areas to seek goodwill. Participation, formation of EDCs and cooperation will follow. This is particularly important when working under the shadow of Naxalites.
14. The participation of local NGOs needs to be actively sought to enhance the awareness programmes, the number of nature camps and the quality of delivery, with other innovations. Appropriate government support is essential.
15. The PA needs an appropriately designed web site.
16. Background research is needed to determine the fate of the earlier research reports. Efforts are needed to get these and use the results to carry out actions that are relevant on the ground.
17. Carrying out population estimates with analysis of the trends on a regular basis is a must, and an appropriate database for the park covering all relevant aspects needs to be established.
18. The problem of the KIOCL Township and that of the encroachers have to be solved at the government level sooner than later.
19. A phased programme for prioritised rehabilitation of enclaves with all factors accounted for needs to be prepared and funding requested. Without a plan, matters will not move.

Wayanad Wildlife Sanctuary, Kerala, Evaluation Year, 2006-2009

A. Management Strengths

- 1. The site has been identified correctly and systematically categorised with proper zonation plans.
- 2. The site has a comprehensive management plan, which is routinely, systematically and scientifically updated through a participatory process.
- 3. The site safeguards large number of threatened biodiversity values.
- 4. There is systematic public participation in most aspects of the PA management.
- 5. A coordinated system logs and responds effectively to most of the complaints.

B. Management Weaknesses

- 1. The site has extensive human and biotic interference.
- 2. The resource allocation is ad hoc, and funds are never released in time.
- 3. NGOs make some contributions to the management of the site, but opportunities for collaboration have not been systematically explored.
- 4. The resources are insufficient for most tasks.
- 5. There are very few trained officers and frontline staff at the site.
- 6. The visitor services and facilities are available but these need up-gradation to meet the expectations of the visitors.
- 7. There is some evaluation and reporting of management-related trends, but these are neither systematic nor routine.
- 8. The neighbours/adjacent communities are not very supportive.
- 9. There is some management activity, but the deterioration of the cultural heritage continues.

C. Actionable Points

- 1. There is extensive human and biotic interference, which needs to be addressed immediately. The issue of human wildlife conflict needs continuous attention.
- 2. Resource allocation and adequate funding support are needed urgently.
- 3. The site needs trained manpower resources for PA management.
- 4. Systematic and routine reporting of management-related trend need to be done on a priority basis.
- 5. Immediate actions are required to determine the expectations of visitors and to provide facilities for them.
- 6. The adjacent communities need to be involved for effective long-term management of the site.

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Eravikulam National Park, Kerala Evaluation Year, 2006–2009

A. Management Strengths

1. The site has been identified correctly and categorized systematically with proper zonation plans. It safeguards large number of threatened biodiversity values and is integrated fairly well into the network/landscape.
2. The site has a comprehensive science-based management plan prepared through a participatory process, which is routinely, systematically and scientifically updated.
3. Habitat restoration programmes are generally well planned and monitored.
4. The site has a comprehensive and very effective protection strategy.
5. Protected area is almost free from human wildlife conflicts.
6. Comprehensive formulae are systematically used to decide most resource allocation and generally funds are released in time.
7. There is comprehensive and systematic public participation in all important aspects of PA management. Benefits from park flow to the communities through ecodevelopment committees (EDCs) and this is an important emerging model of linking community livelihoods with PA conservation.
8. This is another good model of ecotourism being run with the support of local communities organized as EDCs. All the visitor services and facilities accord with the relevant PA category, and most enhance the PA values.
9. There is systematic evaluation and routine reporting of management-related trends.
10. A planned approach to management is being instituted and the deterioration of cultural asset is being redressed.

B. Management Weaknesses

1. Only few trained officers and frontline staff have been posted at the site.
2. A systematic inventory provides the basis for the maintenance schedule, but the funds made available are inadequate.

C. Actionable Points

1. More trained frontline staffs are needed for management of the site.
2. The linkage between the management objectives and staff performance needs to be assessed consistently and systematically.
3. More funds are needed for the systematic inventory and maintenance schedule of assets.

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Shendurney Wildlife Sanctuary, Kerala Evaluation Year, 2009–2010

A. Management Strengths

1. The site has been identified correctly and systematically categorized with zonation plans. It protects most of the values in terms of rare and threatened species and is well integrated into the adjoining ecologically rich areas of Agasthyamalai Landscape. This also falls at a point where Periyar Landscape has perforated and porous linkages with Agasthyamalai Landscape.
2. The site has a comprehensive science-based management plan prepared through a participatory process with

many NGOs and research organisations, which is routinely and systematically updated.

3. A large number of trained officers and frontline staffs are posted at the site.
4. A coordinated system logs and responds effectively to most of the complaints.
5. Substantial livelihood issues are addressed by the PA management. There is a good approach towards the problems of women. This is also an important ecotourism destination which is the first planned ecotourism venture run through Thenmala Ecotourism society.
6. All the visitor services and facilities accord with the relevant PA category and most enhance the PA values. A website and leaflets are available for the public.
7. There is systematic evaluation and routine reporting of management-related trend.
8. The populations of most of the threatened/endangered species are increasing; most of the others are stable. Each Gluta tree is marked and monitored.
9. The expectations of most of the visitors were met. There are many opportunities for tourists to enjoy their visits.
10. Most of the neighbours/local communities are supportive of the PA management.
11. A planned approach to management of cultural heritage is being instituted and the deterioration of assets is being significantly redressed.

B. Management Weaknesses

1. The site has some biotic interference, due to the settlements present inside the sanctuary.
2. There have been few reports of human-wildlife conflicts.
3. No reintroduction programme has been proposed yet.

C. Actionable Points

1. Additional staffs are needed for management of the PA.
2. There is some biotic interference, caused by settlements present inside the sanctuary, which needs to be resolved immediately.
3. There are a few reports of wildlife conflict, which need to be mitigated urgently.
4. If the site is managed properly, any reintroduction programme can be suggested.

Silent Valley National Park, Kerala Evaluation Year, 2012-2013

A. Management Strengths

1. Values and threats have been identified appropriately.
2. The zoning is appropriate. A buffer has been identified outside the environmentally sensitive area (ESA).
3. The State Wildlife Board (SWLB) has recommended the addition of 263 km² in the Amarambalam reserve as a sanctuary.
4. The site has a good management plan.
5. There is effective stakeholder participation in the planning processes.
6. The identified landscape includes the Nilambur elephant reserve, Mukurthi Wildlife Sanctuary (Tamil Nadu), the Nilgiri Biosphere Reserve and protected areas (PAs) of Tamil Nadu, Karnataka and Kerala.
7. The participation of EDCs in protection, eco-tourism, nature camps, population estimation and visitor management is effective.
8. There is a website that is designed to field questions and comments.
9. There is an effective system for handling complaints and also a toll-free number.
10. Livelihoods are effectively addressed through EDCs.

11. There is adequate information in the public domain available.
12. The visitor services and facilities are good.
13. A large number of research projects have been carried out.
14. Threatened biodiversity values are effectively addressed.
15. Threats have been effectively reduced.
16. The local people are supportive.
17. Visitors are satisfied.

B. Management Weaknesses

1. The PA has a very difficult terrain and therefore the existing staff strength is inadequate.
2. Training is inadequate.
3. Several projects are in the domain of academics, which is fine as these contribute to science. But those providing knowledge for management and those of management use have not been acted on.

C. Actionable Points

1. The section and beat areas need to be recast and the manpower planned accordingly.
2. The training needs can be met in a phased manner through wildlife training facilities within the state. The role of SACON could be explored.
3. Relevant research projects need to be translated into actions and other studies also need to be put on record as summaries of research outcomes.

Peppara Wildlife Sanctuary, Kerala Evaluation Year, 2012-2013

A. Management Strengths

1. The site has been identified properly and forms part of large landscape that includes the Shendurny and Neyyar sanctuaries, Agasthyimalai Biosphere Reserve and Elephant Reserve (Kerala and Tamil Nadu) and Kalakad Mundanthurai Tiger Reserve (Tamil Nadu), but it cannot be said that it is integrated because there is no such integrated system yet in the country.
2. Generally the protection is good. EDCs are involved.
3. There are some actions for habitat restoration.
4. Human-wildlife conflicts are attended to in a timely manner.
5. The financial allocation is sufficient.
6. The opportunistic local participation is good. EDCs are involved in protection.
7. Livelihoods are being addressed through EDCs.
8. There is a systematic schedule for maintenance of assets.
9. The local communities are supportive.

B. Management Weaknesses

1. The values and threats have not been systematically identified (the buffer and tourism zones overlap and the buffer is within the protected area (PA)).
2. The management plan deals in generalities. There are no theme plans—these are expected to be developed by the warden, which is not correct.
3. There is no systematic assessment for habitat restoration.
4. The conflict mitigation could be better.

- 5. The manpower is inadequate for the difficult terrain.
- 6. The mobility of the frontline staff is inadequate.
- 7. There are few patrolling camps.
- 8. Central funding has delayed and received in late October or November.
- 9. The staffs lack training.
- 10. There is no effective system for handling complaints.
- 11. The Outreach is inadequate-only brochures and pamphlets are available, with no mechanism for distribution.
- 12. The visitor facilities are inadequate.
- 13. Few research projects have been conducted, but the findings have not been translated into action. The population estimates amount to recording with little analysis and interpretation.

C. Actionable Points

- 1. It is obvious that the management plan is not complete. The values and threats need to be appropriately identified.
- 2. There ought not to be any overlaps between zones and the buffer zone needs to be identified outside the PA, with strategies for management.
- 3. Habitat restoration needs to be appropriately assessed with strategies.
- 4. Training is needed for conflict mitigation.
- 5. Considering the difficult terrain, the beat and section sizes need to be recast and patrolling camps sited according to the needs.
- 6. Timely release of central funding needs to be addressed.
- 7. There are training centres in Kerala where wildlife training can be imparted.
- 8. There is a standard system for handling complaints that needs to be put in place.
- 9. Audio-visual equipment, trained personnel, materials and a visitor-cum interpretation centre are needed.
- 10. A website is needed.
- 11. The monitoring (at least population estimates) needs special focus on the trends of threatened species.

Ossudu Wildlife Sanctuary, Pondicherry
Evaluation Year, 2012-2013

A. Management Strengths

- 1. The conservation values and threats have been appropriately identified.
- 2. A 100 m buffer zone has been identified. It may seem small, but this protected area (PA) is surrounded by a developed city.
- 3. The management of Auroville Ashram is ready to help with habitat restoration on their island and along the lake margin.
- 4. There is an effective system for handling complaints.
- 5. There is a van for carrying out outreach programmes
- 6. Good baseline research has been conducted.
- 7. Given the support and resources, efforts are being made to provide effective protection.
- 8. Threats are under control.
- 9. The local community is generally supportive.

B. Management Weaknesses

1. Biotic pressures include fishing, livestock grazing, hunting of birds, inflow of effluents and dumping of solid waste.
2. Internal zonation is difficult, but there can be a restricted zone (core) around the islands and sections of lotus pads. There is no demarcation across the waters with Tamil Nadu.
3. Stakeholders from the urban area are not involved in planning.
4. Protection is ad hoc.
5. More than half the lake is within Tamil Nadu, where it is not a protected area (PA). There is some cooperation, but nothing has been formalised.
6. There are significant weaknesses among the management personnel. Only the CF and the DFO are from the forest department. The other two officers are on deputation from the Agriculture Department and the frontline staffs are on daily wages. There are a few paid volunteers.
7. There are no boats. When boats are needed, they are pressed into service from the Tourism Department. There is only one jeep. Communication is by personal mobiles.
8. There is uncertainty regarding funding since there is no specific allocation.
9. There is no contribution from NGOs.
10. The management personnel are not trained in wildlife management.
11. The participation of the public is poor.
12. Livelihood aspects of the local communities are not addressed.
13. The outreach programmes are weak.
14. Visitor facilities have not been developed.
15. The baseline research has not been used in the strategies.
16. There is little monitoring of biodiversity.

C. Actionable Points

1. The protection strategies need to be specific and focused. These can still be made part of the plan as an approved addendum.
2. An internal core and the inter-state boundary need to be set up using buoy. The management of the buffer zone needs clarity.
3. A core management team with regular frontline staff required to be setup immediately.
4. At least one motorboat and a non-motorised boat as well as a pickup with a four-seat cabin are necessary.
5. A closed communication group has to be commissioned with adequate numbers of wireless communication sets.
6. Funding from MoEF has not been explored, this needs to be done.
7. Efforts need to be made to enlist NGO assistance.
8. There could be a tie-up with SACON and one of the training schools in either Tamil Nadu or Kerala to train personnel. Arrangements with the Pondicherry University/Ecology Centre could be explored. For officers there is a PG Diploma Course at the WII and there are selective thematic short-duration courses as well.
9. Stakeholders need to be sought out for participation.
10. A beginning can be made by forming EDCs and using the existing schemes with the government departments. Visibility of management need to be maintained in these efforts.
11. Outreach programmes need to be developed. There can be a small visitor-cum-interpretation centre. A manned telescope could be stationed at a strategic point and binoculars could be hired out. A specially commissioned illustrated bird compendium could be made available for sale.
12. The baseline research needs to be used to create monitoring procedures.

Gulf of Mannar National Park, Tamil Nadu

Evaluation Year, 2006-2009

A. Management Strengths

- 1. The site has been identified correctly and systematically categorised with proper zonation plans. It safeguards large number of threatened biodiversity values and is fully integrated into wider landscape/Seascape.
- 2. Stakeholders participate in most of the planning processes.
- 3. Most of the biological communities are likely to be able to sustain the native biodiversity.
- 4. Most of the neighbours/local communities are supportive of the management of the protected area (PA).
- 5. A planned approach to management is being instituted and the deterioration of cultural assets is being redressed.

B. Management Weaknesses

- 1. The site has some human and biotic interference.
- 2. There is no management plan.
- 3. There are few planning and monitoring programmes in place for habitat restoration.
- 4. Resource allocation is ad hoc, and funds are never released in time.
- 5. NGOs make some contribution to the management of the site, but opportunities for collaboration are not systematically explored.
- 6. Only a few trained officers and frontline staff are posted in the site.
- 7. The visitor services and facilities are practically non-existent and the expectations of visitors are generally not met.
- 8. There is little or no systematic evaluation or routine reporting of management-related trends.
- 9. The populations of threatened/endangered species are declining.

C. Actionable Points

- 1. Comprehensive science-based management plans need to be developed urgently.
- 2. There is some human and biotic interference, which need to be managed through community participation in management.
- 3. Habitat restoration is important for enhancing the long term-conservation prospects and management of the site.
- 4. Adequate allocation of resources and timely release of funds are required.
- 5. More trained frontline staffs are needed for management of the site.
- 6. The visitor services and facilities required to be created and managed keeping in mind the expectations of the visitors.
- 7. Systematic and routine reporting of management-related trends are needed on a priority basis.
- 8. Intense research is needed to determine the cause of declining populations of threatened wildlife.

Mudumalai National Park, Tamil Nadu

Evaluation Year, 2006–2009

A. Management Strengths

1. The site has been identified correctly and systematically categorized with proper zonation plans. It safeguards all threatened biodiversity values and is integrated fairly well into the network/landscape.
2. The management plan is routinely and systematically updated.
3. Habitat restoration programmes are generally well planned and monitored.
4. Reintroduction programmes are thoroughly planned and monitored.
5. The site has a comprehensive and very effective protection strategy.
6. Human–wildlife conflicts have been mitigated.
7. An adequate number of personnel have been explicitly allocated for achievement of specific management objectives.
8. Adequate resources (vehicles, equipments, buildings, etc.) have been explicitly allocated for achievement of specific management objectives.
9. All the complaints are systematically logged in a coordinated system and timely responses are provided, with minimal repeat complaints.
10. There is systematic evaluation and routine reporting of management–related trends.

B. Management Weaknesses

1. There is a management plan, but it is not comprehensive.
2. Resource allocation is ad hoc, and funds are never released in time.
3. NGOs make some contributions to the management of the site, but opportunities for collaboration are not systematically explored.
4. Only a few trained officers and frontline staff have been posted at the site.
5. The expectations of visitors are generally not met.
6. Only key neighbours/local communities are supportive of the PA management.
7. There is some management activity, but the deterioration of the cultural heritage continues.

C. Actionable Points

1. The site needs a science–based comprehensive management plan.
2. Proper allocation of resources and timely release of adequate funds are needed.
3. The collaboration of NGOs should be systematically explored for management of the site.
4. The site needs more trained frontline staff.
5. Immediate actions are needed to determine the expectations of visitors.
6. Local communities need to be involved in the management of the PA.
7. The cause of the deterioration of the cultural heritage needs to be determined.

Mukurthi National Park, Tamil Nadu

Evaluation Year, 2006-2009

A. Management Strengths

1. The unique shola forests and endangered animal Nilgiri Tahr have been documented well.
2. Most of the threats have been systematically identified and assessed. Threats in the past have included fires in the grasslands and poaching of Nilgiri Tahr.
3. There are no human settlements within the park. The main biotic interference is the introduction of exotic wattle in parts of the national park.
4. The site has been identified correctly and systematically categorised with zonation plans. The sites safeguards all threatened biodiversity values. The site is integrated fairly well with the network/landscape. Mukurti National Park has been integrated very well into a wider network of conservation areas, including the Nilgiri Biosphere Reserve and the Project Elephant Reserve.
5. The site has a comprehensive science-based management plan prepared through a participatory process.
6. A management plan for the sanctuary was first prepared for the period 2004-05 to 2008-09. This has been updated recently for the next five years.
7. Habitat restoration programmes are generally well planned and monitored. The main habitat restoration programme is removal of the exotic wattle (*Acacia* sp.), which was introduced in the grasslands as a source of tannins, which are obtained from its bark. Given the prospects of global warming, this plant has the potential to spread over the grasslands. The forest department has recently begun a programme of eradication of wattle.
8. The site has a good system of protection camps. The area also enjoys some protection from its geographical location, being bordered by a steep escarpment to the west and the Nilgiri South Forest Division to its east.
9. A large number of trained officers and frontline staffs are posted at the site.
10. There is systematic evaluation and routine reporting of management-related trends. Regular censuses of the important species here such as the Nilgiri Tahr has been carried out.
11. The population of the Nilgiri Tahr, which was once under severe pressure from poaching, has increased in recent years/decades as a result of better protection.
12. The expectations of most visitors were met. This statement should be qualified by observing that visitor entry into the PA is highly restricted. Only those with genuine interest in conservation are permitted entry. The few visitors who go to the park are very satisfied.

B. Management Weaknesses

1. No reintroduction programme has been proposed yet.
2. There is opportunistic public participation in some aspects of PA management.
3. No livelihood issues are addressed by the PA management.
4. Values of cultural heritage are unknown.

C. Actionable Points

1. Since the site is highly managed with management goals and objectives, reintroduction programmes should be proposed.
2. The participation of the public in the PA management should be enhanced.
3. Various livelihood programmes are needed for resource-dependent communities.
4. Values of cultural heritage need to be explored.

Sathyamangalam Wildlife Sanctuary, Tamil Nadu Evaluation Year, 2009–2010

A. Management Strengths

1. Habitat improvement programmes are effectively implemented.
2. The site protection camps are functioning effectively.
3. All human–wildlife conflicts have been mitigated. High priority is given to this aspect. Electric fences are maintained very effectively.
4. The participation of NGOs is good. They participate in both research and social activities.
5. There is systematic public participation in most aspects of PA management.
6. Substantial livelihood issues are addressed by the PA management. The participation of women in value addition is very good.
7. There is systematic evaluation and routine reporting of management–related trends.
8. Very good support is obtained from the local communities for the management of the PA.
9. A planned approach to management is being instituted and the deterioration of assets is being significantly redressed.

B. Management Weaknesses

1. Cattle grazing are continuing in some parts of the sanctuary.
2. The site has been identified well but not systematically categorised. Only the lower slopes have been declared as the wildlife sanctuary and the hills are treated as reserve forests.
3. There is no management plan to–date. This is under preparation. The sanctuary was declared only in 2008.
4. Not much information is available in the public domain.

C. Actionable Points

1. Very good protection is offered, but firewood collection and grazing need to be stopped.
2. The site needs categorisation into zones.
3. Immediate actions need to be taken to complete the comprehensive management plan, which is under preparation.
4. A new training hall with a capacity of 200 people is required. A good interpretation centre is needed in the sanctuary for visitors.
5. Funds are released late. The sanctuary needs regular officer–level attention.

Srivilliputhur Grizzled Squirrel Wildlife Sanctuary, Tamil Nadu

Evaluation Year, 2012-2013

A. Management Strengths

1. Threats have been identified well.
2. The management plan is reasonably good.
3. The protected area (PA) is part of a landscape that includes three territorial forest divisions and the newly notified Meghamalai Sanctuary (proposed for tiger reserve status) and is contiguous with forests in Kerala, including Periyar Tiger Reserve.
4. There is some NGO support.
5. The local participation on the ground is increasing. There are 33 EDCs through which livelihood options are being addressed.
6. There is an effective system of handling complaints.
7. Two sites are proposed for eco-tourism. One dedicated van and other efforts to train local guides are on.
8. The Botanical Survey of India (BSI) is conducting plant surveys that will be valuable for management. Population surveys for threatened species are undertaken with the help of knowledgeable persons.
9. The trends of threatened species show that the populations are stable or increasing.
10. There are no serious issues with the locals. The local communities are generally supportive.

B. Management Weaknesses

1. Values have not been fully stated.
2. The zonation is not in detail, the buffer zone has been created inside the PA, which is not correct.
3. The strategies are not focused, merely general statements.
4. The participation of stakeholders is inadequate.
5. The staff strength is inadequate. The vacant posts amount to 13% of the strength and the management units are large for the difficult terrain.
6. The participation of local communities is weak.
7. Better mobility of foresters and guards is needed. Fuel support is also weak.
8. The communication network needs to be expanded.
9. The personnel are not trained in wildlife management.
10. The information on the PA available in the public domain is inadequate.
11. There is no interpretation centre.

C. Actionable Points

1. Efforts are needed to fill up the vacancies and this can happen only at the government level. The current beats need to be split and made smaller by carving out 18 additional beats.
2. The frontline staffs need to be provided motorcycles that can be shared among sections.
3. More repeater wireless stations and hand held sets are needed according to the reorganisation of beats.
4. Sufficient POL support is essential for protection and other management activities.
5. A phased plan for training and assigning personnel is essential.
6. A website is being designed.

Point Calimere Wildlife Sanctuary, Tamil Nadu Evaluation Year, 2012-2013

A. Management Strengths

1. The conservation values and threats have been effectively identified.
2. There are no human settlements inside the sanctuary.
3. There is a good management plan.
4. The habitat restoration planning is adequate.
5. The protection is effective, as there is good planning for protection strategies.
6. The site is located at the eastern end of a designated Ramsar site.
7. There is excellent planning for integration into a large landscape.
8. There is good NGO support.
9. The local communities are actively involved in management actions.
10. There is an effective system for handling complaints.
11. Livelihood issues are addressed through EDCs and JFM committees.
12. Population estimates are regularly conducted, including bird counts (waterfowl). On land there are permanent transects. Trends are analysed.
13. The trends of threatened species indicate stability with the expected fluctuations.
14. Threats have been effectively mitigated.
15. The local communities are supportive to the management.

B. Management Weaknesses

1. The area is small, therefore zonation is difficult.
2. Fishing, existence of salt pans and grazing are issues.
3. Local communities do not participate much in planning.
4. There is a shortage of staff. There has been no recruitment for a long time and the staffs are in the older age bracket.
5. Some equipment is lacking.
6. The funds are inadequate.
7. The staffs lack wildlife management training.
8. Outreach is limited to brochures and pamphlets.
9. There are no interpretation centre or guide services and there is no proper visitor feedback system.

C. Actionable Points

1. Seasonal cores can be identified and managed when birds congregate. The movement of visitors can be restricted on some sites.
2. Efforts are needed to fill up all vacancies. Recruitment is at the government policy level, but it may be possible to get younger and motivated staff members on transfer.
3. Equipment such as GPS, binoculars, cameras and a couple of telescopes are needed.
4. The anti-poaching watchers need uniforms.
5. The protected area (PA) is an important site in Tamil Nadu. It is part of a designated Ramsar site and needs adequate funding. Alternate sources of funding need to be explored.
6. There needs to be a plan for training in phases. The available facilities for wildlife training within the state for frontline staff could be availed of. On-the-job training could also be attempted. The help of the BNHS centre may be explored. The Pondicherry-based Foundation for Ecological Research Advocacy and Learning (FERAL) might be able to help also.
7. The outreach can be improved through a modest beginning with an interpretation centre. Training guides on the job should not be a problem. The BNHS centre could help with birds.
8. The PA needs a website.







EASTERN REGION



EASTERN REGION

3.3

Eastern Region

S. No.	State	National Parks and Wildlife Sanctuaries	Evaluation Year
1.	Bihar	Kaimur Wildlife Sanctuary	2006-2009
2.	Bihar	Kanwar Jheel Wildlife Sanctuary	2009-2010
3.	Bihar	Nakti Dam Wildlife Sanctuary	2012-2013
4.	Bihar	Vikramshila Gangetic Dolphin Wildlife Sanctuary	2012-2013
5.	Chhattisgarh	Udanti Wildlife Sanctuary	2006-2009
6.	Chhattisgarh	Semarsot Wildlife Sanctuary	2006-2009
7.	Chhattisgarh	Banrnawapara Wildlife Sanctuary	2009-2010
8.	Chhattisgarh	Guru Ghasidas National Parks	2009-2010
9.	Chhattisgarh	Kanger Valley National Parks	2012-2013
10.	Jharkhand	Mahauadar Wildlife Sanctuary	2006-2009
11.	Jharkhand	Dalma Wildlife Sanctuary	2006-2009
12.	Jharkhand	Hazaribag Wildlife Sanctuary	2009-2010
13.	Jharkhand	Kodarma Wildlife Sanctuary	2012-2013
14.	Odisha	Sunebeda Wildlife Sanctuary	2006-2009
15.	Odisha	Bhitarkanika Wildlife Sanctuary	2006-2009
16.	Odisha	Gahirmatha Wildlife Sanctuary	2006-2009
17.	Odisha	Chandaka Dampara Wildlife Sanctuary	2009-2010
18.	Odisha	Hadgarh Wildlife Sanctuary	2012-2013
19.	Odisha	Chilika (Nalaban) Wildlife Sanctuary	2012-2013
20.	West Bengal	Mahananda Wildlife Sanctuary	2006-2009

21.	West Bengal	Jaldapara Wildlife Sanctuary	2006–2009
22.	West Bengal	Gorumara National Parks	2006–2009
23.	West Bengal	Singalila National Parks	2006–2009
24.	West Bengal	Neora Valley National Parks	2009–2010
25.	West Bengal	Chapramari Wildlife Sanctuary	2012–2013

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Kaimur Wildlife Sanctuary, Bihar

Evaluation Year, 2006–2009

A. Management Strengths

1. There are few man-animal conflicts and some mitigatory measures are taken through EDCs.
2. The stakeholders participate in eco-development planning. Information is made available through display boards and EDC meeting registers.

B. Management Weaknesses

1. The site has extensive human and biotic interference. Seventy percent of the area of the sanctuary is virtually under the control of the extremists.
2. There is no management plan for the sanctuary. Even a working plan has not been prepared after 1972.
3. Due to the absence of a management plan, habitat restoration programmes are entirely ad hoc.
4. Protection is restricted to only 30% of the area to which there is some access.
5. Financial resources are scarce. The release of funds from CSS national park and sanctuary scheme is ad hoc.
6. There is no trained man power in the sanctuary. Even the staff's knowledge about wildlife conservation is not sufficient for effective management of the protected area (PA).
7. Complaints are received during EDC meetings and inspections, but the follow-up is not systematic.
8. Due to the prevailing insurgency, hardly any visitor services have been developed.
9. There are a number of cultural and natural heritage sites in the sanctuary. They are maintained irregularly on account of the law and order situation, and hence deterioration continues.

C. Actionable Points

1. Steps need to be taken immediately to develop a science-based comprehensive management plan for the site.
2. The site needs to be properly categorized into zones.
3. The extensive human and biotic interference need to be minimized through effective public participation. This will also reduce the human-wildlife conflicts.
4. The protection strategies need to be strengthened.
5. Adequate funds and resources should be released in time.
6. More frontline staff members need to be trained for PA management.
7. Complaints and comments received about the PA management need to be followed up.
8. Steps need to be taken to address the livelihood issues of resource-dependent communities.
9. The local communities should be involved for effective PA management.

Kanwar (Kabar) Jheel Wildlife Sanctuary, Bihar Evaluation Year, 2009-2010

A. Management Strengths

- 1. Most of the values have been systematically identified and assessed. The site's potential has been recognized for long and recorded by agencies such as the BNHS and local NGOs.
- 2. The site provides refuge to several species of bird, and this is also a site where bird ringing has been carried out since 1964. The BNHS has been organizing bird ringing programmes.
- 3. The site has been noted as being one of the nationally and internationally important avifauna sites. There is considerable awareness about the presence of the avifauna and its conservation needs among the visitors.
- 4. The area is important in terms of migratory birds and rich in cultural and biodiversity heritage.

B. Management Weaknesses

- 1. There is extensive human and biotic interference at the site. The threats to the site have not abated but have grown worse. There are 10 villages in the surroundings, close by, and there are 16 villages that could be considered to have an influence on the protected area. There are about 3000 cattle in the villages that graze in the drawdown area. The water regulating mechanism, both at the intake points and the outlet, is a key issue, having a bearing on biodiversity conservation. Threats to biodiversity such as poaching and hunting have been recognized, but fishing, crop cultivation, grazing in the drawdown area, etc. have been noted only recently.
- 2. The site has been identified correctly but not categorized properly.
- 3. Currently there is no management plan. According to the available records, attempts were made to develop management plans in the past. The plan being followed currently is outdated and has not been approved duly. There is no mechanism in place to review and update it.
- 4. The stakeholders are not currently involved in the planning processes. There is no advisory committee for the sanctuary (a statutory requirement) in place.
- 5. The earlier management plan envisaged several actions for habitat restoration, but these have been implemented only partly as the rights over the land under cultivation are not settled yet.
- 6. The site has no protection strategy. The site is currently under a DFO who is in charge of three districts. A Range Officer who is in charge of the entire district also oversees the proposed sanctuary. The strength of the staff working exclusively for the protected area (PA) is limited to one Forester and one Forest Guard who have limited resources.
- 7. The site has a problem of conflicts, as a result of which there is bird poisoning and capture, which have been reported by birders. The mitigation plan has been hampered because of the land ownership problem.
- 8. Resource allocation is ad hoc, and funds are never released in time. The resources are not sufficient for most tasks. The human and financial resources available for the area are meagre. The site has limited infrastructure, including a rest house and a boat. Limited funds are provided by the state, and at present, there is no funding support from the MoEF.
- 9. The meagre staffs have never been trained in wildlife management. They need exposure through visits to other wetland sites such as Chilika and Bharatpur.
- 10. Some locals participate in bird ringing programmes; other than this, there is no participation of the public.
- 11. A complaint handling system is operational, but it is not responsive to individual issues. The follow-up provided is limited.
- 12. No livelihood issues are addressed by the PA management. The people around the PA are currently cultivating in private areas and are engaged in uncontrolled fishing. There is no mechanism in place to address their livelihood issues.
- 13. The visitor services and facilities are not adequate for visitors. There is no mechanism for assessing the expectations.

- 14. There are several species of bird, but there is no means to monitor the trends of species richness and abundance.

C. Actionable Points

- 1. The tremendous pressures on the site (the rights of the local people, the influence of the huge population in the immediate surroundings of the sanctuary and their cattle population, basic issues of settlement, poaching, hunting, fishing, crop cultivation, etc.) need to be reduced.
- 2. A survey and record of rights which is in progress needs to be expedited, and a policy decision on settlement of rights needs to be taken. An area-specific mechanism that will dovetail the people's needs with long-term conservation goals needs to be evolved.
- 3. Urgent steps need to be taken to develop a science-based comprehensive revised management plan in consultation with experts in hydrology, the fauna and wildlife management, involving stakeholders.
- 4. The advisory committee needs to be formed immediately so that the stakeholders can participate in the planning process.
- 5. After the settlement of rights, habitat restoration programmes need to be undertaken.
- 6. The site needs an effective protection strategy, to be implemented with the requisite number of staff members in the PA. Urgent steps need to be taken to appoint the vacant positions among the PA staff.
- 7. The land ownership problem needs to be resolved immediately so that the conflict involving bird poisoning and capture can be resolved.
- 8. There are a number of sites around the PA that support birds, and thus concerted efforts are called for to integrate the site into the wider network in the landscape.
- 9. Adequate resource allocation and timely release of funds are needed for effective management. The meagre human and financial resources must be augmented immediately.
- 10. The meagre staffs have never been trained in wildlife management. They need exposure through visits to other wetland sites such as Chilika and Bharatpur.
- 11. Implementation of a scientifically sound system with the active involvement of the local community under the leadership of a motivated and well informed manager could improve the situation.
- 12. Eco-tourism is one of the major initiatives that could address the livelihood issues of the resource-dependent communities.
- 13. Guides are available, but an institutional mechanism needs to be planned and put in place for establishing long-term collaboration. A support mechanism needs to be instituted as in Keoladev National Park, Bharatpur. A good interpretation centre will add to the tourism value.

Nakti Dam Bird Sanctuary, Bihar
Evaluation Year, 2012-2013

A. Management Strengths

- 1. Nakti Dam Bird Sanctuary, along with Nagi Dam Bird Sanctuary, has been designated an IBA on the basis of criteria A4i and A4iii. Criterion A4i is satisfied in view of the fact that about 1600 endangered bar-headed geese (*Anser indicus*) have been recorded from this IBA, which amounts to 3% (the requirement being a minimum of 1%) of its total population in the biogeographic zone. Criterion A4iii is also met because the site is capable of attracting more than 20,000 birds.
- 2. In addition to thousands of local and migratory birds visiting the protected area (PA) in winter, many important Near Threatened species, such as the darter (*Anhinga melanogaster*), Oriental white ibis (*Threskiornis melanocephalus*), ferruginous pochard (*Aythya nyroca*) and black-bellied tern (*Sterna acuticauda*) are also found in the sanctuary.

3. The biodiversity of the area is further enriched by the barren, rocky terrain surrounding the water body, beyond the cultivation areas: dry land birds such as the Indian courser (*Cursorius coromandelicus*), Indian sandgrouse (*Pterocles exustus*), yellow-wattled lapwing (*Vanellus malabaricus*) and Indian robin (*Saxicoloides fulicata*) are also found in this area.
4. The villagers have a positive approach towards conservation, which can be used for various management interventions by formally recognizing and suitably integrating in the plan.

B. Management Weaknesses

1. In the absence of regulations governing the use of pesticides and fertilizers in the catchment, agricultural runoff may lead to pesticide poisoning and eutrophication.
2. Agriculture is practiced in the part of the submergence area that needs to be vacated.
3. Irrigation is the prime consideration of the Irrigation Department. However, retaining the proper quantity of water and other eco-restoration activities for habitat management are indispensable in the wetland eco system. There is no mechanism to integrate/optimize the two activities.
4. Illegal fishing is a threat to the waterfowl.
5. There is no scientific wildlife management plan for the PA.
6. There are no exclusive staff members for the management of the sanctuary, and the strength is inadequate.
7. The funding is negligible.

C. Actionable Points

1. A scientific management plan should be prepared and approval obtained from the CWLW.
2. Nakti Dam Sanctuary and Nagi Dam Sanctuary should be placed exclusively under one Officer/Wildlife Warden who will exclusively look after these Sanctuary. The staffing pattern of the sanctuary should also be reorganized, with adequate personnel exclusively deployed for the sanctuary work only.
3. Adequate funding to carry out all essential works must be ensured. A state-level steering committee should monitor the sanctioning of fund and timely allocation to PA managers.
4. The participation of the people should be sought for vigorous work on eco-development and eco-tourism initiatives.
5. Conflict of interests is generally prevalent in all wetlands. Hence, all stakeholders should be associated with planning management actions so as to reasonably address livelihood issues.
6. An institutional mechanism must be established for intense coordination between the Irrigation Department and Forest Department in resolving issues over any competitive use of water and the habitat.
7. An effective and professionally designed interpretation, awareness and outreach programme should be developed to disseminate the values of the sanctuary to the people.
8. An eco-sensitive zone should be declared and a conservation strategy must be developed for the same.
9. Research and monitoring work should be prioritized and encouraged.
10. The avian and aquatic fauna as well as their habitat should be scientifically monitored by the management of the PA, with proper documentation.

Vikramshila Gangetic Dolphin Wildlife
Sanctuary, Bihar
Evaluation Year, 2012-2013

A. Management Strengths

1. The area is of very high conservation value. Apart from Gangetic dolphins, the site supports nearly 13 globally endangered bird species including the greater adjutant. The site has a very rich bird life. The gharial, smooth-coated otter, 1335 species of birds, 76 species of fish and 5 species of turtles have been reported from the area.

2. The Ganges is deep and wide in this part. The Farakka barrage is 145 km downstream of the sanctuary. Monadnocks (*rock islands*) induce large counter-current pools, which are the prime habitat of dolphins, at Sultanganj and Kahalgaon. Fish and crustaceans are abundant, supported by the existence of many side channels, in which fish spawn. All these render this sanctuary one of the best habitats for the endangered Gangetic dolphin (*Platanista gangetica gangetica*), which is present in good numbers.
3. Patna University and Bhagalpur University are close to the sanctuary and professors and scholars of these universities are carrying out research and survey activities in the sanctuary.

B. Management Weaknesses

1. The middle of the Ganges has been notified as a sanctuary. There is no buffer zone. Thus, the protected area is vulnerable without management of its ecological entities.
2. The sanctuary is under the control of Banka Forest Division, the headquarters of which are in the neighbouring district, at Banka. There is no separate staff for the sanctuary.
3. The PA has no management plan in place, and the resource allocation is scanty.
4. The area is highly prone to illegal fishing. Dolphins get caught in the gill nets used by the local fishermen. The fishing is not regulated strictly in terms of the mesh size of the net used in the outer channels.
5. Fish fry and fish eggs are collected upstream and in the side channels during the monsoon, reducing the stock of fish in the PA.
6. The movement of heavy boats is not regulated. A large number of other boats, especially motorized ones, are used for inland water transport and pose a threat to dolphins.
7. Large volumes of untreated sewage and pollutants are disposed of in Bhagalpur and Kahalgaon by discharging it into the sanctuary.

C. Actionable Points

1. The PA should be managed separately with an office and other infrastructure.
2. The staffing pattern of the sanctuary should be reorganized with personnel deployed exclusively for the sanctuary. Posting of trained staff members and an adequate number of watchers is required for patrolling.
3. At least three new fast boats need to be provided for patrolling.
4. Monitoring-cum-patrolling stations must be established.
5. Adequate financial resources should be allocated for management of the PA.
6. The river transport should be regulated.
7. The use of gill nets and collection of spawn must be banned.
8. The preparation and approval of a scientific management plan need to be carried out expeditiously.
9. Intense co-ordination with universities and institutions for research, survey and monitoring is required.
10. The buffer area and eco-sensitive zone should be declared.
11. The participation of the people in eco-development and eco-tourism initiatives needs to be ensured to address livelihood issues.
12. An effective and professionally designed interpretation programme should be developed to disseminate the values of the sanctuary to the people.
13. The effects of the disposal of waste water from the thermal power station at Kahalgaon need to be monitored.
14. The effects of sand dredging operations in the sanctuary need to be evaluated.

Udanti Wildlife Sanctuary, Chhattisgarh Evaluation Year, 2006–2009

A. Management Strengths

1. The site has a management plan.
2. The site is fully integrated into the wider network/ landscape. The area, along with Sitanadi WIS, is proposed to be designated as a new tiger reserve.
3. The NGO Global Tiger Patrol has provided two Gypsies. One of these is used by the DFO, and the other is used by the ACF. WTI supports research on the wild buffalo.
4. The state government has provided resources for conservation of wildlife. Funds are also made available from the 12th Finance Commission.
5. The performance of the staff is linked with the management objectives of the PA.
6. Community-based tourism takes care of some aspects of livelihood, such as stitching of leaves into cups and plates for sale by the local people.
7. The expectations of many visitors are met.

B. Management Weaknesses

1. The site has considerable human and biotic interference, especially from the population of the enclave.
2. The sanctuary does not have any zonation plan.
3. The management plan covers the period from 2000–2001 to 2009–2010 is not comprehensive.
4. There is limited planning and monitoring of habitat restoration programmes.
5. The site has an ad hoc protection strategy. This strategy is general in nature and is limited by the poor staff strength and non-availability of arms and communications facilities.
6. The staff work with limited resources and perform duties not linked to management objectives.
7. Resources are allocated to the PA management, but they are not prioritized according to the management objectives.
8. The allocation of resources fluctuates, and resources are not always released in time.
9. There is only one trained Forest Guard in wildlife management.
10. The participation of the public is limited to some areas and to some aspects.
11. Complaints are entertained, but follow-up is limited and is not systematic.
12. The documents made available to the public are general in nature and are not linked to management accountability or public assets.
13. The facilities available for visitors are limited, and the interpretation centres are not properly organized.
14. Most of the species are declining, and some have reached a critical stage. The plant communities are generally stable and may sustain themselves, but the status of wild animals is a matter of concern.
15. The expectations of visitors are met in terms of landscapes and vegetation but not in terms of sightings of wild animals.
16. Only key neighbourhood communities are supportive of the management.
17. There is some management activity, but deterioration continues.

C. Actionable Points

1. The threats and values need to be monitored and assessed properly.
2. The extensive human and biotic interference needs to be resolved as soon as possible by relocating the population of the enclave.
3. The site needs to be categorized properly into zones.

4. A science-based, comprehensive management plan needs to be prepared immediately.
5. Habitat restoration programmes need to be on wider scale.
6. An effective protection strategy with provision of arms and communication facilities to the staff need to be implemented.
7. Adequate resources and trained staff members need to be ensured urgently.
8. The complaints handling system should be made more effective.
9. The visitor facilities and services need to be improved.
10. Steps need to be taken on a priority basis to determine the cause of the decline in the biodiversity at the site, and management-related trends need to be evaluated properly immediately.

6

Semarsot Wildlife Sanctuary, Chhattisgarh Evaluation Year, 2006-2009

A. Management Strengths

1. The proposal to expand the protected area (PA), drawn up by the Wildlife Institute of India (WII), Dehradun, in their PA network report has been followed up for establishing an elephant corridor.
2. Most of the personnel of the sanctuary are allocated for management objectives.
3. Resources are explicitly allocated towards achievement of specific management objectives.
4. A coordinated system is in place and responds effectively to most complaints.
5. Livelihood issues are addressed through programmes of EDCs such as providing training for making smokeless chulhas, clipping machines and agarbatti sticks.
6. The villagers cooperate with the park management in controlling fires and protection of the forests.

B. Management Weaknesses

1. Threats and values have been generally identified but not systematically assessed and monitored.
2. The site has extensive human and biotic interference. Due to the presence of 51 enclaved villages with 30,000 humans and 19,000 cattle, the biotic pressure is extensive. Due to this extreme biotic pressure, only the interior areas safeguard biodiversity values.
3. The site has been identified correctly but not systematically categorized with proper zonation plan.
4. There is no management plan for the sanctuary. The previous management plan expired in 2006-2007. A new management plan is not yet in place.
5. Habitat restoration programmes have limited planning. Monitoring is also not carried out systematically.
6. The protection strategy is comprehensive but not very effective due to the limited staff and Naxalite influence in some areas.
7. Resources are allocated for management of the PA, but the priorities are not very rational.
8. The financial allocation is satisfactory, but the human resources are limited and funds are not always released in time, especially for plantation work.
9. No resources are provided by NGOs for park management or improvement.
10. No officer or staff member of the sanctuary is trained in wildlife management.
11. Complaints received through various sources are dealt with appropriately, but no complaint box has been opened in beat or range offices.
12. The evaluation and monitoring are general in nature and are not technically designed. They are limited in scope.
13. In the absence of proper facilities and poor sightings of animals, the expectations of visitors are generally not met.

14. No specific effort has been taken up by the park management to conserve the cultural heritage.

C. Actionable Points

1. The threats and values need to be monitored and assessed properly.
2. The extensive human and biotic interference need to be resolved as soon as possible by relocating the 51 enclaved villages.
3. The site needs to be properly categorized into zones.
4. Immediate steps need to be taken to develop a comprehensive science-based management plan for the site as there has been no management plan in place after 2006–2007.
5. The site needs an effective protection strategy.
6. Given the accessibility status, the financial resources are satisfactory, but the staff strength needs to be increased.
7. The contribution of NGOs to the management of the PA should be enhanced.
8. Adequate funds and resources should be released in time.
9. More trained frontline staff members are needed to manage the PA.
10. Complaint boxes in the range offices need to be opened.
11. The visitor facilities and services need to be improved.
12. Specific efforts need to be made by the park management to conserve the cultural heritage.

7

Barnawapara Wildlife Sanctuary,
Chhattisgarh
Evaluation Year, 2009–2010

A. Management Strengths

1. The Sanctuary was declared a game reserve in March 1971 and known for its rich faunal values since British period.
2. There is a management plan. The first plan, by Mr. R.N. Saxena (1989–1999), is comprehensive and provides good insights into the values. The second Plan was by Mr. K.R. Ukey (1999–2009). The revision of the current plan has been outsourced to WWF.
3. The site safeguards large number of threatened biodiversity values.
4. Habitat restoration programmes are generally well planned and monitored.
5. There is an overall strategy for protection, but the area should have been treated as critical wildlife habitat (as per court directives) and there should be policies on recognition of forest dwellers' rights.
6. The existing measures to address human–wildlife are effective.
7. The financial resources are adequate for the site. The overall infrastructure has improved with the development of additional resources through the finance commission, improvement of forest villages, NREGA, etc.
8. A coordinated system logs and responds effectively to most of the complaints.
9. Substantial livelihood issues are addressed by the management of the protected area (PA). There are Forest Development Agencies (FDAs) at the periphery and considerable rural development activities in the forest villages.
10. The visitor services and facilities are of fairly good quality and enhance the PA values. The expectations of most visitors were met. Good number visitors come to the site and considerable amount of information is available through the Internet and brochures. Nature interpretation centre and tourism facilities are also good. The peoples are supportive to the management of the PA and there are excellent opportunities for their becoming partners in eco-tourism.
11. Wild animal populations are estimated regularly. Censuses are carried out in which volunteers are involved and reports on the populations of wild animals are available to the public. The populations of most of the threatened/endangered species are increasing, and most others are stable.

12. Turturia (sixth century temple) is located within the park. There are plans to focus on cultural heritage sites such as Shirpur, Laxman Temple, Panchayatan, Shivari (Shabari) Narayan, Buddha Vihar, Narayan Vihar and Girodhpuri.

B. Management Weaknesses

1. The site has some human and biotic pressure due to threats, such as the presence of domestic cattle, mono-cropping of old Teak plantations, Forest Development Corporations (FDC) plantations, etc.
2. The site has been identified correctly, but it has not been systematically categorized because the area reconciliations are still not complete.
3. The site does not have a revised and comprehensive management plan.
4. There are few, if any, opportunities for stakeholders to participate in the planning process. The institution of a sanctuary advisory committee as mandated under section 33(b), Wildlife (P) amendment Act 2002 has not been implemented. Honorary Wardens have also not been appointed and thus the opportunities for participating in planning are limited.
5. Habitat restoration programmes are ad hoc, in response to shortages of water, fodder and forage and for prevention of forest fires.
6. The human resources available at the field level are inadequate. Against a total of 45 beats, only 16 are manned. There has been no recruitment at the Forest Guard level for the last 15 years. Additional vehicles are required for patrolling.
7. NGOs contribute nothing to the management of the site.
8. No formal training in wildlife management has been provided at any level.
9. The deterioration of cultural heritage continues.

C. Actionable Points

1. Threats such as the presence of domestic cattle, monocropping of old Teak plantations and FDC plantations need policy directives. Relocation of villages needs prioritization and concerted efforts.
2. Reconciliation of the area into core, buffer, tourism and eco-development zones needs to be implemented as soon as possible.
3. The draft management plan, which is under revision, need to be finalised urgently.
4. An advisory committee that will ensure that stakeholders (such as agencies responsible for rural development, tribal development and tourism) participate in planning is needed. Honorary Wardens need to be appointed.
5. Habitat restoration programmes need to be improved to augment water resources, address shortages of forage and fodder and control forest fires.
6. The human resources at the field level need to be augmented immediately. Additional vehicles are required for patrolling.
7. Attempts should be made to identify active, capable NGOs from the area that are willing to assist with the conservation programmes of the park.
8. The site needs staff members who are trained in wildlife management.
9. A focused involvement of women is needed to address livelihood issues.
10. Visitors need to be educated to appreciate the wildlife/wilderness and indulge in responsible tourism. Eco-tourism and nature interpretation require specialized skills. The signage along the approach roads needs to be improved. Better coordination with the Tourism Department is needed.
11. Vegetation monitoring plots are recommended for long-term planning because monitoring of vegetation is lacking.

Guru Chasidas National Park, Chhattisgarh Evaluation Year, 2009–2010

A. Management Strengths

1. There is a draft management plan. Prior to re-organization, the management plan for the erstwhile Sanjay National Park applied to this area. Draft Management Plan 2001–2011 is under revision. Scrutiny of the new draft plan indicates that the guidelines issued by WII are being followed and is well written.
2. The site safeguards a large number of threatened biodiversity values. There are reports of tiger, leopard and elephant and also a number of other vertebrate animals in the area. Populations of two species of vultures have also been reported. The site is also rich in terms of plants (about 618 plant species).
3. Few cases of conflicts have been reported and these conflicts have been overcome by paying adequate compensation in time.
4. The site is integrated fairly well into the PA network within landscape. The protected area (PA) is contiguous with forested areas of Korea Forest Division, Tamor Pingla and Semarsot wildlife Sanctuary (WLS) and with Sanjay and Bandhavgarh national parks, in Madhya Pradesh. It is connected to Palamau in Jharkhand.
5. In terms of NGO contributions, attempts were made to get help from WPSI for nabbing a person involved in poaching and Wildlife SOS helped in the process of developing information network to a limited extent.
6. Systematic monitoring of the populations of tiger and elephant has been going on since 2005. The regular monitoring system introduced by the Park Director is laudable. The fire management information system (FMIS) generates forest fire incidence maps.
7. The recent reports of three tigers (one male and two female) and the marginal increase in sloth bear population are encouraging trends. Recently generated data indicate that the flora is rich.
8. The biological community is considered vibrant and healthy and sufficient to support a rich biodiversity. There is good regeneration of bamboos and Sal.
9. Eight villages have already given their consent for relocation and a proposal for one village has already been sent to the state for action. This is a small step, but it is in the right direction. The villagers within the park are reasonably supportive and not hostile.
10. The rock paintings, Sidh Baba Temple, Gangi Rani Cave are the sites of cultural importance. Chule Falls and the origins of Gopad and Hasdeo rivers are also potential sites.

B. Management Weaknesses

1. The site is under human and biotic pressure because of the presence of 35 revenue villages inside and 43 villages within a 5 km radius of the PA. About 15,000 cattle are owned by the people in these 78 villages, of these, about 10,000 are in the villages within the PA. These villages also depend on the natural resources for various purposes.
2. The site has been identified correctly but not systematically categorized.
3. A draft management plan exists, but it is not comprehensive.
4. A PA advisory committee, which is a statutory requirement, is not in place. Thus the stakeholders do not have an opportunity to present their views. The participation of villagers is limited to habitat improvement works.
5. The site has an ad hoc protection strategy. A tiger monitoring and elephant tracking system is in place, but the site has only five Range Forest Officers with supporting staff. They are reportedly handicapped and do not have vehicles to implement the protection strategy properly.
6. There is no active local NGO.
7. Considering the size of the park and the challenges it faces, the present strength of the staff is not adequate.
8. None of the staff are trained in wildlife management.
9. No complaint register is maintained.
10. No facilities are available for visitors inside the PA. Therefore there are no visitors to the park even from the local area. The draft plan envisages sound eco-tourism programmes to promote public support for conservation.

- 11. There is some management activity, but deterioration of cultural heritage continues.

C. Actionable Points

- 1. There is a high level of biotic interference almost throughout the entire area. The attempts made to minimize the impacts are noteworthy, but they need to be more focused on removal and rehabilitation of villages. There is scope for mitigation of conflicts by way of relocation/settlement and eco-development activities.
- 2. The core, buffer, tourism and eco-development zones prescribed in the draft management plan need be implemented as soon as possible.
- 3. The draft management plan, which is under revision, needs to be finalized as soon as possible.
- 4. An advisory committee is needed to ensure that stakeholders such as the agencies responsible for rural development, tribal development and the tourism industry participate in the planning process.
- 5. The site needs an effective protection strategy to be implemented through an adequate staff and facilities.
- 6. The site does not have vehicles in the field. There are two Gypsies that are used by the Park Director. They are pretty old and need to be replaced. The RFOs and field staff have practically no vehicles for patrolling and other management-related work. The (wireless) communication system can be activated with a little input.
- 7. Attempts should be made to identify active capable NGOs from the area that are willing to assist with the conservation programmes of the park.
- 8. Support in terms of human and financial resources (allowances for spending nights in the park, field gear such as raincoats, rucksacks, water bottles and shoes, free rations given when camping inside) is needed . An officer with public relations capabilities and a social scientist are suggested for relocation of villages. There is a need to have research staff of good scientific track records with Universities, Scientists and NGOs.
- 9. A one-week training programme based on a well planned syllabus is suggested for the park staff. The curriculum could include an introduction to biodiversity at varied levels, qualitative and quantitative assessment thereof, estimating the populations of vertebrates, monitoring habitats and animals, identification of mammal, bird, reptile, amphibian, butterfly and plant species, health-monitoring and post mortem procedures, habitat assessment, wildlife rescue and rehabilitation, use of field equipment and Central and state rules and acts relevant to forests and wildlife.
- 10. The revival of EDCs is recommended for the participation of the public in the management of the PA.
- 11. An exclusive website highlighting the conservation value of the area is needed. The presently available brochure is outdated and needs to be improved to provide information to the public.
- 12. The complaints handling system needs to be made effective by maintaining a complaints response book.
- 13. The visitor services need to be improved on a priority basis.
- 14. The rock paintings, Sidh Baba Temple, Gangi Rani Cave are the sites of cultural importance. Chule Falls and the origins of Gopad and Hasdeo rivers are also potential sites. Specific conservation plans for these sites are recommended.

Kanger Valley National Park, Chhattisgarh
Evaluation Year, 2012-2013

A. Management Strengths

- 1. The biodiversity of the area is very rich. The area lies in the transition zone between two vegetation types and has unique geomorphological features. There are 533 species of plant, of which 43 species are rare and 30 are orchids.
- 2. The 200 km² of the national park (NP) is ecologically contiguous with the forest areas of the adjoining forest divisions, as a result of which the effective habitat area has been increased. The canopy is dense and contiguous, and habitat improvement measures are not required.
- 3. Cases of cattle killing and crop depredation have not been reported in the last 3 years.

B. Management Weaknesses

1. There is one forest village inside the park (with a human population of 503). There is also another village, which has encroached upon the park, with a livestock population of about 2300. There are 48 villages at the periphery of the park, and they adversely impact the resources of the park.
2. There is a severe problem of insurgency, which creates a fear psychosis among the staff. Patrolling camps are manned only during the daytime, and there are certain areas that are out of patrolling coverage.

C. Actionable Points

1. The fringe areas around the villages must be closely monitored for spreading of weeds. Native species should be planted and augmented.
2. The number of vacancies in the frontline staff is considerable and should be immediately filled up, preferably with locals.
3. There are considerable delays in the release of funds. This problem should be addressed.

Mahauadar Wildlife Sanctuary, Jharkhand,
Evaluation Year, 2006–2009

A. Management Strengths

1. The site has been identified correctly and systematically categorized with proper zonation plans.
2. The site has a management plan.

B. Management Weaknesses

1. The site has extensive human and biotic interference.
2. A management plan exists, but it is not comprehensive.
3. The site has an ad hoc protection strategy.
4. The personnel of the site are not well organized and do not have access to adequate resources.
5. Some resources have been explicitly allocated for PA management but not systematically linked to management objectives.
6. The resource allocation is ad hoc, and funds are never released in time. The resources are insufficient for most tasks.
7. NGOs contribute nothing to the management of the site, but opportunities for collaboration are not explored.
8. There are very few trained officers and frontline staff members at the site.
9. There is little or no participation of the public in the management of the PA.
10. There is no systematic approach to handle complaints.
11. No livelihood issues are addressed by the PA management.
12. Little or no information on the management of the PA is available to the public.
13. The visitor services and facilities are negligible.
14. There is little or no systematic evaluation or routine reporting of management-related trends.

C. Actionable Points

1. The values and threats need to be systematically documented and monitored.
2. The extensive human and biotic interference need to be minimized through effective participation of the public in the management of the PA.
3. A science-based comprehensive management plan needs to be prepared through a participatory process.
4. The site needs an effective protection strategy.

5. The contribution of NGOs to the management of the PA should be enhanced.
6. Adequate funds and resources should be released in time.
7. More trained frontline staff members are needed to manage the PA.
8. The complaint handling system should be made effective to improve the PA.
9. Systematic and routine reporting of management-related trends need to be brought in on a priority basis.
10. The livelihood issues of the resource-dependent communities need to be addressed by the management.
11. Information related to the management of the PA should be made available to the public.
12. The visitor services need to be improved immediately.
13. The management should prevent deterioration of the cultural heritage.

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Dalma Wildlife Sanctuary, Jharkhand Evaluation Year, 2006-2009

A. Management Strengths

1. The site has been identified correctly and categorized into core, buffer and tourism zones.
2. The management plan has been prepared through a detailed participatory process, with scientific input from all relevant quarters, including the Wildlife Institute of India.
3. The management plan has been updated from time to time with lessons learned and experience gained.
4. The site safeguards most of the plant species and a majority of the wild animal species.
5. Currently the stakeholders participate fully in eco-development planning and to a reasonable extent in management planning.
6. The management plan prescribes habitat restoration programmes.
7. The site has an effective protection strategy supported by EDC members.
8. The site is integrated into the broad landscape and serves as a refuge for endangered elephant population and as a green lung for the industrial city of Jamshedpur.
9. Resources are allocated towards specific management objectives.
10. There is a regular inflow of resources from NGOs such as WTI, Rashtriya Jana Seva Sanstha, Dalit Bikash Bindu and Rotary International.
11. Fifty percent of the local staff are trained through various on-the-job training programmes.
12. All the villages in the fringe areas have been covered by EDCs. The participation of the public is now comprehensive and systematic.
13. Major ecologically compatible livelihood issues are addressed through EDC programmes.
14. Information about major management activities is provided to the public through booklets and display boards.
15. The visitor facilities are well designed and help enhance the PA values and obtain the support of the public.
16. The populations of the sloth bear, wild pig and peafowl are increasing.
17. The general conditions of the forest have improved except in fringe areas.
18. Most of the threats have been successfully managed through the support of EDC members.
19. The Lord Shiva temple and the temple of the goddess Dalma Mai at Dalma attract pilgrims and tourists.

B. Management Weaknesses

1. Values and threats have been identified but not systematically monitored and assessed.
2. There is limited planning of reintroduction programmes. Only recently, some steps are being taken for reintroduction of cheetal.

3. The site has an effective protection strategy with the support of EDC members. The protection is limited after sunset because the area is affected by insurgency.
4. The staff strength and resources are inadequate. Resources are not released in time.
5. Complaint boxes are yet to be opened in all offices.
6. Some evaluation and reporting have been undertaken, but they are neither systematic nor routine.
7. Since the wild animal populations are small, the expectations of visitors are met only to a limited extent.
8. Conflict arise from stone quarry lease holders on the fringes.

C. Actionable Points

1. The values and threats need to be properly monitored and assessed.
2. Insurgency needs to be removed immediately for effective protection of the site.
3. The fluctuation of financial resources and shortage of human resources need to be addressed immediately.
4. Complaint boxes need to be placed in all offices for an effective complaint handling system.
5. The visitor services and facilities need to be improved.
6. Animal sighting and behaviour records need to be maintained at the major watch towers and hide.
7. The conflict with stone quarry lease holders from the fringes need to be sorted out immediately.

Hazaribag Wildlife Sanctuary, Jharkhand Evaluation Year, 2009–2010

A. Management Strengths

1. Most of the values have been systematically identified and assessed. The protected area (PA) has a long history of rich wildlife (hunting grounds of the Raja of Ramgarh/tiger trap).
2. The site has a comprehensive science-based management plan for a period of 10 years from 2005–2006 onwards and has been approved by the competent authority.
3. The site safeguards a large number of threatened biodiversity values.
4. In terms of stakeholder involvement, a state-level advisory committee is in place. At the eco-development level, management is consulting and involving villagers for protection/eco-development activities.
5. Habitat restoration programmes are generally well planned and monitored. There are ongoing efforts for habitat restoration, with emphasis on water harvesting and, to some extent, forage development.
6. Management activities have intensified significantly, with utilization of resources, over the last three years.
7. The resources made available by the state and Central governments are fairly adequate.
8. NGO support has been provided in many areas such as rescue of wild animals, providing them with health care, awareness generation and documentation. NEO Human Foundation, Adhikari Foundation for Nature Conservation, local colleges and universities have been involved.
9. The staff is trained in wildlife management.
10. Complaint boxes and suggestion boxes are placed appropriately related to the visitor facilities. Judging by the EDCs visited, attempts have been made to address livelihood issues such as supplying sewing machines to women, but these are limited in scope. The EDCs visited and press reports indicate that the local people are generally supportive of conservation.
11. Brochures, hoardings and signages are in place for visitors.
12. Cultural heritage assets such as Tiger Trap and Sarana (sacred groves) are protected and well maintained.

B. Management Weaknesses

1. There is extensive human and biotic interference at the site. Threats to the site have not ended but have grown worse. The “ex-reserve” forest (52 km²) is free from the rights but the other 134.25 km² of protected forest are

highly burdened with local rights. There are 89 villages within the inner and outer zones of influence of the sanctuary, with a total human population of about 70,000 and a cattle population of about 32,000. The management plan aims to mitigate conflicts but does not cover the basic issue of settlement adequately.

2. The site has been identified correctly but not categorized properly.
3. The site has an ad hoc protection strategy. The sanctuary is porous, and a national highway bisects it. There may be problems unless a strategy for the movement of wild animals across the national highway is evolved and put in place.
4. Few attempts have been made to integrate the PA into the network/landscape.
5. Cutting edge staffs, works under challenging situation; inputs by personnel are hampered due to 50% vacancies; it has been further aggravated by deteriorating law and order situation;
6. Little information on the PA management has been published or made available in the public domain.
7. There is some evaluation and reporting, but it is neither systematic nor routine.
8. There is no efficient monitoring system for assessing the biodiversity.
9. The expectations of serious wildlife lovers are not met.

C. Actionable Points

1. The tremendous pressures on the site, such as the rights of the local people, influence of the huge population in the inner and outer circles of the sanctuary and the cattle population, basic issues of the settlement, need to be relieved immediately.
2. Man-animal conflict emanates from lack of policy decision on collector's enquiry that is insensitive to long term conservation goal; within the legal framework, issue need to be revived.
3. The different zones of the site need to be demarcated clearly.
4. The bisection of the sanctuary by the national highways needs to be solved immediately so that the site may be protected effectively.
5. The potential for integrating the site with the wider ecological network is evident from the reports of transiting tigers/elephants. Focused efforts need to be planned to identify the movement routes and the interventions that are necessary to preserve/strengthen such routes. The proximity to Palamau and other forests is appreciated, and it is recommended that this site be connected to them.
6. The vacancies (50%) need to be filled immediately, and the law and order situation needs to be improved.
7. Habitat restoration needs to be carried out in a planned way to address shortages of food, proliferation of weeds, forest fires, etc.
8. The reciprocal commitment of protecting the habitat for supporting EDCs needs to be stressed. Incentives for good work and disincentives for laxity need to be planned and put in place.
9. A monitoring mechanism needs to be put in place to evaluate the management practices and improve the habitat. Permanent vegetation monitoring plots are suggested. Local youths and NGOs should be involved in estimating populations of animals, and the results should be made public.
10. The biodiversity values need to be assessed systematically and a monitoring mechanism put in place. The potential values of the biodiversity in the context of climate change need to be emphasized. Estimates of populations (the wild dog packs, for example) need scrutiny. Some populations seem to be declining and need immediate corrective measures.

Koderma Wildlife Sanctuary, Jharkhand Evaluation Year, 2012-2013

A. Management Strengths

1. The sanctuary is one of the significant wildlife reserves of the Chotanagpur plateau and holds elephant habitats and corridors. Palamu–Chatra–Koderma–Bihar border–Dumka is reported to be an elephant corridor. Koderma Wildlife Sanctuary falls in the middle of this route.
2. The habitat has the characteristic floral and faunal elements of the region, the forest type being Northern Tropical Dry Deciduous Forest. It has significant populations of wild animals and plants. Some species are reported to be endemic to this sanctuary and need further study.
3. The sanctuary is a significant watershed of the Photlahiya River.
4. The sanctuary is very important as it has the largest concentration of mica in the country.
5. The sanctuary can play an important role in research, recreation and environmental and nature education because of its close proximity to Vinova Bhawe University, teachers, scientists, scholars and students of which can significantly contribute. There are many local NGOs working in this area in wildlife conservation and the environment.
6. The sanctuary is very close to Koderma, one of the important places in Jharkhand. Hence there is immense scope/potential for wildlife tourism and nature interpretation.
7. Dhawajadhari Temple attracts a lot of pilgrims, worshippers and visitors. The surrounding forests have also become attained religious significance.

B. Management Weaknesses

1. The strength of the staff is inadequate. The staffs are not trained in wildlife management.
2. The area has a severe Maoist problem.
3. There are 18 villages inside the sanctuary. Even on the periphery, there are villages, especially on the Bihar side. As a result, the level of biotic interference is very high.
4. There were a large number of mica mines in the sanctuary area. They are now closed, as a result of which there is unemployment among locals, which in turn is increasing the biotic pressure on the sanctuary.
5. National Highway 31 passes through the sanctuary in the north–south direction, dividing it in two parts, eastern and western. The busy traffic is a big threat to the movement of animals.
6. The location of the sanctuary near Koderma and Tilaiya makes it vulnerable to encroachment and illicit felling, fuelwood harvesting, grazing, fires and biotic interference in many other forms.

C. Actionable Points

1. The new wildlife management plan, prepared for the period from 2011 to 2020, should be approved immediately by the competent authority after the deficiencies pointed out in this report are addressed.
2. The vacancies in the existing cadre should be filled up expeditiously. The cadre strength of the field staff should be increased as proposed in the draft plan.
3. Short-term training courses/programmes in wildlife management (planning, protection and monitoring) should be taken up at the division level for building the capacity of all the field staff members on top priority, which should inter alia use state-of-the-art spatial technology tools.
4. Censuses of animals, including elephants, should be carried out at specified intervals using proper techniques after appropriate training of the field staff, involving NGOs and the local people.
5. The sanctuary is short of patrolling vehicles, a good road network and modern equipment. The need for these is compounded by the Maoist problem in the area. Other equipment such as camera traps, computers, tranquilizing guns and binoculars should be provided to the staff on top priority.
6. Since there are a large number of villages inside the PA, programmes that address the livelihood issues are of

paramount importance for smooth management of the sanctuary. Hence eco-development committees should be made much more active, and proper funding should be ensured to sustain various activities.

7. Habitat restoration activities should be funded on a priority basis.
8. A protection plan should be prepared for preventing illicit felling, poaching and grazing and be implemented with the participation of villagers.
9. Eco-tourism, awareness building and environmental education programmes involving local villagers and NGOs should be implemented so that their cooperation is obtained for implementing conservation programmes.
10. An action plan to curb and end the menace of vehicular traffic on NH 31 should be prepared immediately in consultation with wildlife experts and implemented.
11. There are a large number of illicit distillers who make country-made liquor, which consumes a large amount of firewood. The liquor also attracts elephants. Hence strict control should be enforced by the district authorities.
12. An eco-sensitive zone should be declared around the sanctuary immediately, in compliance with the direction of the Hon'ble Supreme Court.

Sunebeda Wildlife Sanctuary, Odisha Evaluation Year, 2006-2009

A. Management Strengths

1. The site has a comprehensive (six volumes) management plan prepared as per scientific guidelines. The current plan expires at the end of 2006-2007. Revision of the management plan has started.
2. The site safeguards a large number of threatened biodiversity values.
3. There is stakeholder participation on issues such as censuses, eco-development programmes and awareness activities.
4. The major details of habitat restoration programmes are provided in the management plan and are undertaken accordingly.
5. The site has a comprehensive protection strategy.
6. The site is integrated fairly well into the network/landscape. There is a proposal to create a tiger reserve by expanding the sanctuary in the south to include a part of Khariar Forest Division.
7. The number of staff members very small, but they are explicitly working towards management objectives.
8. NGOs participate voluntarily in censuses and public awareness programmes.
9. There is a systematic approach to involving the local people in eco-development works, public awareness programmes, fire protection activities and gathering information.
10. Threats to the site are minimized in general through enforcement and the involvement of the public.
11. The expectations of visitors are met with respect to the landscape and floral conservation.
12. People who have been involved in eco-development and public awareness programmes are generally supportive of the management of the protected area (PA).
13. Though there are no planned efforts to preserve the cultural heritage, the general protection offered to the area has salutary effects in redressing the deterioration of assets.

B. Management Weaknesses

1. Values and threats have been identified but are not systematically monitored and assessed.
2. The site has considerable human and biotic interference, especially from the population of the enclave.
3. The site has a comprehensive (six volumes) management plan prepared along scientific guidelines, but it has not been formally approved yet.
4. Reintroduction of the barasingha was planned and carried out but no monitoring was done.

5. The site has a comprehensive protection strategy, but execution is restricted by the limited number of staff members.
6. There is human-wildlife conflict in terms of crop damage by wild pigs, bears and monkeys.
7. The existing resources are organized well, but these are inadequate compared with the requirements.
8. The contribution of NGOs is limited to voluntary participation in censuses and public awareness programmes.
9. The resources are insufficient for most tasks. For an area of 600 km², there are only 51 staff members and a budget of only about 30–40 lakh rupees for regular development, which are inadequate.
10. The site has no manpower trained in wildlife management.
11. Complaints are entertained, but they are not logged to ensure timely redressal.
12. A few livelihood issues are addressed to some extent through limited eco-development works. There are complaints from local villagers about loss of livelihood due to the establishment of the sanctuary.
13. Even though census figures show increases in the populations of most species, the evaluation team members did not see any wildlife. The reports of the local people also do not indicate that the position is good. The situation with the flora is reasonably good, but it cannot be conclusively stated that the faunal position is equally good.
14. The expectations of visitors are met with respect to the landscape and floral conservation, but hardly so with respect to wild animals.

C. Actionable Points

1. The threats and values need to be monitored and assessed properly.
2. The issue of extensive human and biotic interference need to be resolved as soon as possible by relocating the population of the enclave.
3. The comprehensive management plan needs to be approved as soon as possible.
4. The re-introduction of barasingha needs to be monitored properly.
5. The site needs more trained staff members for the management of the PA and for providing effective protection.
6. The human-wildlife conflicts in terms of crop damage caused by wild pigs, bears and monkeys need to be addressed immediately.
7. Adequate funds and resources should be released in time.
8. Some livelihood programmes are needed for the resource-dependent community.
9. Management-related trends need to be evaluated immediately.
10. The visitor facilities and services need to be improved.

Bhitarkanika Wildlife Sanctuary, Odisha
Evaluation Year, 2006–2009

A. Management Strengths

1. Values and threats have been systematically identified, assessed and monitored.
2. The site has been identified correctly and systematically categorized, with proper zonation plans.
3. The site has a comprehensive, science-based management plan prepared through the participatory process.
4. The management plan is routinely and systematically updated.
5. The site safeguards the large number of threatened biodiversity values.
6. Habitat restoration programmes are generally well planned and monitored.
7. Human-wildlife conflicts have been mitigated.
8. The site is integrated fairly well into the network/landscape.
9. Some resources (vehicle, equipment, building etc.) are organized and managed well, with access to adequate resources, with management objectives.

- 10. NGOs' contributions are systematically sought and negotiated for the management of some site-level activities.
- 11. The performance management of most of the staff members are directly linked to achievement of relevant management objectives.
- 12. A coordinated system logs and responds effectively to most of the complaints.
- 13. Information made available to the public provides detailed insights to major management issues.
- 14. All visitor services and facilities accord with the relevant protected area (PA) category and most of them enhance the PA values.
- 15. Management-related trends are evaluated systematically and reported comprehensively.
- 16. The populations of most of the threatened/endangered species are increasing, and most others are stable.
- 17. Most threats to the site have been ended.
- 18. The expectations of most visitors are met.
- 19. Most neighbours/communities are supportive of the management of the PA.
- 20. A planned approach to management is being instituted and the deterioration of assets is being redressed.

B. Management Weaknesses

- 1. Only few trained officers and frontline staff members have been posted at the site.
- 2. There is opportunistic participation by the public in some aspects of management of the PA.
- 3. Only few livelihood issues are addressed by the management of the PA.

C. Actionable Points

- 1. The site needs more trained manpower.
- 2. Participation by the public should be promoted for effective PA management.

Gahirmatha (Marine) Wildlife Sanctuary,
Odisha
Evaluation Year, 2006-2009

A. Management Strengths

- 1. Most of the threats to the site are well documented and periodically assessed.
- 2. The site has well-defined core and buffer zones.
- 3. The site has a comprehensive management plan based on scientific facts, but the plan was prepared mostly through departmental consultations.
- 4. Due to the protection offered to the country's territorial waters, the site safeguards a large number of biodiversity values.
- 5. The habitat improvement programmes with regard to the land area of the sanctuary are well planned and monitored.
- 6. The site is integrated fairly well into the network/landscape. The entire extent of the coastal waters, extending from the mouth of the Dharma River to the Mahanadi delta, with a width of 20 km, falls within the sanctuary.
- 7. Seventy-five percent of the resources are allocated for strengthening the infrastructure, patrolling and anti-poaching duties, which are the priority activities for the protected area (PA).
- 8. The resources are linked to priority actions, and most of the resources are made available in time.
- 9. The role of NGOs is mainly in the form of mobilization of public opinion and cattle immunization programmes.
- 10. The performance management of all the staff members is linked to relevant management objectives and activities.
- 11. A coordinated system logs and responds effectively to most complaints.

12. The information available to the public depicts clearly the area of the sanctuary, its zonation plan and major sites for control and activities.
13. Visitor facilities have been created in the form of eco-friendly tented accommodation and modest room accommodation, with natural observation shades.
14. Management-related trends are systematically evaluated and reported with respect to nesting of turtles, the main target species.
15. The numbers of wild pig and spotted deer in the land area of the park are reported to have increased.
16. The marine part of the sanctuary has good populations of turtles and dolphins, which were observed by the members of the evaluation team.

B. Management Weaknesses

1. All macro floral and macro faunal values have been generally identified, but monitoring on a regular basis is done with respect to a few only.
2. The site has some threats in the land area due to grazing and illicit collection of fuel wood. Deep sea trawling outside the protected area (PA) poses a threat to turtles. The illegal entry of fishing vessels, commercial poaching and the trade in endangered marine species has been significantly addressed inside the PA.
3. The site has a comprehensive protection strategy, but this strategy is not very effective due to the absence of proper seaworthy vessels.
4. All field-level personnel are explicitly allocated towards specific management activities, but their numbers are inadequate.
5. The staff and infrastructure require strengthening. One proper seaworthy vessel is a must.
6. Only one trained Forest Ranger has been posted at the sanctuary. Sensitization of lower-level staff members is provided by researchers from the Wildlife Institute of India working in the area.
7. Assets and infrastructure are documented in the asset report and management plan and these provide the basis of the management schedule. However there are constraints of funds for proper maintenance.
8. Since the number of nesting turtles has gone down recently, visitors have not been fully satisfied.
9. Some renovation of cultural heritage sites has been undertaken, but the funds available are inadequate to arrest the deterioration process.

C. Actionable Points

1. This current Management Plan is the first one, therefore an update is needed.
2. The significant pressures exerted by grazing, illicit collection of fuel wood, deep sea trawling outside the PA (which threatens turtles), illegal entry of fishing vessels, commercial poaching and the trade in endangered marine species need to be addressed on a priority basis. Most threats to the site have been controlled through orders and control, but some threats from missile firing need to be addressed.
3. The site needs proper effective protection strategy to be implemented using seaworthy vessels.
4. Adequate number of trained field personnel need to be provided.
5. There are opportunities for the participation of the public in some aspects of PA management. There is ample scope to expand these.
6. There is a system for addressing complaints and taking follow-up actions. However, a complaint box needs to be placed in each Range Office and Beat Office and periodic meetings need to be organized to explain follow-up actions.
7. The constraints faced with respect to funds for proper maintenance of assets and maintaining the cultural heritage need to be addressed immediately.
8. Some neighbours and local communities are supportive to the PA management, but they want management models to be changed.
9. Steps need to be taken to determine the cause of decline in the population of nestling turtles.

Chandaka-Dampara Wildlife Sanctuary, Odisha Evaluation Year, 2009-2010

A. Management Strengths

1. The core, buffer and tourism zones have been defined well.
2. There is a management plan for the sanctuary.
3. There are comprehensive strategies and consistent efforts have been made during the last two decades for protection. Anti-poaching squads are also at strategic places for the protection.
4. The site is integrated fairly well into the network/landscape. A corridor with forests across river Mahanadi is being in use southward.
5. Despite the vacancies in the posts of Forest Guards, the sanctioned strength and number of personnel in position are very satisfactory.
6. The resources have improved recently with the introduction of compensatory afforestation, finance commission, eco-tourism funds, etc.
7. The sanctuary management is able to draw on substantial resources.
8. The resources are sufficient for most of the tasks.
9. A large number of trained officers and frontline staff members have been posted at the site.
10. The performance management of most of the staff members has been directly linked to achievement of relevant management objectives.
11. Attempts have been made to involve the people living on the fringes of the site in mitigating the impacts of tourism through EDCs. These attempts are laudable.
12. The prevention and mitigation of man-animal conflicts along the boundary with an urban area have been excellent.
13. The information available to the public provides detailed insights into major management issues.
14. All visitor services and facilities accord with the relevant PA category and most of them enhance the PA values.
15. Estimation and monitoring of wildlife populations are carried out in a participatory mode.
16. The expectations of most of the visitors are met.
17. Most of the neighbours are supportive to the PA management.

B. Management Weaknesses

1. Threats and values have been identified, but they are not systematically assessed.
2. The key to habitat restoration within the core zone is restricting biotic interference, whereas in the draft management plan the major thrust is on habitat improvement.
3. Large number of vacancies of posts of Forest Guards, (18 posts are vacant out of 44 sanctioned).
4. Loss of human life and property has been contained, but because of the pressures on the fauna, there is considerable scope for improvement.
5. There is a sanctuary advisory committee in place, but it does not meet frequently.
6. The size of the resource-dependent population is significant and thus meeting livelihood issues is a challenge.

C. Actionable Points

1. The values and threats of the site need to be assessed systematically.
2. There is a high level of biotic interference almost everywhere in the area. The attempts made to minimize impacts are noteworthy, but they need be more focused on removal and rehabilitation of villagers. The threat mitigation is effective, but there is scope for improving the co-ordination in rehabilitating the hamlets within the core zone and restoring the habitat.
3. The draft management plan needs to be scrutinized and approved by the competent authority after due

consultations with the statutory committee. There is only one draft plan for the period from 2007–2008 to 2016–2017. This too has lacked the approval of the competent authority for the last three years. Further, the plan needs to be in tune with the guidelines of the WII.

4. With Nandan Kanan Zoo and regional plant resource centres being located close to the site, there is scope for reintroduction of animals and plants such as sambar, crocodiles and otters.
5. The northern corridor needs to be strengthened to have a wider network of PAs.
6. Staff members need to be appointed for nature interpretation and education.
7. Specialized skills need to be developed/ strengthened. Senior-level staff members need to be exposed to recent wildlife management techniques.
8. According to the records, since 2001 the elephant population has ranged between 58 and 67 individuals; however, it is still being sustained mainly in the fringe area, as the core is not fully secure. A greater emphasis on habitat improvement in general and fodder/forage in particular is needed.
9. With the region having very rich cultural sources, those within the PA have not been studied/ documented thoroughly. There is scope for conducting an in-depth study by an expert.

Hadgarh Wildlife Sanctuary, Odisha Evaluation Year, 2012-2013

A. Management Strengths

1. The biodiversity is rich, and the sanctuary has habitats for tigers and elephants. The forest types include Northern Tropical Deciduous Forest and Dry Deciduous Forest and are characterized by tree species such as sal, asan, dhaura, harida and baheda. Thirty species of mammal, 38 species of bird and 15 species of reptile and amphibian have been identified in the sanctuary.
2. Hadgarh Wildlife Sanctuary (WLS) has linkages with Similipal Forest/Tiger Reserve (Mayurbanj District) and Kuldiha WLS (Balasore District). The movement of animals, specifically from Similipal to Kuldiha, is through Hadgarh. The sanctuary constitutes a part of the Similipal–Hadgarh–Kuldiha elephant corridor.
3. The Hadagarh reservoir, which collects the water of the Salandi River, inside the sanctuary, and its tributaries, provides perennial sources of water to the wildlife.
4. The sanctuary is a very good habitat for wildlife.
5. The sanctuary is a part of the Mayurbhanj Elephant and Biosphere Reserve.

B. Management Weakness

1. The numbers of the field staff and wildlife-trained staff are inadequate.
2. The infrastructure is inadequate in terms of patrolling vehicles, motorcycles, staff amenities, communication equipment and protection camps. The tourist facilities are meagre (there are only three suites and there is a lack of funds for eco-development. The community support is poor.
3. There is no unified command at the managerial level for the entire sanctuary. The sanctuary is managed by two different divisions. Although a sanctuary management plan has been prepared for the areas in the Keonjhar portion, there is no such plan for the Karanjia (Mayurbhanj) part.
4. The sanctuary has an inadequate patrolling road network. This significantly impedes strict supervision, protection and monitoring work in sizeable chunks of areas in the interior.
5. There are 13 settlements, with 4354 inhabitants, in the Keonjhar part and 16 settlements in the Karanjia part of the sanctuary. Under the FRA, forest rights have been recognized in 472.606 ha in Keonjhar and 101.71 ha in Karanjia. There are mining leases just at the periphery that have been stopped due to an order of the Hon'ble Supreme Court.

C. Actionable Points

1. The two parts of the sanctuary, administered by two separate divisions, situated in different districts, should be

- brought under a single PA Manager immediately, with a scientific wildlife management plan covering the whole sanctuary.
2. The sanctuary suffers from inadequate staffing and infrastructure. These deficiencies should be addressed by the state government in a scheduled manner.
 3. The sanctuary suffers from biotic interference due to 13 settlements inside it. Further, it is affected by encroachment by villagers displaced by the Hadgarh dam from two hamlets. A plan should be drawn and implemented to free the sanctuary from this interference in a phased manner.
 4. There are a number of chromite mines in the periphery of the sanctuary, the operation of which has been suspended due to an order of the Hon'ble Supreme Court. Hence, in compliance with the Hon'ble Supreme Court's order, an eco-sensitive zone around the sanctuary should be declared without any delay.
 5. There is an immediate need to draw up and implement a sound protection plan for prevention of grazing and elimination of any possibility of hunting. Building up a network of informers with provisions for appropriate remuneration should be part of this plan.
 6. There are some instances of damage caused to crops and property by elephants and wild boar. Although power fencing has been erected at places, the fences need continuous maintenance. The involvement of villagers is a sine qua non for them to be effective. Eco-development works are essential for getting community support, which is otherwise lacking. Sufficient funds should be provided for these works.
 7. Short-term training courses/programmes in wildlife management (planning, protection and monitoring) should be conducted at the division level for building capacity among all the field staff as a top priority. State-of-the-art modern spatial technology tools inter alia should be used.
 8. The communication equipment and arms deposited earlier due to Maoist threats need to be reconsidered on the present ground reality at the appropriate level.
 9. Providing suitable insurance cover with adequate incentives and a reward system is essential for enhancing the efficiency of the staff.
 10. There is no effective programme for awareness generation, interpretation and education on wildlife/conservation. Such programmes should be carried out to make people aware of the importance and value of conservation.
 11. The proportions of the areas of the Mayurbhanj part and the Keonjhar part of the sanctuary, not in agreement with their stated areas, this need to be verified/ rectified.

Chilika (Nalabana) Wildlife Sanctuary, Odisha Evaluation Year, 2012-2013

A. Management Strengths

1. The sanctuary has large, undisturbed mud flats, which support very large congregations of wintering birds in the Chilika lagoon.
2. Due to the complete protection that has been afforded, the sanctuary holds a vast genetic pool and large fishery resources and thus has an important and major source population for fisheries.
3. The sanctuary is representative of the structural and functional diversity of Chilika lagoon and highlights its ecological and physical features.
4. Chilika lagoon is the first Indian wetland of international importance to be brought under the Ramsar Convention, which was done in 1981. However, it was being subjected to unregulated use, and so it was brought under the Montreux Record (threatened Ramsar site) in 1993. Due to innovative and exemplary remedial efforts undertaken by the CDA and the state government, including declaration of the protected area (PA) as a closed area, Chilika was removed from the Montreux Register with effect from 11 November 2002. In the process the CDA, which has won many international (Ramsar Wetland Conservation Award) and national awards, has come out as a very strong and

technically competent institution in the region for championing the cause of wetland and environment conservation and ecosystem-supported development.

5. The close linkage with the CDA provides high-quality scientific and managerial support.
6. The presence of the Irrawaddy dolphin gives Chilika a unique position in the conservation arena.

B. Management Weaknesses

1. The sanctuary does not have a dedicated managerial position. It is managed by the DFO, Chilika Wildlife Division, who has many islands and reserved forests under his jurisdiction, in addition to the sanctuary. The sanctuary does not have an exclusive Warden and Assistant Warden, which weakens the focus on sanctuary management.
2. While the DFO is professionally trained in wildlife management, the staff are inadequately trained in both skills and knowledge of wildlife management. While the assistance of the CDA and BNHS does expose the frontline staff to the techniques of bird identification and dolphin estimation, the larger issues confronting the conservation and management of the sanctuary require additional training and exposure.
3. There is inadequacy in district-level coordination due to the spread of the jurisdiction of the DFO, Chilika Wildlife Division, across three districts (Puri, Khurda and Ganjam). Coordinating with the administration of three districts and the various forestry and wildlife works leave very little time for the DFO to concentrate on the many issues related to effective sanctuary management.
4. Conservation efforts are severely threatened by unregulated movement of petrol/kerosene/diesel-powered boats and people in the lagoon, without appropriate regulations or restrictions set by the Forest/Wildlife authorities in terms of disturbing the avifauna and aquatic fauna.
5. The effluents discharged in the lagoon by 52 rivers and rivulets bring a large quantity of pollutants and silt that are harmful to the ecosystem.
6. Prawn culture and fisheries are the major sources of livelihood of the local people. However, the greed to make more money and the influence of vested interests promote illegal practices, including degradation of the mudflats by deepening and putting up extensive nets in the water, causing a severe obstruction to the movement of aquatic fauna, including dolphins.
7. The ecosystem of Chilika lagoon is known for its large fishery resource, which is reported to produce 14,000 million tons annually and sustains more than
8. 2,00,000 fisher folk living in 132 villages along the shore and on islands who are heavily dependent on the lagoon for their livelihood. This places a tremendous pressure on the ecosystem. In the past, illegal prawn gheries severely affected the wetland.
9. The dialogue between the management of the sanctuary and fishing communities is inadequate, and there is almost no participation of the locals in management, which are significant weaknesses.
10. An over-dependence on the CDA for education and interpretative programmes without the active participation of the PA management weakens the purpose of focusing the conservation values of the PA and obtaining the support of local people.
11. The sanctuary management is weak in dedicated, sanctuary-run monitoring and research programmes. Although the CDA has an excellent monitoring programme for the lagoon, the sanctuary needs to internalize regular monitoring of many management issues confronting the sanctuary.

C. Actionable Points

1. The sanctuary may be placed under the exclusive control of a Wildlife Warden (ACF), with an Assistant Wildlife Warden (RO), under the overall charge of the DFO, Chilika.
2. The RO may undergo training at the Wildlife Institute of India.
3. Infrastructural support should be provided immediately in the form of at least five fast boats and five more patrolling stations with adequate staff support.
4. The staff should be insured for health and against accidents.
5. The sanctuary is a very small portion of the lagoon and needs to be strengthened by declaration of more areas of the lagoon that are rich in biodiversity as part of the sanctuary or as conservation reserves for meaningful conservation. The idea and feasibility of having mini core areas may be explored.
6. The eco-sensitive zone should also be declared immediately, in compliance with the order of the Hon'ble Supreme Court.

7. The organic relationship between the CDA and the sanctuary management needs to be highlighted, and the CDA-initiated integrated area development programme should be actively pursued to bring in different agencies together for the common goal of integrating conservation and development of the entire Chilika lagoon.
8. The CDA may be empowered to regulate various activities in the entire lagoon, with enabling support from the district administration and Forest Department.
9. The sanctuary management should immediately start a dialogue with the neighbouring communities with the view of disseminating the values of the sanctuary and assisting the communities with livelihood security activities. Small community-based fishery resource use programmes should be devised and implemented with the view of stocking the fishery resources, and the sanctuary management should take proactive parts in these programmes. Since such programmes are promoted by the CDA, the PA/Wildlife Division may take them up within their areas.
10. An effective and professionally designed sanctuary interpretation programme should be developed to disseminate the values of the sanctuary to the people. Instead of creating a separate interpretation centre, the facilities created by the CDA, as an active partner, may be utilized.
11. The sanctuary management, along with the CDA, should discuss with the Tourism Department the organization of a community-based eco-tourism programme in the lagoon as well as in the sanctuary with the objective of regulating the movement of people and boats in the area and improving the livelihoods of locals. This should inter alia include the procedure for registration of boats with the Forest Department for movement within eco-sensitive zones.
12. The 11 KV power line going to village Brahmapura may be insulated to prevent accidents to migratory birds.
13. The sanctuary management should maintain records of the various aspects of the sanctuary. The CDA has 10 monitoring stations, one of which is the sanctuary. The sanctuary management should collect relevant information from the CDA and begin maintaining its own records.
14. Conversion of mudflats to prawn farms and reclamation of wetlands as a result of which they become hard ground must be prevented.

Mahananda Wildlife Sanctuary, West Bengal Evaluation Year, 2006-2009

A. Management Strengths

1. The floral and faunal resources of Mahananda Wildlife Sanctuary (WLS) are documented well in a publication brought out jointly by the Forest Department and an NGO (NEWS).
2. The site has a comprehensive management plan.
3. The site safeguards a large number of threatened biodiversity values. The floral resources of the sanctuary have improved a lot, along with some keystone animal species.
4. Regular patrolling is carried out by the staff on vehicles and on foot during the day and night.
5. By erecting electric fencing and maintaining mobile squads, the human-wildlife conflict has been significantly addressed.
6. The site is integrated fairly well into the network/landscape. The sanctuary has been extended to include an elephant corridor and make a comprehensive unit.
7. The personnel are engaged mainly in working towards achieving specific management objectives.
8. NGOs contribute to carrying out census, education and awareness activities.
9. Public complaints are heard and dealt with to the extent possible.
10. Management-related trends are systematically evaluated and routinely reported. Evaluation is through regular inspections, carried out by senior officers.
11. The populations of some threatened/endangered species are increasing, and most of the others are stable. The elephant population is on the increase. The tiger population is stable.

- 12. Most of the biological communities are likely to be able to sustain the native biodiversity. The sanctuary has a lot of pristine area, which supports a good amount of the native biodiversity.
- 13. Most threats to the site have been ended. Except livestock grazing and erosion by rivers, other threats have been contained.
- 14. Preservation of the cultural heritage has been attempted through community centres created under eco-development and Forest Development Authority schemes.

B. Management Weaknesses

- 1. Threats are known, but they are not systematically documented and regularly monitored.
- 2. The site has some human and biotic interference. Grazing by domestic cattle and collection of NTFP take place along the southern fringe.
- 3. The site is well demarcated, but zonation for various activities is not properly documented.
- 4. There is a valid management plan, but it has not been prepared through a participatory process.
- 5. There is some planning and monitoring in reintroduction programmes. Introduction of the hoolock gibbon and black bear was carried out in the past, but the planning and monitoring were inadequate.
- 6. Some funds are released in time, but there are many instances of delayed releases of funds. CSS funds are regularly received, while other funds are allotted in an ad hoc manner.
- 7. Only a few field staff members are specifically trained in wildlife management.
- 8. Complaints are not all entered in the register or monitored systematically.
- 9. The documents are neither scientific nor general in nature and are not linked with management accountability.

C. Actionable Points

- 1. Threats need to be documented systematically and monitored regularly.
- 2. The extensive human and biotic interference need to be minimized by stopping the grazing of domestic cattle and collection of NTFP.
- 3. The site needs to be properly categorized into zones.
- 4. A science-based, comprehensive management plan needs to be prepared through a participatory process.
- 5. The reintroduction of hoolock gibbons and black bears needs to be monitored properly.
- 6. Adequate funds and resources should be released in time.
- 7. More trained frontline staff members are need for the management of the PA.
- 8. Complaints need to be entered properly in the register and followed up.

Jaldapara Wildlife Sanctuary, West Bengal
Evaluation Year, 2006–2009

A. Management Strengths

- 1. The site is well identified, and core, buffer and eco-tourism zones have been clearly demarcated.
- 2. The site has a detailed and scientifically drawn management plan that is valid up to 2006–2007.
- 3. Actions have already been initiated to revise the management plan.
- 4. The values are well documented in the current management plan. It adequately safeguards the macroflora and macrofauna.
- 5. Except for the preparation of the scientific management plan, the stakeholders are involved in other aspects of the planning process.
- 6. The management plan identifies details of areas requiring habitat restoration, including the nature and quantum of restoration. Monitoring is done through frequent field visits.

7. Species to be re-introduced are listed in the management plan, with the sources of the animals indicated. An earlier re-introduction programme was properly monitored.
8. The site is well covered by a communication network. Regular patrolling is carried out using vehicles and elephants and on foot, throughout the day.
9. The site is fully integrated into the wider network/landscape. The site is integrated into the Eastern Duars Elephant Reserve and the Tiger Conservation Unit of WWF according to the eco-system and landscape approach.
10. The area has an adequate number of committed personnel stationed at strategic areas across the sanctuary. The resources available from various sources put together are adequate, and the entire staff works towards specific management objectives.
11. Due to the high priority given to the sanctuary, it gets non-plan, state plan and other departmental funding. The shortage of government vehicles is addressed by hiring vehicles. Some specific objectives are met using funds from other departments also.
12. The contribution of NGOs is limited to participation in wildlife censuses and public awareness programmes, supplying some patrolling kits and occasionally conducting field training related to wildlife crimes.
13. All the staff members work for specific management objectives.
14. There is public participation in most aspects of management of the protected area (PA), except where specific scientific and technical skills are required.
15. Brochures, booklets and hoardings provide general information.
16. Management-related trends are systematically evaluated and reported through annual and special reports in a routine manner.
17. There are systematic inventory records for public assets. There is also a systematic maintenance schedule, including plantation and habitat improvement works.
18. The populations of all endangered and threatened species are either increasing or stable. The increases in the numbers of rhinoceroses, gaur and sambar are particularly notable. Most visitors see rhinoceroses, gaur, sambar and hog deer in almost all the visits.
19. The recognized macro-biological communities are generally healthy and sustain the native biodiversity.
20. Panchayats and EDC members, including tea gardens, are supportive of the PA management.
21. The cultural heritage sites (Bania ruins and Totos of Totopara) are protected to the extent possible, and their degradation and deterioration have been addressed significantly.

B. Management Weaknesses

1. The sanctuary is highly vulnerable to biotic interference, which has been kept under control through rigid protection and eco-development committees (EDCs).
2. Man-animal conflicts are mitigated using electric fencing, mobile patrol parties and elephant squads, but still some damage are caused by elephants.
3. Since funding is received from various sources, often it is not available when it is needed. Funding is frequently ad hoc. However priority actions are attended to.
4. Though the available human and financial resources are generally adequate, these cannot be depended upon because there are many vacancies and funds from other sources are not always guaranteed.
5. Only a few officers and frontline staff members are trained in wildlife management.
6. Most of the complaints are heard and attended to, but there is no register recording all the comments or complaints with notes on how they were attended to.
7. The demand for addressing livelihood issues through the use of natural resources is very high. Only some of these can be met through EDCs, eco-tourism, etc.
8. Illegal felling and poaching have been reduced to a great extent, but some damage from grazing, flood and cement dust (coming from dolomite mines in Bhutan) remain.

C. Actionable Points

1. The sanctuary is highly vulnerable to biotic interference, which needs to be addressed immediately.
2. The damage caused by elephants involved in man-animal conflicts should be taken care of.
3. Funding received from the various sources should be timely.

- 4. The site needs more trained frontline staff members for PA management.
- 5. A register recording all comments and complaints, with notes on how these have been attended to, needs to be maintained.
- 6. Immediate steps need to be taken to solve the pressures of grazing, floods and the cement dust from dolomite mines in Bhutan.

Gorumara National Park, West Bengal Evaluation Year, 2006–2009

A. Management Strengths

- 1. All the values and threats to the site are well documented and assessed.
- 2. The threats from human and other biotic interference have been significantly reduced through awareness and participation of the people.
- 3. The site has well-defined core and buffer zones. The final notification was issued in 1998 and core, buffer, wilderness and ecotourism zones have been visibly defined with clear objectives.
- 4. There is a comprehensive management plan for the period from 2007–2008 to 2017–2018.
- 5. The management plan is routinely and systematically updated after every 10 years. There is some participation of stakeholders.
- 6. The biodiversity values are suitably safeguarded through protection, people's participation and eco-development activities.
- 7. The local stakeholders are represented in eco-development committees and involved in most of the planning and conservation activities.
- 8. All the programmes of habitat improvement have been identified, planned and monitored through field visits by the state forest department.
- 9. Sambar, Spotted Deer and Gharial have been introduced and monitored through approved programmes.
- 10. Patrolling is carried using vehicles, motor cycles and departmental elephants. There are an adequate number of watch towers and communication system.
- 11. There is hardly any human–wildlife conflict in the national park and in its immediate vicinity.
- 12. The site is integrated into the greater landscape. The original 8.62 km² of the sanctuary has been expanded to 79.45 km², before its declaration as a national park.
- 13. Resource allocation is primarily made for priority action and funds are generally released in time.
- 14. NGOs primarily contribute to census operations, public awareness programmes and field trainings. They supply patrolling kits.
- 15. Frontline staff members are trained at the Wildlife Institute of India and Forest School. They in turn train the grass roots-level workers.
- 16. The performance management of all staff members are directly linked to achievement of relevant management objectives.
- 17. EDCs are clubbed to block-level and range-level co-ordination committees. Fringe dwellers support most aspects of PA management through EDCs.
- 18. The PA management adequately addresses the issue of livelihood through various EDC programmes. Very often such programmes provide more income than traditional means.
- 19. Excellent arrangements have been made in several places in the form of eco-huts and eco-tourist facilities, which help enhance the values of the protected area (PA).

- 20. Management-related trends are systematically evaluated and routinely reported. Evaluation is through census reports, annual reports, etc. which are presented routinely to higher authorities.
- 21. There is a systematic inventory of wild animals. Habitat assessment is carried out through management plans, especially maintenance of plantations.
- 22. The populations of the Rhinoceros, Gaur and Wild pig have increased significantly. The populations of the other species are more or less stable.
- 23. The PA has well preserved, pristine high forests sustaining the native biodiversity in which biological communities may be evaluated.
- 24. Most of the threats to the site have been reduced through protection and JFM with the active participation of local people.
- 25. The expectations of most visitors have met. Even sitting in the compound of the FRH, one can see gaur, rhinoceroses and wild pigs foraging daily.
- 26. The evaluation team met the Forest Minister, MP and local MLA as well as various EDC members and other people living on the fringe areas. All were supportive of the PA management.
- 27. The cultural heritage of the local people has been preserved through organization of regular social and cultural programmes in eco-villages and eco-tourist centres.

B. Management Weaknesses

- 1. The available personnel are explicitly allotted for PA management, but there are large numbers of vacancies in the field staff, which are now filled by casual workers.
- 2. The resources available from Centrally Sponsored Scheme (CSS) are good, but the state plan allocation is poor. Only in 2007–2008 was the state plan allocation significantly increased. All resources are mobilized for management objectives.
- 3. The complaint handling system is discussed at block-level and range-level co-ordination committee meetings, but there is no logging of individual complaints through complaint boxes and individual responses.

C. Actionable Points

- 1. Filling up vacancies in the field staff, especially Forest Guards, mahouts and grass cutters, is essential for PA management.
- 2. The resources available from the state plan allocation need to be enhanced.
- 3. The complaint handling system needs to log individual complaints through complaint boxes and individual responses are required.
- 4. Brochures, booklets and hoardings provide detailed information about the park, but these need to be provided in regional languages for better understanding.

Singalila National Park, West Bengal
Evaluation Year, 2006–2009

A. Management Strengths

- 1. The values have been well documented in the management plan and assessed and monitored through annual reports and periodic censuses.
- 2. All threats have been properly documented in the management plan, and most of them have been assessed from time to time.
- 3. The site was finally notified as a national park in December 1992. It has three clear management zones, viz. wilderness, habitat improvement and eco-tourism zones.
- 4. The site has a comprehensive management plan.

5. The site safeguards all threatened biodiversity values of upper temperate, both broadleaf and conifers and sub-alpine forests.
6. Habitat restoration programmes are planned and monitored thoroughly.
7. Re-introduction programmes for the red panda, the keystone species, have been well planned and monitored.
8. Several camps have been opened along the vulnerable Indo-Nepal border. Regular patrolling is carried out, and linkages have been developed with SSB camps.
9. There is little man-animal conflict due to the adjoining forest of Darjeeling Division in the Indian side.
10. The site is fully integrated into the wider network/landscape. On the Indian side it is integrated with the lower temperate forests of Darjeeling Division and on the Sikkim side with its forest, where conservation management is practiced.
11. All the available staff members are organized and linked with the management objectives of the protected area (PA).
12. All the resources are well organized and allocated for PA management.
13. All the resources are allocated for priority actions, and most of the funds are released in time.
14. The contributions of NGOs are sought and obtained for education and awareness programmes, garbage disposal and monitoring the red panda, the keystone species.
15. One FR is undergoing training at the Wildlife Institute of India. Foresters are trained in programmes organized by forest training centres.
16. The performance of all the staff members is linked with the relevant management activities. Duty registers are maintained at all camps for monitoring their work.
17. There is only one village on the fringe of the PA on the Indian side, and the villagers participate in all important aspects of PA management through EDCs.
18. A coordinated system logs and responds effectively to most complaints.
19. A substantial part of the livelihood of the only village on the fringe is provided by various programmes of EDCs.
20. All the visitor services and facilities accord with the relevant PA category and enhance the PA values.
21. The management trends are provided in periodic reports and evaluation is performed through analysis of duty and wildlife monitoring registers.
22. Most of the biological communities (except the ridge area along the Indo-Nepal border) are likely to sustain the native biodiversity.
23. Most of the threats to the site, except the ridge area along Indo-Nepal border, have been effectively managed.
24. Visitors are mostly mountain trekkers and nature tourists, whose expectations are met.
25. All the neighbours and communities are supportive of the PA management as tourism is mostly nature tourism and provide them livelihood.

B. Management Weaknesses

1. A substantial part of the livelihood of the only village is provided through various programmes of the EDC. However, there are no special programmes for women.
2. The information made available to the public is general and has limited relevance to the accountability of the management and the condition of public assets.
3. The schedule of maintenance is systematic, but the available funds are not adequate for carrying out all maintenance appropriately.
4. The populations of some threatened and endangered species are increasing, and others are more or less stable.

C. Actionable Points

1. The biotic interference, mostly along the western boundary of Nepal, needs to be curbed immediately.
2. There should be some livelihood programmes for resource-dependent people, especially women.
3. Ponies are needed for patrolling by the Forest Rangers and other staff members in the camps.
4. All the camps should be headed at least by a Forest Guard. Special provisions are required for heating and a high-altitude allowance.
5. Adequate funds are needed to carry out appropriate maintenance activities related to assets.
6. Documents made available to the public are only in English. Documents in Nepali providing insights into major management issues should be prepared and made available to the public.

Neora Valley National Park, West Bengal Evaluation Year, 2009-2010

A. Management Strengths

1. Most values and threats have been systematically identified and assessed. Local and international site values have been recognized adequately. This is one of the oldest reserve forests (1881) free from rights and encumbrances.
2. Except for the southern portion, the site is free of human and biotic interference.
3. The area has been identified properly, including inter-state and international boundaries. The zonation for management purposes is adequate (core and eco-tourism zones).
4. The site has a duly approved written management plan for 10 year (2008–2017) period. The current plan need to be imbedded in available resource database and brought in tune with the guidelines of the Wildlife Institute of India (WII).
5. The management plan is routinely and systematically updated.
6. The site safeguards all threatened biodiversity values.
7. Stakeholders participate in most planning processes. An advisory committee is in place and meets regularly. A draft plan may be placed before the committee for scrutiny and suggestions. The DFO states that the stakeholders, including the eco-tourism industry, are being taken into confidence.
8. Habitat restoration programmes are generally well planned and monitored.
9. There is a comprehensive strategy and consistent efforts have been made during the last two decades to preserve the pristine nature of the site by not introducing roads within the core zone. Wildlife protection camps located at strategic places have kept in check human interference.
10. Man–animal conflicts are limited to the southern region, during specific periods. The management is making consistent efforts to curb possible threats by involving EDCs.
11. The site is well connected with Chaparamari–Gorumara National Park and Mahananda Sanctuary (in the protected area network within the state), Pangulakha Sanctuary (in the adjacent state of Sikkim) and Torsa Strict Nature Reserve or Toorse Nature Reserve (which is situated in Bhutan and sprawls over 644 sq km and covers two Dzongkhags of Haa and Samtse).
12. Resources are linked to priorities according to the management plan. GoI funds are released in time and utilized optimally.
13. In terms of NGO contribution, Himalayan Nature & Adventure Foundation (HNAF), WTI, WWF, NAS, SPAWAN, JSNC, Dooars Jagran/Aaranyak, etc. (about 20 NGOs) are associated with and provide assistance in terms of insurance/equipment/training/law enforcement/crime control.
14. The resources are sufficient for most of the tasks.
15. As in any other division, the PA supervisory staff have a system of linking the performance of the staff with management objectives.
16. A sanctuary advisory committee is in place. The human population living on the fringe in Gopipala, Bhujeigaon, Chulina, Ambik, Lava and Mulkhagra are involved in mitigation of man–animal conflicts. EDCs activities negate the impact of visitors on heritage sites.
17. A coordinated system logs and responds effectively to most complaints.
18. There are special women's EDCs that deal with livelihood issues such as horticulture, floriculture and crop cultivation, as seen at Chulina Busty EDC. The innovative way of providing an assured market is proving to be effective.
19. The website, brochures, hoardings, signage and 2 Nature Interpretation Centres are commendable.

- 20. All the visitor services and facilities accord with the relevant PA category and enhance the PA values. There are a large number of private facilities. Local youth are trained to provide guide services.
- 21. Status reports on some of the key species (wild dog, red panda, khaleej pheasant, etc.) are being prepared/ planned including medicinal plants in-situ Orchid, Rhododendron.
- 22. A systematic inventory provides the basis of the maintenance schedule, and adequate funds are made available for assets/infrastructure.
- 23. The difficult terrain and limited visibility impose limitations on regular, close monitoring; however the protection camps are generating considerable data on key mammal species such as the red panda, tiger, clouded leopard, wild dog, tahr, Himalayan bear, leopard, lesser cats and marten and the rich avifauna. The populations of these key elements are considered stable and increasing.
- 24. All the biological communities are being sustained to support the native biodiversity.
- 25. All the threats to the site have been dealt with.
- 26. All the reasonable expectations of serious wildlife lovers are met.
- 27. The immediate neighbours are supportive, thanks to EDC or JFM activity in the buffer zone. The convergence of various development agencies is giving positive results.
- 28. Jore Pokhari and Panch Pokhari have cultural values and are being fostered.

B. Management Weaknesses

- 1. The southern portion has some biotic interference due to a small village inside the PA.
- 2. The situation of the staff is precarious. There are too many vacancies (RFO 2/0, BO 6/4 and FG 20/6).
- 3. Only a few staff members are trained in wildlife management.

C. Actionable Points

- 1. The biotic interference arising from the southern portion needs to be mitigated immediately.
- 2. Some parts of the PA need to be demarcated properly.
- 3. Detailed data collection and literature reviews are needed to identify the scope for re-introduction.
- 4. The vacancies (RFO 2/0, BO 6/4 and FG 20/6) need to be filled to improve the situation regarding the staff.
- 5. The supervisory staffs need vehicles for mobility, as well as a wireless network. The protection camps need to be strengthened with amenities such as high-altitude gear, potable water and solar lights. Inspection and patrolling paths are also needed. Range-/beat-level staff quarters are required.
- 6. The deployment of human resources needs to be improved. A greater thrust is needed on inventorying and monitoring (sample plots/permanent transects/PIP). WII should provide guidelines.
- 7. The frontline staff members need to be trained more in wildlife management.
- 8. The shortcomings can be explained against the backdrop of the deteriorating law and order situation, but improvement should be effected at the earliest.

Chapramari Wildlife Sanctuary, West Bengal
Evaluation Year, 2012-2013

A. Management Strengths

- 1. Chapramari WLS is located in Lower Gangetic Plain bio-geographic zone (7B). This wildlife sanctuary is the habitat/visiting place of a number of animals that fall in Scheduled-I of the Wildlife Protection Act, 1972. They are the (1) Indian elephant (*Elephas maximus*), (2) gaur/Indian bison (*Bos gaurus*), (3) Chinese pangolin (*Manis pentadactyla*), (4) common leopard (*Panthera pardus*), (5) reticulated python (*Python reticulatus*), (6) Malayan giant squirrel (*Ratufa bicolor*) and (7) leopard cat (*Felis benghalensis*). Recently the sanctuary has been frequently visited by the Indian one-horned rhinoceros, coming from the adjoining Gorumara National Park (NP).

In fact one adult male rhinoceros is staying permanently in the sanctuary. Chapramari is a stronghold of mega-herbivore diversity.

2. The sanctuary is connected by forest blocks with Gorumara NP and can potentially be linked with Neora Valley NP. Landscape-level management of biodiversity could be achieved by securing the reserved forests of Jalpaiguri Division and Kalimpong Division surrounding and juxtaposed between Gorumara NP, Chapramari WLS and Neora Valley NP (in West Bengal), Pangolakha WLS (in Sikkim) and Toorsa Reserve (in Bhutan). This can be a compact corridor, which will not only secure movements of the populations of elephants and rhinoceroses in a larger landscape but also open up the possibility of tiger movements from Neora Valley NP.
3. The sanctuary has a long history of conservation. The first reservation in this area was made in 1879 and the site was declared a reserve forest in 1895 under the Indian Forest Act, 1878. In 1939, 2129 acres of the forest in Upper Tendu Forest was declared Chapramari Game Sanctuary. Subsequently 2373 acres was notified as a WLS on 18 November 1940 and 30 August 1941. In 1976, the intentional notification of Chapramari Wild Life Sanctuary was issued under the Wildlife Protection Act, 1972, and the final notification was issued in 1998. This has facilitated wildlife-oriented conservation in this landscape.
4. The experience of the West Bengal Forest Department in executing JFM in a participatory mode has enabled the PA Management in developing a functional entity for integrating local communities into conservation and eco-tourism.

B. Management Weaknesses

1. Lack of adequate staff and existing Staffs have no formal training in wildlife.
2. The size of Chapramari WLS is only 9.60 sq. Km, which is too small for effective wildlife habitat management.
3. The reserved forest compartments adjoining Chapramari WLS, like Panjhora 3, Hillajhora, Sipchu and Chapramari 1 are not covered by the management plan. Grazing, forest fires and collection of fuelwood and other NTFP items are not regulated in these areas. But they are frequently used by wild animals as corridors for movement.
4. The monoculture vegetation has come up as a result of previous forestry practices. For example, there is a teak plantation in Panjhora Block, which is not used by wild animals.
5. The PA does not have any natural salt licks. There is a natural salt lick in a reserved forest nearby, in Kumani Block, in Kalimpong Division, at Naxaljhora, but the area is highly disturbed and hence cannot be used by wild animals frequently. But all herbivores require micro-elements for their physiological demands.
6. There are three tea gardens adjacent to the sanctuary. The absence of an interface between the tea garden and forest acts as a constraint for the management. The management of wild animal conflicts is a major issue. Moreover, uncontrolled use of pesticides in the tea gardens causes alarming levels of pollution around the sanctuary. Huge amounts of pesticides leach into the river system and affect the indigenous aquatic fauna as well as avifauna of the sanctuary.
7. The Siliguri-Alipur Duar broad gauge railway track passes through the southern side of the sanctuary, cutting across the corridor and dividing the reserved forests of Panjhora Block, of Jalpaiguri Division. Till 2003 it was a metre gauge railway track, after the conversion of the track from the metre gauge to the broad gauge, the southern stretch of the PA and its adjoining areas have become a death trap for wild animals. Many elephants, gaurs and other animals, such as pythons, deer and leopards, have got killed in railway accidents.

C. Actionable Points

1. The staffs need vigorous capacity building in wildlife management. Short-term training courses/ programmes in wildlife management (planning, protection and monitoring) should be taken up at the division level for building the capacity of all the field staff on high priority.
2. Funding should be ensured for carrying out all habitat restoration prescriptions and for the scheduled maintenance work of inventories.
3. More motor cycles and suitable departmental patrolling vehicles should be provided expeditiously to the PA management for effective protection.
4. The excellent work being done in tourism management should be built on by making its base broader and integrating it with existing EDCs and VFCs.
5. An Interpretation centre should be established for imparting nature education effectively.
6. A study should be taken up urgently to assess the carrying capacity of the PA for tourism so that no damage from these activities happens in the future.

7. Modern spatial technology tools must be adopted in the day-to-day management of the PA.
8. Long-term wildlife ecology and biology studies should be taken up on a priority basis on mega-herbivore habitats and species and on critical management issues such as conflict mitigation and landscape-level wildlife management.
9. Declaration of the forests surrounding the Chapramari-Gorumara landscape as a conservation reserve is badly needed to secure Neora Valley. The proposal submitted to the state wildlife board must be considered expeditiously, and comprehensive management planning must be carried out for the landscape.
10. A joint action plan should be drawn up and implemented by both the Forest Department and railways to prevent accidents. This matter has to be given high priority at the state and Central government levels.
11. The conflicting situation with tea garden workers and the pesticide pollution issues need to be resolved through local coordination meetings with the tea garden management, district authorities and PA managers, followed by state-level meetings.







WESTERN REGION



WESTERN REGION

3.4

Western Region

S. No.	State	National Parks and Wildlife Sanctuaries	Evaluation Year
1.	Gujarat	Barda Wildlife Sanctuary	2006-2009
2.	Gujarat	Marine (Gulf of Kutch) National Park	2006-2009
3.	Gujarat	Wild Ass Wildlife Sanctuary	2006-2009
4.	Gujarat	Shoolpaneshwar Wildlife Sanctuary	2009-2010
5.	Gujarat	Velavadar National Park	2009-2010
6.	Gujarat	Gir National Park	2012-2013
7.	Gujarat	Purna Wildlife Sanctuary	2012-2013
8.	Maharashtra	Sanjay Gandhi National Park	2006-2009
9.	Maharashtra	Navegaon National Park	2006-2009
10.	Maharashtra	Bhimashankar Wildlife Sanctuary	2006-2009
11.	Maharashtra	Chandoli National Park	2009-2010
12.	Maharashtra	Chaprala Wildlife Sanctuary	2009-2010
13.	Maharashtra	Great Indian Bustard (GIB) Wildlife Sanctuary	2012-2013
14.	Maharashtra	Karnala Wildlife Sanctuary	2012-2013
15.	Madhya Pradesh	Kuno Palpur Wildlife Sanctuary	2006-2009
16.	Madhya Pradesh	Madhav National Park	2006-2009
17.	Madhya Pradesh	Ratapani Wildlife Sanctuary	2006-2009
18.	Madhya Pradesh	Noradehi Wildlife Sanctuary	2009-2010
19.	Madhya Pradesh	Karera Wildlife Sanctuary	2012-2013
20.	Rajasthan	Keoladeo National Park	2006-2009

21.	Rajasthan	Desert National Park	2006–2009
22.	Rajasthan	Kumalgarh Wildlife Sanctuary	2006–2009
23.	Rajasthan	Sitamata Wildlife Sanctuary	2009–2010
24.	Rajasthan	Mount Abu Wildlife Sanctuary	2012–2013

1

Barda Wildlife Sanctuary, Gujarat Evaluation Year, 2006–2009

A. Management Strengths

1. All values and threats have been systematically identified, assessed and monitored.
2. The site has been identified correctly and systematically categorized into various zones.
3. The plan is comprehensive and the efforts laudable considering that the plan is the first duly approved one.
4. In terms of habitat restoration, the water conservation measures are noteworthy and have given excellent results. Lantana invasion control measures are in place.
5. The reintroduction programmes are generally well planned and monitored.
6. The site is generally quite well integrated into the network/landscape. The protected area (PA) occupies a central position in the landscape and protects the watershed.
7. GEER Foundation has provided much needed technical inputs. There is little support from the people for population estimation exercises.
8. Experienced field workers and staff members receive refresher training from time to time. The PA manager does not consider a lack of trained staff as a limitation.
9. There are coordinated system logs, and the process responds effectively to most complaints. Democratic institutions are well established. The institution of Lokayukta is in place.
10. Substantial issues are addressed by the management.
11. The visitor services and facilities are generally in accordance with the relevant PA category and do not threaten the values of the PA.
12. Systematic evaluation and routine reporting of management related trends are undertaken. The Gujarat Biodiversity Strategy and Action Plan is in place. GEER Foundation has also published good data. A web site is available.
13. The populations of most threatened/endangered species are increasing, and most others are stable. The status of endangered floral components is improving. As the habitat recovery is good, the overall position is stable.
14. Dissemination of information of the PA is done by regular publication of Gujarat Forest Department/GEER Foundation.

B. Management Weaknesses

1. The site has a draft management plan (2005–2009), which is yet to be approved by higher authorities.
2. According to the management, there were no stakeholders at the time when the sanctuary was declared. At present some encroachers are claiming rights of settlement.
3. The resources are not adequate.
4. There is only one trained staff member and more are required.
5. There are no possibilities of public participation. The location of the site, the pattern of the population on the fringe and the low density do not allow regular people's participation.

- 6. There is no mechanism of handling complaints.
- 7. The facilities provided for visitors are not adequate.

C. Actionable Points

- 1. Threats recognized in the management plan such as mining in the vicinity, pollution due to industries and adverse impact of Maldharis on the ecosystem and goat/sheep grazing need to be minimized.
- 2. Urgent steps are needed to minimize the extensive human and biotic influence. The 700 families residing inside the sanctuary need to be translocated as soon as possible.
- 3. Urgent steps need to be taken for establishing an institutional mechanism and meeting the statutory requirement of having an Honorary Warden and Advisory Committee.
- 4. The site needs an effective protection strategy for management of the PA.
- 5. The proliferation of the invasive *Acacia senegal* needs to be controlled. Soil conservation needs priority. The basic causes of habitat damage need to be controlled through relocation of the Maldharis at least to the periphery.
- 6. Attempts are being made to reintroduce Cheetal. Priority may be given to browser species such as the Sambhar and the populations of antelopes may be augmented. The Lion reintroduction initiative needs serious rethinking in view of the observations in the report produced by GEER Foundation.
- 7. The application of the guidelines regarding eco-sensitive areas needs to be examined after a critical appraisal of the threats posed by industries in the close proximity.
- 8. The participation of the public should be enhanced for long-term management of the PA.

2

Marine (Gulf of Kutch) National Park,
Gujarat
Evaluation Year, 2006–2009

A. Management Strengths

- 1. The values and threats have been systematically identified, monitored and assessed. This site is one of the important bird areas (IBAs) and is also contiguous with another IBA (Khijidiya Wildlife Sanctuary).
- 2. The site has a comprehensive management plan.
- 3. The site safeguards a large number of threatened biodiversity values.
- 4. Stakeholders participate in most of the planning processes. Legally, there is only one village within the protected area (PA), but peripheral villages are being considered and eco-development has been planned therein, including construction and repairs of check dams, ponds and energy conservation measures.
- 5. The habitat restoration programmes are generally well planned and monitored.
- 6. The site is fairly well integrated into the network/landscape. Two PAs, namely the Gaga and Khijidiya bird sanctuaries, located close to the Marine Sanctuary, are a noteworthy feature.
- 7. Resource persons for environmental education and population estimation are provided by NGOs. GEER is providing support for mangrove conservation monitoring, etc.
- 8. The resources are sufficient for most of the tasks.
- 9. Performance is generally linked to the priorities and actions.
- 10. There are coordinated system logs and the process responds effectively to most complaints.
- 11. Routine comprehensive reports on the PA management and condition of public assets are provided. There is considerable extension activity (100 camps conducted each year, a total of 1269 camps with 70,709 participants; a large number of camps conducted by NGOs as well). Publicity has been given and extension literature produced extensively in traditional and non-traditional ways such as using the electronic media.
- 12. All visitor services and facilities are in accordance with the relevant PA category, and most enhance PA values. The quality of services provided in nature camps is of high level.

13. A long-term and very detailed bird census is being conducted. A good record is being maintained of the mangrove plantations developed under various models and schemes.
14. The expectations of most visitors are met.
15. Most neighbours and local communities are supportive of the PA management.

B. Management Weaknesses

1. Human and biotic interference due to industrial development (for example Reliance, G.S. Fertilizers, ESSAR, Tata Chemicals, Indian Oil Corporation, thermal power station, salt manufacture, fishing etc.) have an impact on the National Park.
2. The site has an ad hoc protection strategy.
3. The staff strength is inadequate, given the values of the PA. Against a sanctioned strength of 86, actually 68 persons are in place. The numbers of key persons such as Research Officer, Range Forest Officers, Foresters and Forest Guards are not adequate. The coastal area, with poor communication, warrants better norms and consequently more staff.
4. Releases of grants are generally less than what is needed and their utilization is sub-optimal. The numbers of vehicles, boats and motor cycles are not adequate. Each range should have jeeps and motor cycles, considering the terrain and need for better control.
5. The wireless communication system is wanting. Boats are required for monitoring and patrolling the open sea. There are no laboratories for monitoring threats such as oil spills, releases of bilge or ballast water and spillage.
6. The basic training of the field staff is adequate, but they need special skills such as diving and snorkelling. A special cell for biological monitoring is essential.
7. The cultural heritage needs to be protected. Dwarka has cultural values that could be harnessed for potential eco-tourism and environmental education activities.

C. Actionable Points

1. The human and biotic interference due to industrial development need immediate mitigation.
2. Patches in the creeks need to be demarcated and foolproof protection and categorization are necessary.
3. The mangroves are well protected. There is scope for improvement or enhancement of protection of corals, the Dugong, etc. and rehabilitation of corals. Creation of an effective core zone that will include the area of the Okha block opposite Poshitra [Paga, Bhaidar, Noru, Chank, Boria, etc.] is recommended.
4. Adequate staff needs to be sanctioned, such as Research Officers, RFOs, Foresters and FGs.
5. Grants for resources such as vehicles, boats, motor cycles and wireless communication systems need to be enhanced.
6. The staffs need to be trained in diving, snorkelling, etc., and a special cell for biological monitoring is essential.
7. The area has a special requirement of management infrastructure because of the coastal environment, high salinity, etc. Maintenance will require special norms, and there is justification for upward revision of maintenance schedules.
8. Expectations of visitors are met, but considering the scope and opportunities, more needs to be done.
9. The adverse impact on marine taxa needs to be mitigated; a more specific study is needed to identify the reasons and measures for mitigation.
10. The support of the local population is excellent, but large industrial houses, both private and government-owned, need to exonerate their social commitment in a responsible manner. Coastal areas also have security problems and the PA is an effective buffer in which industries too have stakes.

Wild Ass Wildlife Sanctuary, Gujarat Evaluation Year, 2006–2009

A. Management Strengths

1. The values have been systematically identified and monitored. The site is recognized as a habitat of the Wild Ass and as an Important Bird Area (IBA).
2. Threats have been systematically identified, monitored and assessed. Most of the threats, such as invasion of *Prosopis*, heavy vehicular movement, salt production, grazing, development consequent to the construction of the Narmada canal and unethical tourism, have been identified.
3. The site has ecological contiguity, apart from the main block of the Little Rann, it includes six geographically separated patches going northwards, which provide connectivity with the Rajasthan Desert and the Greater Rann.
4. There is a management plan for the site.
5. The site safeguards a large number of threatened biodiversity values. The Wild Ass, the key species, whose population had crashed to almost 10% in 1963, has now recovered even beyond its estimated pre-crash population. The population has also extended beyond the earlier known habitat. The numbers of other important mammals, the Chinkara, Wolf and Desert Fox, etc. are safe. This is an IBA for wetland birds and is a staging ground for migratory birds. All these values are safeguarded.
6. There have been consultations with stakeholders such as the *agariyas* from time to time. Forest Development Agency activity is in place under the stewardship of the territorial wing.
7. Habitat restoration programmes are generally well planned and monitored. Habitat changes are being monitored using remote sensing tools since 1995 by GEER and WII.
8. The main problem is crop damage by Wild Asses and Blue Bulls. Compensation is not offered for crop damage, but a 50% subsidy is given for fencing. Driving straying animals back to the protected area (PA) in a participatory mode is found to be useful.
9. The site is fairly well integrated into a network/landscape. It is linked with the Great Rann and both the Ranns are now part of the Kutch Biosphere Reserve. The Bani Protected Forest area connects it to the Greater Rann of Kutch. Apart from the main block of the Little Rann, the site includes six geographically separated patches going northwards, which provide connectivity with the Rajasthan Desert and the Greater Rann.
10. Resource persons for environmental education conducting censuses are provided by NGOs. GEER is providing support in mangrove conservation monitoring, etc.
11. There are coordinated system logs and the process responds effectively to most of the complaints.
12. There is considerable extension activity (more than 300 camps have been conducted since 1991, in which more than 10,000 students and their teachers have participated). Publicity has been given and extension literature has been published in traditional and non-traditional ways such as the use of electronic media to share information with the public.
13. There is an excellent nature interpretation centre at Bajana. The quality of the services offered therein is high and the scope is very wide. There are private resorts [Desert Coursers, Rann Riders, Eco tours, etc.] catering to tourists' needs.
14. An estimation of the populations of the Wild Ass and other major mammals is being carried out on a 5-year cycle. The last population estimate was carried out in 2004. Long-term and very detailed bird counts are being conducted consistently biennially.
15. The populations of most threatened or endangered species are increasing, and most others are stable. The population of the key species, the Wild Ass, has increased and seems to have stabilized. In fact, there is a spillover to adjoining areas.
16. The expectations of many visitors are met.
17. Most neighbours and local communities are supportive to the PA management.

B. Management Weaknesses

1. Inclusion of most of the forest/wasteland from the fringe villages by a notification dated January 1973, under the Gujarat Wild Animals and Wild Birds Protection Act, 1963 and a January 1978 notification under the Wildlife (P) Act, 1972 has left the villagers with no alternative for meeting their requirements of fodder and fuel requirements. The existing land uses such as salt manufacture and grazing were not considered, and hence they are the present threats to the habitat.
2. The site has been identified correctly but not been systematically categorized. Well defined zones (core, tourism and buffer) are not in place as of today, but core, tourism, multiple use zones, etc. is contemplated.
3. There is a management plan, but it is not comprehensive. A duly approved management plan is not in place, but there is a serious attempt to develop a plan. Annual plans are made based on GEER Foundation's science-based document "Ecological Study of Wild Ass Sanctuary" and works are carried out accordingly.
4. Given the extent of the area, the sanctioned strength of the field staff, i.e. three Range Forest Officers (RFOs), nine Foresters and 15 Forest Guards (total 27), is grossly inadequate, even these positions are not manned fully. Separate staffs for manning the entry points, monitoring, extension, etc. are required.
5. The available resources are insufficient for most of the tasks. The lack of staff leads to constant crisis management and thus priority areas get neglected.
6. The field staffs consists mostly of 'promotees' or untrained personnel, only two guards are well versed in bird identification though wetland birds are the major attraction of this PA.
7. Nanda is the only village within the PA; it has a population of more than 100 households. However, there are large number of fringe villages that, by tradition, depend on land resources such as grazing lands and salt manufacturing areas. Presently, there is no emphasis on the livelihood issues of the persons in these villages.
8. Minimization of threats has been accomplished to a limited extent. The problems of salt manufacture, grazing by local and migrant cattle and fishing have remained. Recently, civil society is trying to find solutions to pestering problems such as those of the salt industry through PILs.

C. Actionable Points

1. The threat that has arisen due to the notification of the fringe villages as part the sanctuary needs to be properly investigated and mitigated. The site needs some livelihood programmes for the resource-dependent communities.
2. The site needs proper categorization into core, buffer and tourism zones.
3. There is an urgent need to have a science-based comprehensive management plan.
4. In terms of stakeholder participation, legally, there is only one village, viz. Nanda, within the PA. But there are a large number of peripheral villages that also need to be considered as stakeholder. The statutory provision under the Wildlife (P) Act, 1972 (Section 33B), for constituting an advisory committee that could be an appropriate forum for participation in management, has not been met.
5. The staff strength need to be increased as suggested in the foregoing. Adequate number of trained staff members need to be sanctioned, such as Research Officers, RFOs, Foresters and Forest Guards.
6. There is a paucity of funds. This needs to be addressed immediately so that the PA may be managed effectively.
7. The management requires boats and motorcycles for monitoring and patrolling.
8. The area has special needs because it is located in a coastal environment, the salinity is high, it is prone to earthquake damage, etc. Hence building maintenance requires special norms and there is a case for upward revision, particularly for maintenance of the field staff's residential buildings.
9. The local population generally supports conservation, but there are areas of conflict. When the question of livelihood arises, it needs to be resolved at the earliest.
10. The expectations of visitors are met, but considering the scope and opportunities, more needs to be done.
11. There are locations of archaeological importance within and around the PA. Similarly, there are potential sites in which there are geological features that have immense value in demonstrating geo-morphological changes and the corresponding floral and faunal attributes.

Shoolpaneshwar Wildlife Sanctuary, Gujarat Evaluation Year, 2009–2010

A. Management Strengths

1. Most of the values and threats have been systematically monitored and assessed.
2. The site has a comprehensive management plan.
3. The stakeholders are consulted for management plan
4. Habitat restoration programmes are generally well planned and monitored.
5. In-house training programmes are conducted.
6. Performance management for most of the staff members is directly linked to achievement of relevant management objectives.
7. EDCs help at the entry check posts. Wherever EDCs have been involved, they have proven to be effective.
8. There are coordinated system logs and the process responds effectively to most complaints.
9. Substantial livelihood issues are addressed by the PA management.
10. The expectations of many visitors are met. The present PA manager has put in efforts for developing eco-tourism through the EDCs.
11. A planned approach to management is being developed and deterioration of assets is being redressed.

B. Management Weaknesses

1. The site has some biotic interference due to the presence of 75 villages, with 6000 families. There are 18,000 Forest Rights claims and a total extent of 6000 ha is under encroachment.
2. There is no categorization into zones because zonation is not implementable on account of the large human pressure.
3. There is no process in place for systematically reviewing and updating the management plan.
4. Protection is particularly difficult on account of the interstate borders, difficult terrain and lack of staff for a large area.
5. The site has not integrated into a wider network or landscape. The Sardar Sarovar and Karjan dams have led to fragmentation and the presence of large tracts of agricultural lands.
6. Few resources are explicitly allocated for PA management. Resource allocation is ad hoc and funds are never released in time. The available resources are insufficient for most of the tasks.
7. NGOs have not contributed for the management of the site.
8. Some evaluation and reporting of management-related trends have been undertaken, but they are neither systematic nor routine.
9. Populations of threatened and endangered species are declining, only the Chowsingha population is stable.
10. The biological communities are unlikely to be able to sustain the native biodiversity.
11. The neighbours and adjacent communities are hostile.

C. Actionable Points

1. The biotic pressure on the site needs to be minimized immediately.
2. The site needs proper categorization into zones by reducing the large human dependency on the site.
3. The management plan should be updated routinely and in a timely manner.
4. The site requires an effective protection strategy wherein conflicts involving interstate borders are resolved and the availability of an adequate number of staff members is ensured.
5. The Sardar Sarovar and Karjan dams have led to fragmentation. There is a need for immediate mitigation measures for a wider network or landscape.
6. There is a need to pay attention to resource allocation and a timely release of adequate funds. Resources, both

- human and financial, allocated for management of the site need to be enhanced.
7. The site requires contributions of NGOs for long-term management.
 8. A proper and systematic study of management-related trends needs to be carried out on a priority basis.
 9. Strong research action needs to be taken to determine the cause of decline of populations of threatened and endangered species.
 10. Neighbour communities dependent to the site need to be involved for effective PA management.

5

Velavadar National Park, Gujarat Evaluation Year, 2009-2010

A. Management Strengths

1. Most of the threats and values have been systematically identified and assessed.
2. The site has a comprehensive management plan.
3. The management plan is routinely and systematically updated.
4. The site safeguards a large number of threatened biodiversity values.
5. Habitat restoration programmes are generally well planned and monitored.
6. The site has a comprehensive protection strategy and offence cases are minimal.
7. Many human-wildlife conflicts have been mitigated at the site. Crop raiding has been tackled by providing a 50% subsidy for barbed wire fences. Nature education camps are also undertaken to increase awareness among locals.
8. The existing personnel are well organized and deployed.
9. Help from NGOs is readily available.
10. There is systematic participation of the public in most aspects of PA management.
11. A complaint register and suggestion box is maintained and visitor complaints are addressed.
12. Substantial livelihood issues are addressed by the PA management.
13. Brochures and signage are available for the public.
14. Regular censuses of the Florican, harriers and wetland birds are undertaken, apart from censuses for the flagship Blackbuck.
15. The Blackbuck population has increased, while the Wolf population has remained stable. Hyenas have lately been reported and the population of Floricans has also reportedly increased.
16. Most of the biological communities are likely to be able to sustain the native biodiversity.
17. Most threats to the site have been reduced. Grazing and poaching have been reduced.
18. The expectations of most visitors are met.
19. Most of the neighbours and local communities are supportive to the PA management.

B. Management Weaknesses

1. The site has some biotic interference from the road that bisects the national park and the road on the periphery, causing road kills.
2. The site has been identified correctly but not been systematically categorized.
3. Funds are always inadequate and are not released in a timely manner. The available resources are not enough for most of the tasks.

C. Actionable Points

1. Some biotic interference arises due to the road bisecting the PA, causing road kills. This needs immediate mitigation measures.
2. The site needs proper categorization into zones.

3. Adequate funds and resources should be released in a timely manner. The available human and financial resources are insufficient for most of the tasks. In view of the ecological importance of the PA, the fund allocation by the Government of India needs to be enhanced immediately.

6

Gir National Park and Sanctuary, Gujarat Evaluation Year, 2012-2013

A. Management Strengths

1. The biological diversity of the area is great. It has been documented well, including 606 species of plant, 39 species of mammal, 37 species of reptile, over 300 species of bird and more than 2000 species of insect.
2. The multiple threats that the protected (PA) faced, viz. poaching, grazing, fires, removal of NWFP, pilgrimage, human-wildlife conflicts, habitat management, etc., have been systematically assessed and controlled.
3. This is the only natural habitat of the Asiatic Lion, and the tourist footfall is very large.
4. There is strong support for the management of the park from the people around, and the various stakeholders have been identified. They participate actively in the planning process.
5. There is a constant increase in the area occupied by the Lion population. There is almost no antagonism toward the Lions. The man-animal conflict on account of cattle predation, human injuries, crop damage and loss of property has increased, but the matching mitigation measures and prompt action taken by the staff save the situation.

B. Management Weaknesses

1. There are 326 families and 566 households in 45 villages within the PA. The human population is 4494, and the cattle population is 4241. Further, there are 97 villages within 5 km of the PA, which have a human population of 1,36,000 and a cattle population of 94,600. These populations exert a considerable pressure on the forest for their daily needs.
2. The areas adjoining the PA that form the Greater Gir Landscape are not within the territorial control of the park management.

C. Actionable Points

1. Not all sites in the PA attract projects and researchers because of systemic limitations. Monitoring some critical aspects such as the populations of the major predators and prey species and insights into their demography and distribution would be extremely useful.
2. The growth and activities of private lodges and hotels around the park should be monitored and regulated.

7

Purna Wildlife Sanctuary, Gujarat Evaluation Year, 2012-2013

A. Management Strengths

1. The sanctuary has good biodiversity values, with 110 species of plant, 142 species of bird, 24 species of mammal, 18 species of reptile and more than 3000 species of insect.
2. The area is contiguous with forests of the Dang, Vyara and Valsad forest divisions, with an extent of around 3000 km². The habitat of the sanctuary is intact and protected from external disturbances.

- 3. Stakeholders participate in the planning processes, and EDC meetings are held to discuss relevant issues.
- 4. Women participate in livelihood generation programmes conducted for the resource-dependent community.

B. Management Weaknesses

- 1. According to the records, there are 27 villages in the fringe areas of the sanctuary, with more than 11,000 cattle and an equally large human population, which consumes 30 tonnes of fuel wood each day. Grazing also exerts a considerable pressure.
- 2. The staffs are not trained in managing and containing human-wildlife conflicts.
- 3. There is a lack of wildlife-trained personnel, particularly among the frontline staff.
- 4. The key faunal species, such as the Leopard, Cheetal and Sambhar, are declining.

C. Actionable Points

- 1. Forester-level posts should be filled on priority.
- 2. The shortage of vehicles and buildings should be addressed in a phased manner for effective management.
- 3. The involvement of NGOs in the management of the sanctuary should be encouraged.

Sanjay Gandhi National Park, Maharashtra
Evaluation Year, 2006-2009

A. Management Strengths

- 1. Most of the threats and values have been systematically identified, assessed and monitored.
- 2. Following the directives of the Hon. High Court Mumbai in May 1997, human threats to the site have been curbed effectively and the site is free of most of the disturbances.
- 3. This national park is unique, being located in a metropolis and surrounded by a concrete jungle. Keeping in view, this unique position, the zonation provided in the plan is appropriate.
- 4. The site has a comprehensive management plan and has been written in conformity with guidelines, duly approved by the competent authority.
- 5. The site safeguards a large number of threatened biodiversity values.
- 6. The habitat restoration programmes are generally well planned and monitored. The management plan covers this issue adequately and in addition, habitat restoration after removal of encroachments has been provided for and tackled effectively. A soil and moisture conservation and grassland management plan has been provided.
- 7. The park management plan has an excellent protection strategy and has shown good results during the recent past.
- 8. The area is prone to high levels of conflicts, but effective mitigation measures are in place.
- 9. The site is fairly well integrated into a network or landscape. The park is located partly on an island and partly on the mainland. Except for the northern portion, it is surrounded by urban sprawl and thus its scope is limited. With the formation of Tungreshwar Sanctuary, the link with Tansa Sanctuary has been safeguarded. The formation of Tungreshwar Sanctuary in the north, has given the desired buffer.
- 10. This is comparatively a smaller area (103.78 km²) is under the direct control of a senior-level officer assisted by over 200 staff members.
- 11. Compared with other areas in the state, this park has better resources.
- 12. During the recent past there has been considerable participation of NGOs in eco-restoration, soil and moisture conservation and interpretation and education activities.
- 13. In the recent past, the park management has mobilized public support for the cause of conservation through tree

planting in lands freed from encroachments, water harvesting, interpretation and education (British Gas–BNHS initiative)

14. There are coordinated system logs and the process responds effectively to most complaints.
15. Few livelihood issues are addressed by the PA management, because of the urban background, the issue is not directly relevant.
16. Two interpretation centres and a Tiger orientation centre next to the Tiger Safari meet the requirements to some extent. The BNHS centre plays a complementary role.
17. The populations of the major carnivores and herbivores are monitored at periodic intervals. The forest cover mapping by the FSI is a useful tool.
18. Most of the biological communities are likely to be able to sustain the native biodiversity.
19. Most threats to the site have been reduced.
20. The expectations of most visitors are met.
21. Most of the neighbours and local communities are supportive of the management of the PA.
22. Geographically, the Kanheri caves are surrounded by the park and thus the park assists conservation of a rich cultural heritage.

B. Management Weaknesses

1. Comprehensive information on threatened species is yet to be compiled.
2. There is little opportunity for stakeholder participation in planning processes. During the drafting phase of the plan, the involvement of stakeholders was not provided for/in the system.
3. Funds are not available for habitat restoration programmes. There is scope for enhancing and timely release of funds.
4. There are very few trained officers and frontline staff.
5. The performance link with the management objectives has not been institutionalized, but there are checks and balances in the existing system.
6. This area is in the limelight due to its location. There is good outreach activity, but there is scope to improve the dissemination of information on key management issues.
7. Only major flagship species are monitored. The population of Leopards has reached the optimal capacity.

C. Actionable Points

1. A comprehensive list of threatened species needs to be compiled.
2. Opportunities for stakeholder participation in planning need to be explored.
3. Habitat restoration is very important for long-term sustenance of a site. Hence the availability of funds should not be a limiting factor; adequate funds need to be released on time.
4. Some of the key elements expected in this bio geographic zone, like the Rusty-Spotted Cat and Otters need be to be re-introduced. Presently, there is no plan for the same.
5. There is scope to deploy suitable trained staff for various jobs in zoo management, nature interpretation and education in the multiple-use zones. Coordination with and active support at the institutional level by NGOs such as the BNHS are recommended to bridge the gap in the sphere of monitoring and research.
6. Additional facilities to improve the visitor services near the Kanheri caves are recommended.
7. Illegal settlements have been and will be a threat to the park. The non-forest resource-dependent population housed in high-rise buildings needs to be involved to gain its support for management of the site.

Navegaon National Park, Maharashtra Evaluation Year, 2006-2009

A. Management Strengths

1. Threats are well perceived and documented.
2. Conservation has been practiced since 1975. This has given good protection, and a section of the locals have turned dedicated conservationists.
3. The site has a properly written and duly approved management plan, which is routinely updated in a timely manner.
4. The site safeguards a large number of threatened biodiversity values. Potentially rich habitats of a number of key elements i.e. Sarus Crane, otters, vultures etc. Large numbers of floral and faunal elements of relevance are being protected.
5. The habitat restoration programmes are generally well planned and monitored. Availability of water is considered a limiting factor and suitable measures have been taken by the park management.
6. The site safeguards a large number of threatened biodiversity values.
7. The local community helps with protection and takes part in population estimation exercises.
8. The system of Lokayukta, access to the press, and close supervision by elected representatives and now the Right to Information Act are adequate for redressal of complaints.
9. Visitor facilities such as a camp site and forest rest houses are located outside the national park, which is a positive point. Provision of local guides has started recently and this is a step in the right direction.
10. Populations of most threatened and endangered species are increasing, and most others are stable.
11. Most biological communities are able to sustain the native biodiversity.
12. Most threats to the site have been reduced.
13. The expectations of most visitors are met.
14. Most neighbours and local communities are supportive of the PA management.

B. Management Weaknesses

1. Values not systematically documented, assessed or monitored.
2. The fringe areas are prone to pressures; there is one large and three small villages inside the PA. The core area is comparatively free and there is no buffer zone. There are Naxal activities and hence law and order is a major problem.
3. The site has been identified correctly but has not been categorized.
4. There is little opportunity for stakeholder participation in planning.
5. The site has few human wildlife conflicts.
6. The site is not integrated into a wider network or landscape.
7. Release of Central assistance is not in time for optimal utilization. There are no provisions for vaccination, crime detection training, secret funds, boundary demarcation and other essential activities.
8. The resources are insufficient for most tasks. Protection, research, monitoring and education are inadequate.
9. None of the staff members has undergone any regular wildlife training.
10. No livelihood issues are addressed by the PA management. There is scope for extensive eco-development activities.
11. Little or no information on PA management is publicly available. Important details such as the management plan are not available publicly. Brochures, posters or handouts given as a part of extension material normally do not give management-related information.
12. Management related trends such as forest cover and population estimates of some key species are reported, but this is not adequate.

- 13. There is no systematic inventory or schedule of maintenance of assets.
- 14. No heritage sites have been reported from within the PA.

C. Actionable Points

- 1. The park encompasses semi-moist deciduous forest and is a representative of transient bio-geographic zonation. The important values of the area need to be studied and documented.
- 2. A rethinking on extent of the park and zonation is called for. There is a need to create a buffer zone through community conservation areas
- 3. Though there were no provisions earlier, new amendments provide scope for consultations. The Chief Wildlife Warden should ensure better participation of local stakeholders.
- 4. The PA is not integrated into a wider network. Urgent efforts are required in this direction.
- 5. The Deputy Conservator is assisted by the Assistant Conservator and a field staff of 30 persons for 133 km². This staff strength is in conformity with staff norms, but additional staff members are recommended for monitoring, outreach extension and education activities.
- 6. Adequate resources need to be allocated and funds released timely for the management of the PA.
- 7. Urgent steps are needed to train the frontline staff in wildlife conservation for management of the site.
- 8. There is scope to promote ecotourism involving villagers on the park fringes, converting existing gardens into Medicinal Plant Conservation Areas (MPCAs) with the involvement of the MPCA committee.
- 9. Only major faunal species are monitored and there is no focus on plants and lower vertebrates. There are interesting birds such as the Sarus Crane, vultures and aquatic birds. Animals such as otters need to be monitored regularly.

Bhimashankar Wildlife Sanctuary,
Maharashtra,
Evaluation Year, 2006–2009

A. Management Strengths

- 1. Most threats have been systematically identified and assessed. Almost all the threats to the protected area (PA) have been documented, but demands for de-notification/diversion for non-wildlife use, such as roads, religious tourism (*Bhakta Nivas*) and irrigation projects are increasing.
- 2. The present management plan has the distinction of being the first duly approved management plan.
- 3. The site safeguards a large number of threatened biodiversity values.
- 4. Habitat restoration programmes are planned and their monitoring processes are indicated in thematic plans into the management plan.
- 5. A protection strategy that includes provisions for vehicles, wireless, religious tourism management, etc. is in place. The recent removal of encroachments from the approach to the Shiva temple represents a unique conservation effort. The establishment of temporary check posts and deployment of additional persons are steps in the right direction.
- 6. A study conducted on the Leopard problem in the adjoining area has given an insight into the complex issues involved. Within the PA and in its immediate vicinity, the problems are not acute, and systems are in place to mitigate them.
- 7. Considerable inputs are being provided by NGOs such as WWF, Kalpavriksh, BNHS and Symbiosis.
- 8. Visitors come mainly for the temple and the potential of serious wildlife education/tourism is sub-optimally utilized.
- 9. The status of the flagship species, *Ratufa indica* has improved substantially within and outside the PA.
- 10. The status of the biological communities is good, and considerable regeneration was observed.

B. Management Weaknesses

1. The site has been identified correctly with notification dated 19/9/1985 under Wildlife (P) Act, 1972 (section 18) but not categorized due to pending of final declaration.
2. The ecological boundaries are inadequately defined, and demarcation processes are on. The total area 115.65 km² is spread over three forest divisions/districts and two circles, as a result of which there are administrative problems.
3. The management plan is not comprehensive.
4. The prospects of networking have been examined, but the links with adjoining PAs are tenuous and difficult to strengthen because of administrative reasons or the land use pattern.
5. Adequate resources are available for developing the infrastructure but the running costs are reported to be a constraint.
6. Some evaluation and reporting of the management related trend has been carried out, but these are neither systematic nor routine.
7. The inventory maintenance is ad hoc, and so is the maintenance schedule. The financial resources available are insufficient.
8. The threats have been kept under control, but still there is scope for improvement for full control and recovery.
9. Wildlife visitors are not fully satisfied.
10. There is some management activity, but there is deterioration in management of heritage values.
11. The cultural and heritage values of the site need to be adequately protected.

C. Actionable Points

1. The site needs immediate final notification for demarcation into respective zones.
2. Immediate steps need to be taken to prepare a science-based comprehensive management plan for the site.
3. There is scope for establishing conservation/community reserves corridors to create a wider network.
4. Environmental education, eco-tourism and research and monitoring deserve more attention.
5. Evaluation of management-related trends is suggested in the management plan, but this needs to be practiced in letter and spirit.
6. The trained manpower available is adequate, but more capacity building is needed.
7. Eco-development and eco-tourism activities provide livelihoods, but more focused efforts are needed to develop these.
8. Processes are reported to be in place for carrying out repairs to the temple, but they should be followed through better regulation of religious tourism to protect the cultural heritage.
9. Immediate steps need to be taken to assess the biodiversity, especially the wildlife, to attract eco-tourism.

Chandoli National Park, Maharashtra
Evaluation Year, 2009-2010

A. Management Strengths

1. Most of the threats and values are systematically identified and assessed.
2. There is a management plan and revision is due in 2011, but since the Sahyadri Tiger Reserve has been declared, the next management plan will be part of the Sahyadri Tiger Reserve.
3. The site safeguards a large number of threatened biodiversity values.
4. The site has a comprehensive and very effective protection strategy.
5. The level of conflicts is very low since the protected area (PA) has a very small human population.

6. The site is integrated fairly well into a network/landscape.
7. Contributions are systematically sought from NGOs and negotiated for management of some site-level activities.
8. Performance of most staff members is directly linked to achievement of relevant management objectives.
9. There is systematic public participation in most aspects of the PA management. Thirty-five meetings were held with people from the adjacent villages.
10. The local people do not depend on the PA for resources.
11. Signage has been installed and an interpretation centre is in place for providing information to the public.
12. A 10-bed dormitory was opened in 2009 for providing accommodation to visitors.
13. The populations of most of the threatened/endangered species are increasing, and most others are stable.
14. Most of the biological communities will likely be able to sustain native biodiversity
15. Most threats to the site have been reduced. Threats have been minimized by creating check posts.
16. The expectations of many visitors are met.
17. Most neighbours and communities are supportive to the PA management.

B. Management Weaknesses

1. The site has some biotic interference due to the presence of five villages having about 1000 feral cattle's, as a result of which there is a threat of disease and competition for food.
2. The site has been identified correctly but not systematically categorized.
3. Revision of the management plan is due.
4. There are few habitat restoration programmes and the funds for grassland areas are inadequate. No systematic monitoring has been undertaken.
5. Marsh Crocodiles have been reintroduced but on an ad hoc basis when they posed a threat in other areas.
6. Funds are always inadequate and are not released in a timely manner. The resources are insufficient for most of the tasks. The allocation of personnel is extremely inadequate, only eight guards, two foresters and one RFO for 317 km² area.
7. There are very few trained officers and frontline staff at the site.
8. There are few complaints, but these are not documented systematically.
9. There is a shortage of staff and guides and boarding facilities for tourists are inadequate.

C. Actionable Points

1. The biotic interference due to the villages and feral cattle needs immediate mitigation measures.
2. The site needs proper categorisation into zones. The zonation needs to be followed on the ground.
3. Strong actions need to be taken to revise the management plan of the site immediately. Increased scientific inputs are needed for the revision.
4. The habitat restoration programme needs adequate funds for systematic monitoring.
5. Urgent steps need to be taken to assess the threats created by the introduced Marsh Crocodile.
6. Adequate funds and resources should be released on time. The human and financial resources are insufficient for most of the tasks. In view of the ecological importance of the PA, the Government of India needs to enhance the fund allocation.
7. The site needs trained frontline staff for management of the PA.
8. The very few complaints need to be documented and addressed systematically.
9. The facilities available for tourism need to be improved.
10. A landscape level approach and integrated planning, including the new TR and treating the Konkan slopes as buffer, should be adopted, to develop a wider network landscape.

Chaprala Wildlife Sanctuary, Maharashtra

Evaluation Year, 2009-2010

A. Management Strengths

1. Most of the values and threats are systematically monitored and assessed.
2. The site has a comprehensive management plan.
3. Many human-wildlife conflicts at the site have been mitigated.
4. Chaprala has been included in the Tadoba Management Plan as part of the larger landscape.
5. Some resources have been explicitly allocated towards achievement of specific management objectives.
6. Performance management for most of the staff members are directly linked to achievement of relevant management objectives.
7. There are coordinated system logs and the process responds effectively to most complaints.
8. Signage's, nature interpretation centre and nature trails have been created for visitors. Most of the tourists visited in the temple complex located within the PA for the annual religious festival.
9. The populations of some threatened/endangered species are increasing, and most others are stable. The Giant Squirrel population is stable and two transient tigers were reported this year.
10. Most of the threats to the site have been reduced.
11. Very few wildlife tourists and their expectations are met.
12. A planned approach to management is underway and deterioration of assets is being redressed.

B. Management Weaknesses

1. The site has extensive human and biotic interference due to the dependency of large numbers of humans and cattle.
2. There is no categorization into zones because zonation is difficult to implement: the area is small and multiple entry points provide relatively easy access.
3. There is no process in place for systematically reviewing and updating the management plan.
4. There are few, if any, opportunities for stakeholders to participate in planning processes.
5. The habitat restoration programmes not successful due to a lack of adequate staffs and resources.
6. The resource allocation is ad hoc, and funds are never released in time. Resources are insufficient for most of the tasks.
7. NGOs do not contribute for the management of the site.
8. The PA requires trained frontline staff.
9. There is little or no public participation in the management of the PA. The LPG cylinders given to the villagers have been returned to the PA management and maintenance of the biogas units constructed as part of the EDP is an issue
10. Wildlife tourism is limited. The presence of the temple complex inside the PA affects the site adversely and five entry points for the annual religious festival at the temple is causing considerable disturbance.
11. Some evaluation and reporting of management-related trends have been undertaken, but these efforts are neither systematic nor routine.
12. The tremendous human and cattle pressure is a threat to the sustainability of the biological mix up. Proposals for several measures have been put forth, but funds are inadequate.

C. Actionable Points

1. The biotic pressure needs to be minimized immediately by reducing the dependence of large number of humans and cattle population, which is a danger to the sustainability of the site.

2. The site needs proper categorization into zones by mitigating the number of entry points.
3. The management plan should be updated routinely and in a timely manner.
4. The participation of stakeholders in the management of the PA should be enhanced.
5. The habitat restoration programs need to have adequate funds and staff members at the site.
6. There is a need to pay attention to resource allocation and timely release of adequate funds and to enhancement of resources, both human and financial, for management of the site.
7. The site requires contributions of NGOs for long-term management.
8. More trained staff members need to be posted at the site for management of the PA.
9. There is a need to enhance the public participation in the PA management through planned EDCs.
10. Strong and urgent steps need to be taken to reduce the pressure, which is due to the presence of the temple complex inside the PA.
11. A proper and systematic study of management related trends needs to be carried out on a priority basis.

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Great Indian Bustard (GIB) Sanctuary, Maharashtra Evaluation Year, 2012-2013

A. Management Strengths

1. This is one of the good habitats left in the country for the Great Indian Bustard (GIB). More than 40 species of grass have been recorded in the area.
2. Infrastructure such as buildings for the subordinate staff, rest houses, NIC buildings, communication networks (except wireless sets) is present and is sufficient.
3. Despite the severely fragmented habitat and the various uses to which the occupied area within the sanctuary is put, the threats have been effectively contained, and the credit goes to the staff of the sanctuary.

B. Management Weaknesses

1. Due to the invasion of the grassland by woodlands, the area has lost its uniqueness, and the grassland is present in patches, as a result of which the uniformity and integrity of the habitat have been destroyed. The situation is aggravated by the presence of agricultural lands, villages, towns, roads and a railway line, which are spread across the entire sanctuary.
2. There is a lot of pressure from the adjoining villages, of which there are 321 within the notified area of the sanctuary, due to grazing, fuel wood collection, and removal of grasses and illicit felling of trees. The presence of weeds further threatens to destroy the grassland.
3. There are cases of man-animal conflicts in the form of crop raiding by blackbucks and biting by wolves. Some animals are killed in road accidents as well.
4. Due to the fragmentation of the habitat and the diverse and conflicting land use, it is very difficult to protect the entire habitat.

C. Actionable Points

1. There are reserve forests and some private agricultural lands, village lands and townships within the sanctuary. This needs to be rationalized by forming a single contiguous ecological unit with distinct core and buffer areas.
2. Funds should be made available before the monsoon to control illicit grazing by village cattle.
3. Mechanisms need to be put in place for carrying out research on the GIB and monitoring it. These mechanisms should be religiously followed.
4. The staff strength should be increased so that patrolling and conflict management are effective.
5. There is no involvement of and contribution from NGOs. It should be encouraged.

14

Karnala Wildlife Sanctuary, Maharashtra Evaluation Year, 2012-2013

A. Management Strengths

- 1. The sanctuary has been bestowed with a rich biodiversity and a mosaic of habitats. There are specific ecological niches for diverse varieties of plants and animals, including a few endemic species. Geologically, the area falls within the Deccan Traps, which is as old as the Cretaceous and the Eocene age. The presence of Karnala fort adds to the historical richness of the area.
- 2. Practically no human-wildlife conflict has been reported except for mortality along NH 17.
- 3. The management infrastructure is adequate.

B. Management Weaknesses

- 1. The very small size of the sanctuary (12 km²) and the presence of six villages on the fringe do create pressure on the resources of the sanctuary.
- 2. NH 17, connecting Mumbai with Goa, passes through the sanctuary and creates disturbances throughout the year, including the night times.
- 3. The tourism zone has an extent of only 0.35 km².

C. Actionable Points

- 1. The sanctuary is surrounded by forests of the Alibaug Forest Division, and there are no fragmented forests in the vicinity, but its contiguity with other forest areas should be explored.
- 2. The strength of the staff designated for ecotourism management and monitoring should be increased. Additional funds should also be allotted for tourism facilities.
- 3. The non-plan funds should be made available regularly for maintenance of the infrastructure.

15

Kuno-Palpur Wildlife Sanctuary, Madhya Pradesh Evaluation Year, 2006-2009

A. Management Strengths

- 1. Most threats have been systematically identified and assessed. In the past there have been law and order problems due to infestation with dacoits, ill treatment of forests and unrestricted grazing of local and migratory cattle from Rajasthan.
- 2. Presently the site has no biotic interference. The process of shifting villages began in 1997 and till today 24 villages have been resettled. There is a comprehensive and coordinated relocation activity.
- 3. The site has been a well recognized conservation area with no commercial exploitation for a long time. The very comprehensive zonation is the result of a policy decision with an extensive buffer around it.
- 4. Eco-development committees exist in all the villages. There is a high-power committee to oversee rehabilitation; however, compliance with Section 33B of the Wildlife (Prot.) Act is yet to be achieved.
- 5. The habitat restoration programmes are generally well planned and monitored. The shifting of villages has contributed to eco-restoration in a big way and the recovery of the habitat is being monitored by competent researchers under the guidance of the Wildlife Institute of India, Dehradun.

6. The park management has a strategy to combat threats and a rehabilitation plan is in place. Wire mesh fencing is being installed for soft release of Lions. The fencing will also protect meadows that are being developed for safeguarding the lions and minimize man/animal conflicts.
7. The importance of a possible corridor with Ranthambore Tiger Reserve has been indicated in the plan. Linkage with Chambal Wildlife Sanctuary in Rajasthan is under consideration.
8. The compensation for loss of land is inadequate and this may become a sensitive issue. Other than this, the resources are adequate and organized for most of the tasks.
9. The population estimation exercise of the major carnivores and herbivores has been undertaken at regular intervals. An independent agency has also carried out this exercise.
10. There is a good conservation history and thus the forest cover is good with mature tree crop. Shifting of villages will result in the development of meadows and young crops.
11. Most neighbours and local communities are supportive to the PA management; however, there is scope for improvement.

B. Management Weaknesses

1. A management plan was drafted by Chaudhari for a period ending 2005. The area around the present sanctuary needs to be brought under the plan, possibly as a multiple use area. Prior to getting the sanctuary status, a working plan drafted by Maharshi was in place.
2. The park management is planning to reintroduce Lions. This is Tiger habitat, but the emphasis has shifted to the Lion. The planning for reintroduction and monitoring is limited. A "soft release" of Lions is a major goal and will be a great achievement, when accomplished.
3. NGOs contribute nothing to the management of the site.
4. Few trained officers and field staff are in place, training is needed.
5. There are number of committees for eco-development, however, there is no statutory compliance with Section 33B of the Wildlife (Prot.) Act, 1972.
6. There is no specific complaint redressal system; however, supervision of elected representatives, access to the press, institution of Lokayukta and the Right to Information Act are adequate tools.
7. Management and policy decisions are made without public debates and information is not available in the public domain. Brochures and handouts are distributed in a routine way.
8. Presently there are no visitor services; the visitor flow has not been started as yet.
9. Inventories of assets are ad hoc and paucity of funds jeopardizes maintenance schedules.
10. There are some management activities, but the deterioration of cultural heritage continues.

C. Actionable Points

1. There is an urgent need to finalize the draft management plan of the site.
2. Reintroduction of the Lion needs to be carried out on high priority after assessing the suitability of the site and requirement of the species.
3. The contributions of NGOs should be enhanced for management of the PA.
4. More frontline staff needs to be trained in wildlife management.
5. There is a need for a specific complaint redressal system for handling complaints.
6. There is a high power committee to oversee the rehabilitation process; however compliance with Section 33B of the Wildlife (Prot.) Act is yet to be achieved. The PA manager opines that the issue of the person chairing the committee needs to be reconsidered and should be resolved first at the policy level.
7. The park management has a strategy to combat threats and a protection plan is in place. Wire mesh fencing is being installed for the soft release. This fencing will also protect meadows that are being developed for safeguarding Lions and minimize man-animal conflicts. Where ecological boundaries are not secure, fencing is needed.
8. Damage to human life within a PA is not entitled for compensation. Domestic and feral cattle control is a key issue. The process of shifting villages, which has begun, needs to be completed immediately.
9. Research and monitoring need higher priority and there is scope for improvements in the release of funds.
10. Immediate steps need to be taken to start services for visitors for eco-tourism.

Madhav National Park, Madhya Pradesh

Evaluation Year, 2006-2009

A. Management Strengths

1. The site is a well recognized conservation area. In the pre-independence era it was a "shikar block".
2. The site has a comprehensive management plan.
3. There are eco-development committees in 29 villages. There is scope for involvement of town councils, M.P. Tourism Corporation, etc.
4. The park management has a strategy to combat threats, a rehabilitation plan is in place and wire mesh fencing is being installed to protect the site.
5. The resources are adequate and organized.
6. Visitor services are available outside the protected area (PA). The M.P. Tourism Department runs camping facilities and a well developed interpretation centre.
7. A population estimation exercise for the major carnivores and herbivores is undertaken at regular intervals in a routine way and there is increase in the number of crocodiles.
8. There is a good conservation history and thus there is good forest cover and mature tree crops are present. Shifting of villages will result in the development of meadows and young crops.
9. Most of the neighbours and local communities are supportive to the PA management; however, there is scope for improvement.
10. Structures such as Old Baradari, George Castle and watch towers have good potential for development of cultural tourism.

B. Management Weaknesses

1. Values and threats have been generally identified but have not been systematically monitored and assessed.
2. The site is not free from biotic interference because of the proximity of Shivpuri town. Two national highways have made the park vulnerable. After the recent amendment to the Wildlife (Protection) Act, all the restrictive measures are applicable to these areas and alternative arrangements are required to reduce pressure.
3. The site has been identified correctly but not systematically categorized.
4. Adequate provisions exist for revision of the management plan.
5. Few planning and monitoring programmes are in place for habitat restoration and reintroduction programmes.
6. The site is not integrated into a wider network or landscape. The peculiar geographical situation, networking within the state has its limitations.
7. Research and monitoring need higher priority and there is scope for improvements in the release of funds.
8. NGOs do not contribute for the management of the site.
9. There are very few trained officers and frontline staff.
10. There is no specific complaint redressal system; however, supervision of elected representatives, access to the press, institution of Lokayukta and the Right to Information Act are adequate tools.
11. No livelihood issues are addressed by the PA management. With the status of a national park, the options are limited, but till habitations are resettled and a buffer provided around the PA, problems will persist. Availability of forage and fodder is a key issue, resulting in semi-feral or feral cattle being present. The presence of urban poor in the surroundings of the PA is going to be a serious matter.
12. Management and policy decisions are taken without public debates and information is not available in the public domain. Brochures and handouts are given out in a routine way.
13. Inventories of assets are ad hoc, and a paucity of funds jeopardizes maintenance schedules.
14. Populations of threatened and endangered species are declining.
15. There are some management activities, but deterioration of cultural heritage continues.

C. Actionable Points

1. Values and threats need systematic monitoring and assessment.
2. Shivpuri town and two national highways have made the park vulnerable; urgent steps are needed to mitigate the vulnerability.
3. The site needs to be proper categorization into zones.
4. The management plan should be routinely updated in a timely manner.
5. It has been noticed that there is an infestation of weeds such as Lantana. There is need to keep in place a permanent vegetation monitoring plot mechanism by involving the state forest research institute or local academic institutions. Areas close to the town in particular need restoration in a big way. There are signs of overgrazing even within the core zone and thus closure plots are expected to be a tool for restoration in this area.
6. The accidental straying of a Tiger into the park resulted in “animal safaris” that were in contravention of legal provisions. They have now been almost closed down. A soft release of an adequate number of Tigers and close monitoring, as a new concept, need to be pursued. Reintroduction of floral components that may be missing may also be tried.
7. There is a need to research the scope of a wider network of PAs.
8. It is advised to see the order of the Hon. Mumbai High Court in the context of Sanjay Gandhi National Park, Borivali and learn more about this park as a case study for an effective protection strategy.
9. The contributions of NGOs to the management of the PA need to be enhanced.
10. More frontline staff needs to be trained in wildlife management.
11. The national park lacks an effective buffer and any damage to human life within the park is not entitled for compensation. Domestic and feral cattle control is a key issue. The process of shifting villages, which has begun, needs to be completed early.
12. Visitors are partly satisfied and there is a need to sensitize and educate tourists through concerted efforts.
13. There is a need for a specific complaint redressal system for handling complaints.
14. Research and monitoring need higher priority and there is scope for improvements in the release of funds.
15. Immediate steps need to be taken to find out the cause of the decline in the threatened biodiversity.

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Ratapani Wildlife Sanctuary,
Madhya Pradesh
Evaluation Year, 2006–2009

A. Management Strengths

1. Most of the values and threats have been systematically identified and assessed. Threats to the wildlife due to poaching, uncontrolled grazing and the consequent possibility of contagious diseases, habitat destruction by fire, illicit tree felling and collection of minor forest produce (MFPs), etc. have been identified.
2. There is a management plan. The old plan was extended for almost 20 years without revision. The present plan has just begun and the next revision is due after 2018.
3. The site safeguards a large number of threatened biodiversity values.
4. Many human-wildlife conflicts at the site have been mitigated. The human-wildlife interface is not very alarming and extreme mitigation measures such as giving permissions to kill Wild Pigs/Blue Bulls causing damage to agriculture are in place. Compensation for loss of human life or injury is in place and is said to be effective as seen from the records (injuries caused by Bear, deaths due to Leopards, etc. have been reported). No inordinate delays have been reported, and cases of unauthorized graziers not getting compensation are reported.
5. The site is fully integrated into a wider network or landscape. The sanctuary is surrounded by forests at some places. Connectivity (a corridor) on the eastern side with Singhory Sanctuary has been ensured.

6. A large number of trained officers and frontline staff are posted at the site.
7. Eco-development funds have been utilized for livelihood support (Rs.40 lakhs during 2001–2004). Within three forest villages and two revenue villages, Sewing machines, Paper Machines and 16 women forest guards were appointed. A total of 52 Ecodevelopment Committees within and outside the 32 villages are associated with the park.
8. Visitor services are available at the MPTDC (Madhya Pradesh Tourism Development Corporation) complex at Delawadi/Bhimbetaka. Information centres are planned at Bhimbetaka and Barrusot. There is a plan to upgrade the information centre at Delewadi. Upgrading forest rest houses and inspection huts at three places is planned.
9. Most of the biological communities are likely to be able to sustain the native biodiversity. Field visits indicated that there is a good mix of ages. Varied forest types at various stages of ecological succession were observed.
10. There are laudable attempts to minimize the threats.

B. Management Weaknesses

1. The site has been identified correctly but not categorized into zones.
2. There is a management plan, but it is not comprehensive.
3. The potential of the area is well recognized. A recent estimate of the population of the key species, the Tiger, indicates that it is declining.
4. New provisions under the Wildlife (Protection) Act, 1972 and its amendments make it mandatory to have advisory committees, Honorary Wardens, etc., but such measures are not in place. The participation of stakeholders at the divisional and local levels is thus not adequate.
5. The site has an ad hoc protection strategy.
6. As of today, not much NGO involvement is seen on the ground. The reported formation of the Ratapani Foundation augurs well.
7. There is no linkage between staff performance management and the management objectives as there is no institutional arrangement.
8. Little or no information on the management of the PA is publicly available.
9. The participation of the public is not organized and there is considerable scope for improvement.
10. A complaint handling system is operational, but it is not responsive to individual issues and limited follow-up is provided.
11. There is little or no systematic evaluation or routine reporting of management-related trends. Estimation of the populations of threatened species on a regular basis is called for. Scientific and transparent methods are needed as authentic figures are not readily available. The Tiger population estimates show a decline [from 21 to 12]. There have been no bird counts, but an IBA has been declared based on the IBA criteria.
12. Tourism is still at a nascent stage; hence the expectations of visitors at this stage are not appropriate.
13. The cultural and heritage values need to be strengthened.

C. Actionable Points

1. The site needs categorization into zones.
2. Immediate steps are needed to develop a science-based comprehensive management plan.
3. There is a need to establish vegetation monitoring plots and permanent transects for animal population estimates and evaluation of management trends. There is an urgent need to determine the cause of the decline in the numbers of the key species like Tiger.
4. The participation of stakeholders in management planning is to be enhanced.
5. The site needs an effective protection strategy.
6. NGOs need to be involved and the Ratapani Foundation needs to be formed for managing the PA.
7. There is a need to develop a linkage between the staff performance and management objectives through institutional arrangements.
8. Information on the management of the PA needs to be available to the public.
9. The participation of the public needs to be enhanced for effective PA management.
10. There is a need for a specific complaint redressal system for handling complaints.
11. Immediate steps need to be taken to start visitor services for ecotourism.

12. The site has tremendous potential in the form of cultural heritage and is recognized as a World Heritage Site. However, present PA management shows little convergence with the Archaeology Department. There is considerable potential to use the site to demonstrate linkages between nature and culture. Evolution processes can be demonstrated in an appropriate manner. The link between human beings and the environment could be stressed and explained. The Kakadu National Park in Northern Territory, Australia is strongly recommended as a model.

Noradehi Wildlife Sanctuary, Madhya Pradesh Evaluation Year, 2009–2010

A. Management Strengths

1. Most of the values and threats are systematically monitored and assessed.
2. The site has a comprehensive management plan.
3. The site safeguards a large number of threatened biodiversity values.
4. From time to time, consultations are carried out to involve stakeholders in the management of the PA.
5. Extensive water conservation and habitat improvement works are undertaken.
6. The site has a comprehensive protection strategy and weapons, wireless sets and mobile units are available.
7. In terms of a wider network, the southern side, up to the Narmada, has forest connectivity. Along the eastern boundary and on the western side, there is only agricultural land.
8. An NGO from Rewa provides support in terms of technical advice. Others work as intermediaries and provide suggestions.
9. The resources are sufficient for most of the tasks. NREGA input has added to the financial resources (Rs.1.8 crore in 2009–2010).
10. There is no participation of the public in the management of the PA, but where works are likely to affect people, they are consulted.
11. A Jan Survey is conducted on every Tuesday. A proper complaint register is maintained in the office.
12. Substantial livelihood issues are addressed by the PA management. Villagers have been employed for road work, etc. and as fire watchers. Water conservation work has increased the agricultural productivity of the land and has in turn reduced the dependence of the people on the forest.
13. Publicly available information provides detailed insights into major management issues of the PA.
14. There are very few visitors to the wildlife sanctuary (around 1200); however pamphlets have been made available for them.
15. Beat guard's record and maintain diaries for management-related trends.
16. The numbers of the Nilgai and Chinkara are increasing; however the trend of the Wolf, the flagship species, is not available.
17. Most biological communities are likely to be able to sustain the native biodiversity.
18. Crop raiding by Nilgai has been reduced as a result of the construction of a stone wall.
19. The expectations of many visitors are met.
20. A planned approach to management is being developed, and the deterioration of assets is being redressed.

B. Management Weaknesses

1. The site has some biotic interference due the presence of large human and cattle population dependent on the PA. With 69 villages depending on the PA, there is one village for every 18 km². The exclusion of 13 villages on the eastern border has been proposed after realignment of the boundaries.

- 2. There is no categorization into zones.
- 3. There is no linkage between the staff performance management and management objectives.
- 4. There is little or no participation of the public in the management of the PA.
- 5. The trend of the Wolf, the flagship species, is not available.

C. Actionable Points

- 1. There are some biotic pressure on the site, such as the large human population and the cattle from 69 villages. This pressure needs to be minimized immediately. The grazing issue need to be tackled for conflict mitigation.
- 2. The site needs to be properly categorized into zones.
- 3. Staff performance should be linked to the management objectives of the PA.
- 4. The participation of the public should be enhanced for long-term management of the PA.
- 5. Immediate actions need to be taken to develop a nature interpretation centre.
- 6. A proper systematic study of the population trend of the Wolf, the flagship species of the site, needs to be carried out on a priority basis.

Karera Wildlife Sanctuary, Madhya Pradesh Evaluation Year, 2012-2013

A. Management Strengths

- 1. Immediate correction measures to reclaim the lost ground are taken, it could start breathing again. It could, to a small extent and in a small area, become a tourist spot.

B. Management Weaknesses

- 1. The area, which once comprised extensive grasslands and shrubby patches, is being encroached upon. This has resulted in habitat loss, degradation and fragmentation of the habitat of the Great Indian Bustard (GIB).
- 2. Though the sanctuary was notified primarily for the GIB, the bird is reported not to be seen now. The agricultural fields and water resources have maintained a token presence of blackbucks and waterbirds.
- 3. The presence of 33 villages, with a human population of 3600 and an equal number of cattle, inside the sanctuary and encroachments on revenue lands for agriculture and for irrigation canals have resulted in degradation of the GIB habitat. They have also alienated the local people since they have not been able to exercise their sovereign rights on their lands fully. Expansion of agriculture into adjacent grasslands, drainage of wetlands for conversion into agricultural fields and sand mining were prevalent in the area.
- 4. There is no forest land in the sanctuary area. There are revenue lands and private lands.

C. Actionable Points

- 1. The notification of areas included in the sanctuary needs to be rationalised as it neither serves the purpose for which it was created nor benefits the people around. There is practically no wildlife conservation or tourism activity, and the field staffs are constantly under pressure. Immediate measures to stop further encroachment are required; a concerted effort should be made by all to retrieve whatever is left of the habitat, along with the adjoining forests and grasslands. Suitable private lands should be acquired after giving adequate compensation to make the sanctuary a viable proposition.
- 2. The vacancies among the frontline staff should be filled urgently, preferably from the local area, and wildlife training should be imparted to the staff members.

Keoladeo National Park, Rajasthan Evaluation Year, 2006-2009

A. Management Strengths

1. All the values have been systematically identified, assessed and monitored. The site has been studied extensively by researchers from WWF-India, BNHS, SACON, WII and a host of other organizations. As a result, there are 15 doctoral studies and hundreds of research papers.
2. All the threats have been systematically identified and assessed.
3. Well designed zonation has been provided. The scope for eco-development activity is well defined.
4. The management plan is science based and comprehensive. Inputs from different sources have been incorporated and there is a timely update process.
5. The site safeguards large number of threatened biodiversity values.
6. Stakeholders participate in most of the planning processes.
7. Habitat restoration programmes are generally well planned and monitored. The quantity and time of water release into the park are major tools for maintaining the ecological integrity. Controlled forest fires, grazing, removal of grass and inflammable material to reduce the fire hazard and eradication of invasive aquatic and terrestrial weeds have been given importance by the park management.
8. Reintroduction programmes are generally well planned and monitored. For biological control of feral cattle and dogs, it is necessary to reintroduce Leopards. Reintroduction of the Siberian Crane is a multifaceted issue and needs international cooperation too.
9. The site has a comprehensive protection strategy, but this is not very effective.
10. Grass cutting or removal of firewood will help earn the goodwill of the local communities.
11. To create a wider network of landscapes, the park management has identified satellite wetlands, which are important for avifaunal conservation.
12. With an area of 29 km², the park staffs are headed by the Deputy Conservator of Forests, who is assisted by an Assistant Conservator of Forests, three Range Forest Officers and an adequate number of subordinate staff members. Duties need to be assigned and resource allocated as necessary to achieve the management objectives.
13. Two jeeps, six motor cycles, Canthers, tractors, Electra vans, Tempos, etc. for mobility, a wireless network for communication, and firearms for protection and administrative and residential quarters are available to the staff.
14. Contributions are systematically sought and negotiated for from NGOs by the management for some site-level activities. Considerable inputs have been provided in the sphere of research, but these may not always be based on the needs for management of the protected area (PA). WWF has provided vehicles and an interpretation centre.
15. The human resources are sufficient.
16. A large number of trained officers and frontline staff are posted at the site.
17. Conventional management control ensures a linkage between staff performance and management objectives.
18. WWF conducted a number of sensitization programmes for the people around the park. The forest department has carried out eco-development activities. Rikshaw pullers and guides, the stakeholders, do render assistance in protection and control of forest fires.
19. There are coordinated system logs, and the process responds effectively to most complaints. The media at the local, state and national levels has been alert and responsive, judging from the coverage that the park receives.
20. Publicly available information provides detailed insights into the major management issues for most PAs. With a large number of ongoing research projects, information on the management aspects gets the attention of the media, e.g. removal of grass, grazing, fire control, likely impacts of pollution and the status of the avifauna.
21. The park is small and there are mostly day visitors. Rajasthan Tourism Development Corporation, ITDC and private hotels provide camping facilities. Tourists interface with the park through rickshaw drivers and guides. Both are

doing a good job as park ambassadors. The Dr. Salim Ali Interpretation Centre is of high quality.

- 22. Systematic evaluation and routine reporting of management-related trends are undertaken. As an important bird area (IBA) and World Heritage Site, the site is the subject of estimations of the populations of critical avifauna. These ongoing exercises are transparent.
- 23. The expectations of most visitors are met. Barring water-scarcity years, visits are rewarding to an average visitor.
- 24. Most neighbours and local communities are supportive of the management of the PA.

B. Management Weaknesses

- 1. The national park has well defined boundaries and is fenced off by a masonry wall. However, there is no buffer to contain the high pressures in meeting the bonafide needs of local communities.
- 2. The site has been identified correctly but has not been systematically categorized. In the absence of a buffer zone around the park, the limitations on it are severe. Nevertheless, well designed zonation has been provided.
- 3. Considering the needs of the site, the allocations of the Government of India and the state are inadequate.
- 4. Conventional management control ensures a linkage between staff performance and management objectives, but there is no specifically designed system in place.
- 5. The populations of threatened or endangered species are declining. The park's special feature is its migratory birds. The park is a staging ground for migratory birds coming from near and far-off places such as the Palaearctic region. This year the wetlands have not filled up, mainly due to poor rainfall. The problem of a sustained and timely water supply is a key element with multiple dimensions, which is poor at present.

C. Actionable Points

- 1. The high pressure from the local communities needs to be relieved by involving locals in the management of the site.
- 2. Adequate resources need to be allocated to meet the site's needs.
- 3. The roadside signage needs to be improved for eco-tourism.
- 4. There is a planned approach to management, but much needs to be done at the policy level.
- 5. Strong steps need to be taken to find out the cause of the declining avifaunal populations. Immediate measures need to be taken to cater to the requirements of the park such as water.

Desert National Park, Rajasthan
Evaluation Year, 2006-2009

A. Management Strengths

- 1. The values have been assessed thoroughly.
- 2. There is a management plan.
- 3. The linkages with other important areas are tenuous, but satellite enclosures and areas such as Aakal Fossil Park do provide opportunities for linkages.
- 4. The establishment and maintenance of enclosures have significantly contributed to conservation of flagship species such as the Great Indian Bustard (GIB), Chinkara, Desert Fox, Vultures and other desert animals. Rigorous scientific monitoring with public participation is suggested.
- 5. Although there is not much documentation on the status of the biological communities, there are several studies being conducted, for example on the Spiny-Tailed Lizard and GIB, and recognition as an important bird area (IBA) reinforces the view that the status of the biological communities in the Desert National Park (DNP) is good.
- 6. The cultural heritage, enshrining the wildlife conservation values and ethos of the local population, offers tremendous possibilities.

B. Management Weaknesses

1. The unique features of the Thar Desert ecosystem face anthropogenic pressures. The human population of the site is greater than 39,000 and the number of domestic livestock is more than 3, 90,000, which creates problem like, grazing, fire, development, illegal tree felling, poaching, new roads and mining etc.
2. The site is identified correctly but has not been categorized.
3. There is a management plan, but it is not comprehensive.
4. There are many stakeholder villages and dhanies within and outside the protected area, but the plans lack a strategy to minimize their impacts.
5. Very few planning and monitoring programmes are in place for habitat restoration.
6. The site has an ad hoc protection strategy.

C. Actionable Points

1. Adequate attention needs to be given to control grazing and fire prevention. Consolidation of the boundary has been provided, but the basic issue of settlement by the competent authority deserves greater attention.
2. The threats posed by habitations and excessive numbers of tourists have not been recognized fully. Decisions on the future of enclaves need be given the highest priority.
3. The site needs proper categorization into zones and an effective protection strategy is required.
4. Immediate steps need to be taken for preparation of a science-based comprehensive management plan of the site.
5. Establishment of permanent vegetation monitoring plots within enclosures and outside is recommended for habitat restoration. In the absence of an adequate number of staff members for monitoring, linkages or collaborations with institutions such as ICFRE, CAZRI, BSI and ZSI are strongly recommended.
6. A key post such as that of the Deputy Conservator of Forests remaining vacant intermittently is a matter of worry. The basic training of the field staff is adequate, but they need special skills for carrying out scientific wildlife management and eco-development in participatory manner.
7. Resource allocations are meagre and hardly cover the major areas of concern.
8. Minimal information is provided to tourists and outreach is insignificant. An independent website is needed to cater the tourists.
9. Services providing access to popular places such as Sudarsi and Khuri for wildlife sighting are limited. There is a need to put in place more interpretation centres, signage, etc. Attempts should be made to train local youth as guides, and the potential of public-private partnership should be explored.
10. Attempts have been made in the past to use remote sensing tools to describe the basic spatial attributes of the park. These should be revived and extensively used for monitoring the habitat and assess the impacts of management. Institutions such as CAZRI, JN University, Rajasthan State Remote Sensing Application Centre, Regional Remote Sensing Service Centre and Arid Forest Research Institute can be involved.
11. Moulding visitor expectations has a lot of scope for improvement. An emphasis could be laid on nature interpretation and education.

A. Management Strengths

1. The area has been assessed thoroughly at the bio-geographical and state levels. The protected area (PA) plays a crucial hydrological role, being part of the upper catchments of rivers feeding the arid zone.
2. All threats have been systematically identified and assessed.

- 3. The site has no human and biotic interference.
- 4. The site has been identified correctly, systematically and categorized with proper zonation plans.
- 5. The site has a comprehensive management plan.
- 6. All complaints are systematically logged in a coordinated system and timely response is provided, with minimal repeats of complaints.
- 7. All the biological communities are likely to be able to sustain native biodiversity.
- 8. Most of the neighbours, local communities are supportive of the management of the PA.

B. Management Weaknesses

- 1. A small number of planning and monitoring programmes are in place for habitat restoration.
- 2. The site has an ad hoc protection strategy.
- 3. Nearly one-third of the posts are vacant is a matter of worry.
- 4. There is minimal information provided to tourists and there are no outreach activities.
- 5. The populations of some threatened and endangered species are increasing, most other populations are stable.
- 6. Threats have been reduced to a limited extent.
- 7. Only key neighbours and communities are supportive to PA management.

C. Actionable Points

- 1. There are no arrangements in place for habitat restoration and this need to be addressed. Dr. Changani's group has done some work in the past, and the outputs of such initiatives need to be taken on board. Linkages and collaborations with institutions such as ICFRE, CAZRI and ZSI are recommended.
- 2. The site needs an effective protection strategy for long-term conservation.
- 3. The basic training provided to the field staff is adequate, but need special skills for carrying out scientific wildlife management and eco-development in a participatory manner.
- 4. Immediate steps need to be taken to fill out the vacant posts for PA management.
- 5. Resources need to be provided for environmental education and population estimation by private agencies or NGOs. There is considerable scope for linkages with academic institutions and outsourcing work in the spheres of research, monitoring, orientation and building the capacity of the field staff.
- 6. That there are over 125 villages present within the zone of influence and 24 habitations within the PA is a matter of concern. Therefore, a greater thrust needs to be provided to eco-development and eco-tourism. Decisions on the future of enclaves need be given high priority.
- 7. There is a need to obtain information on the forest cover from agencies involved in remote sensing, such as the FSI, at the national level, and state-level institutions, to monitor changes and relate them to the inputs provided.
- 8. Key species such as antelopes and the Wolf are declining. A scientific approach and rigorous monitoring with the participation of the public are suggested.
- 9. Expectations of visitors are met, but considering the scope and opportunities, more needs to be done.

A. Management Strengths

- 1. Most of the values and threats have been systematically monitored and assessed.
- 2. The site has a comprehensive management plan.
- 3. Eco-development committees (EDCs) are functional in this protected area (PA).
- 4. Habitat restoration programmes are generally well planned and monitored.

5. The level of human–wildlife conflict is low. There is a little crop damage caused by Neelgai, which is tolerated by the local people.
6. The PA staffs are well trained.
7. Livelihood issues are addressed by EDCs, which are able to provide some livelihood resources for the local people.
8. Complaints arise during the Sitamata cultural *mela* only. The number of complaints has increased after the Tribal Act was passed. The complaints are duly recorded and systematic rapid responses to complaints have been attempted.
9. There are several information boards at strategic locations.
10. Facilities for wildlife tourists are present in the form of a guest house and camping sites. The management of the *mela* crowd management is adequate.
11. The populations of some threatened and endangered species are increasing, and most others are stable. Flying Squirrels are being monitored.
12. Most threats to the site have been reduced.
13. Very few visitors come to the PA, those who visit are satisfied.
14. A planned approach to management is being developed and deterioration of assets is being redressed. Cleaning and water management are practiced for the Sitamata temple.

B. Management Weaknesses

1. The site has some biotic interference.
2. There is no categorization into zones.
3. There is no process in place for systematically reviewing and updating the management plan.
4. Execution of habitat restoration programmes remains a problem due to a lack of funds. Staff and fund shortages are a serious management issue for protection of the PA. The available resources are insufficient for most of the tasks. The buildings and equipment are adequate, but the vehicles are inadequate.
5. NGOs do not contribute to the management of the site. The NGOs are related to tribal welfare and are not proactive in PA management and wildlife conservation.
6. There is no interpretation centre that will serve both the local people and visitors about the values of the PA.
7. The management of the *mela* crowd is adequate, but there are problems due to solid waste and plastics. The *mela* attracts 25,000 people each day for 5 days.
8. There is little or no systematic evaluation or routine reporting of management-related trends due to the lack of staff.
9. Flying Squirrels are being monitored, but documentation is not regular except during censuses.
10. Some biological communities are likely to be able to sustain the native biodiversity. No studies are being carried out.
11. In response to the Tribal Act, several tribal communities have become increasingly non-supportive of the PA management.

C. Actionable Points

1. The biotic pressure on the site needs to be minimized on an immediate basis.
2. The site needs proper categorization into zones.
3. The management plan should be updated routinely and in a timely manner.
4. Resource allocation and timely release of adequate funds require attention. The resources allocated for management of the site, both human and financial, need to be enhanced. The PA requires a mini truck for patrolling.
5. The site requires contributions of NGOs for long-term management of the site.
6. Immediate actions need to be taken to develop a nature interpretation centre.
7. The annual *mela* needs to be controlled so that there is no pollution.
8. A proper and systematic study of management-related trends needs to be carried out on a priority basis.
9. The tribal community dependent on the site need to be involved in the management of the PA.

Mount Abu National Park, Rajasthan

Evaluation Year, 2012-2013

A. Management Strengths

1. The unique geomorphological features, oldest mountain of the Indian subcontinent, landscape level ecological significance, biodiversity-rich potential, cultural heritage, limited accessibility and difficult terrain are positive factors deriving from the location of the protected area (PA).
2. With the notification in 2008 under the Wildlife (Protection) Act, 1972 and declaration of areas in and the hill station as an eco-sensitive zone under EPA 1986, the site became effectively insulated.
3. There have been formal wildlife management plans only for recent periods. A comprehensive and legally enforceable plan is in place.
4. Most of the values have been recognized (listing of birds, estimation of populations of animals, etc.), and the prescriptions of the plan are generally commensurate with the needs of protection and integrity of the habitat.
5. Tourism has created employment opportunities, and livelihood is not a major issue in the villages around the hill station and in the upper region.

B. Management Weaknesses

1. Though the threats posed to the habitat by fires, grazing and infestations of weeds and exotic tree species have been recognized, documented and well understood, the provisions for restoration and remedial measures are found to be inadequate on the ground.
2. The participation of the people in the planning process is not evident. An advisory committee, a statutory requirement, is not in place. There is scope for improving the participation of stakeholders in management, co-development and tourism. There is scope for improvement. There are six EDCs in the region. A total of 48 villages need to be covered by EDCs. Local institutions/NGOs are not involved in a significant manner in supporting conservation initiatives.
3. The site has become popular more as a "hill station", and thus the values of the PA have been diluted. Opportunities to showcase the unique biodiversity have not been harnessed fully. The movements of visitors are limited to the plateau (walking trails, vehicular paths, etc.).
4. Dedicated staffs are needed for regulating the tourist traffic and for carrying out nature interpretation and education activities to sensitize tourists.

C. Actionable Points

1. The PA was a part of a well connected wider landscape including present-day Madhya Pradesh, Maharashtra, Gujarat, etc., but this landscape is now fragmented. A focused study needs to be conducted to revive possible links across the larger landscape.
2. The weed eradication measures need to be based on proven technology through a MoEF-supported initiative (suggested contact, Dr. C. R. Babu, University of Delhi).
3. Exposure through short orientation workshops and exposure visits to places such as Aravali Biodiversity Park, in Delhi, is indicated for carrying out science-based biodiversity conservation and management activity.
4. Involvement of stakeholders in planning and management, as provided under (the amended) Wildlife Protection Act 2003, is required. An advisory committee needs to be framed, and an Honorary Warden needs to be appointed.
5. Creating a nature Interpretation centre exclusively for the park is desirable.
6. EDCs need to be developed in the fringe villages. They need to engage in eco-tourism.





NORTH-EASTERN REGION



NORTH-EASTERN REGION

3.5

North-Eastern Region

S. No.	State	National Parks and Wildlife Sanctuaries	Evaluation Year
1.	Arunachal Pradesh	Sessa Orchid Wildlife Sanctuary	2006-2009
2.	Arunachal Pradesh	Eagle Nest Wildlife Sanctuary	2006-2009
3.	Arunachal Pradesh	Mouling National Park	2012-2013
4.	Arunachal Pradesh	D'Ering Memorial (Lali) Wildlife Sanctuary	2012-2013
5.	Assam	Pobitora Wildlife Sanctuary	2006-2009
6.	Assam	Orange (Rajiv Gandhi) National Park	2006-2009
7.	Assam	Dibru-Saikhowa National Park	2009-2010
8.	Assam	Hollongapar (Gibbon) Wildlife Sanctuary	2012-2013
9.	Manipur	Keibul Lamjao National Park	2006-2009
10.	Meghalaya	Nongkhylliem National Park	2006-2009
11.	Meghalaya	Balphakram National Park	2009-2010
12.	Meghalaya	Nokrek Ridge National Park	2012-2013
13.	Mizoram	Murlen National Park	2006-2009
14.	Mizoram	Ngengpui Wildlife Sanctuary	2009-2010
15.	Mizoram	Phawngpui Blue Mountain National Park	2012-2013
16.	Nagaland	Intanki National Park	2006-2009
17.	Nagaland	Fakim Wildlife Sanctuary	2012-2013
18.	Sikkim	Khangchendzonga National Park	2006-2009
19.	Sikkim	Barsey Rhododendron Wildlife Sanctuary	2006-2009
20.	Sikkim	Pangolakha Wildlife Sanctuary	2009-2010

21.	Sikkim	Fambong Lho Wildlife Sanctuary	2012-2013
22.	Tripura	Sipahijala Wildlife Sanctuary	2006-2009
23.	Tripura	Gumti Wildlife Sanctuary	2006-2009
24.	Tripura	Trishna Wildlife Sanctuary	2009-2010
25.	Tripura	Bison (Rajbari) National Park	2012-2013
26.	Tripura	Clouded Leopard National Park	2012-2013

1

Sessa Orchid Wildlife Sanctuary, Arunachal Pradesh

Evaluation Year, 2006-2009

A. Management Strengths

- The values of the site have been documented very well.
- All the potential threats are being identified. The threats include the construction of a 600 MW power house at KIMI, an ITDC tourist lodge and poaching. NTFP extraction and invasive species has also been identified.
- The site has little human and biotic interference. Human settlement and encroachments have been stopped.
- Categorization and zonation have been done, but specific identification at the site has not yet happened.
- The site has a draft management plan.
- The sites safeguards threatened biodiversity values.
- Habitat restoration programmes are generally well planned and monitored. The work involved is restricted to cleaning weeds and construction of water tanks.
- The site has a comprehensive and very effective protection strategy.
- All major human-wildlife conflicts have been ended. It is possible that some incidents are not reported.
- The site is fully integrated into the wider network/landscape. Eagle Nest Wildlife Sanctuary falls within the same landscape and broad ecological unit. The declaration of these nearby areas simultaneously as sanctuaries is a farsighted and laudable exercise.
- The personnel are well organized.
- The resources are not adequate, but whatever is available is being utilized properly.
- The resources are linked with priority actions.
- Some support has been received from NGOs.
- Since the resources are inadequate, efforts are being made to generate resources.
- There is a linkage between staff performances and the management objectives.
- Information on the PA is available to the general people.
- Systematic evaluation and routine reporting of management-related trends are undertaken.
- Most of the biological communities are likely to be able to sustain the native biodiversity.
- The threats have been identified and reduced.
- The expectations of visitors are generally met.
- The small population living on the fringe of the site is supportive to the PA management.
- A planned approach to management is being instituted and the deterioration of cultural assets is being redressed.

B. Management Weaknesses

- The site has a draft management plan (2005-2009), which is yet to be approved by higher authorities.
- According to the management, there were no stakeholders at the time when the sanctuary was declared. At present some encroachers are claiming rights of settlement.

3. The resources are not adequate.
4. There is only one trained staff member and more are required.
5. There are no possibilities of public participation. The location of the site, the pattern of the population on the fringe and the low density do not allow regular people's participation.
6. The site has a draft management plan (2005–2009), which is yet to be approved by higher authorities.
7. According to the management, there were no stakeholders at the time when the sanctuary was declared. At present some encroachers are claiming rights of settlement.
8. The resources are not adequate.
9. There is only one trained staff member and more are required.
10. There are no possibilities of public participation. The location of the site, the pattern of the population on the fringe and the low density do not allow regular people's participation.
11. There is no mechanism of handling complaints.
12. The facilities provided for visitors are not adequate.

C. Actionable Points

1. Immediate measures need to be taken to finalize the draft management plan.
2. The problem of encroachers who are claiming rights of settlement needs to be resolved immediately.
3. Adequate resources need to be allocated.
4. More trained staff members are needed for managing the site.
5. Immediate steps need to be taken to establish a complaint handling system.
6. Cultural assets are being identified and the management is aware of them. Separate protection is needed.
7. Adequate facilities are required for visitors.

2

Eagle Nest Wildlife Sanctuary,
Arunachal Pradesh
Evaluation Year, 2006–2009

A. Management Strengths

1. The values of the site have been well documented.
2. All potential threats have been systematically identified and assessed.
3. The site is free from external human and biotic interference.
4. Categorization and zonation have been carried out.
5. The site had a draft management plan (2003–2007), which is being revised.
6. The site safeguards large number of threatened biodiversity values.
7. According to the management, there were no stakeholders at the time when the sanctuary was declared.
8. Habitat restoration programmes are planned and monitored. The work involved is restricted to clearing weeds and construction of water tanks.
9. The site has a comprehensive and very effective protection strategy.
10. There is no major human–wildlife conflict.
11. The site is fully integrated into the wider network/landscape. Sessa Orchid Sanctuary fall within the same landscape and broad ecological unit.
12. The personnel are well organized.
13. Whatever resources are available to the management are utilized towards the achievement of specific management objectives.

- 14. The resources are found to be linked to priority actions.
- 15. Support from the Bugun Welfare Society, an NGO, has been established, which supports ecotourism.
- 16. There is a linkage between performance and management objectives.
- 17. Substantial livelihood issues are addressed by the management of the protected area (PA). In the present circumstances there is no direct linkage, but the Bogun Welfare Society generates money/resources and a sum of Rs. 50,000/- was given to the village community.
- 18. Systematic evaluation and routine reporting of management-related trends are undertaken.
- 19. There is a systematic maintenance schedule and funds are in place for management of infrastructure/assets.
- 20. All the biological communities are likely to be able to sustain the native biodiversity. There is very little ecological or anthropogenic pressure. Hence, the biological communities are likely to be stable. A new bird species, the Bugun Iiocichla *Liocichla bugunorum* has been discovered.
- 21. The threats have been identified and have been reduced.
- 22. The expectations are generally met although there are very few facilities for visitors.
- 23. The small population living on the fringe supports the PA management.
- 24. Cultural assets in terms of tribal communities are being identified.

B. Management Weaknesses

- 1. The resources are inadequate.
- 2. Only one staff member is trained in wildlife management and more trained personnel are required.
- 3. There is hardly any possibility of public participation. The location of the site, the pattern of the population on the fringe and the low density do not facilitate regular participation.
- 4. There is no systematic approach to handling complaints and no mechanism exists for the purpose.
- 5. Whatever materials are available to the forest department are accessible to the people, however further actions are required in this regard.
- 6. The visitor facilities are not adequate.
- 7. Censuses have been conducted for the Red panda, Elephant, Himalayan black bear, etc. but population trends are not available.

C. Actionable Points

- 1. Allocation of adequate resources requires attention.
- 2. More staff members need to be trained in wildlife management.
- 3. A systematic approach to handling complaints needs to be brought in urgently.
- 4. More information should be made available to the public about the management of the PA.
- 5. The visitor facilities need to be improved immediately.
- 6. The population trends of major species such as Red panda, Elephant, Himalayan black bear and other species need to be assessed for scientific management of the PA.

Mouling National Park, Arunachal Pradesh
Evaluation Year, 2012-2013

A. Management Strengths

- 1. There is a comprehensive management plan for the period from 2012-2013 to 2016-2017. This is the updated plan of the previous five years. Core and buffer zones have been demarcated. The eco-fragile zone in the buffer has also been identified and the details submitted to the Government of India.
- 2. There is little human and biotic interference, primarily due to the difficult terrain and a lack of access to the high mountains.

3. The site has good visitor services and facilities. At the range headquarters, in Jengging, there is an interpretation centre cum lecture hall with audio-visual aids and preserved wildlife specimens. There is also an orchid nursery and a botanical garden. There is a Circuit House for lodging. A number of awareness programmes and educational tours are conducted, especially for school children.
4. Some research and monitoring work is being conducted by individual researchers, including RS/GIS mapping and primate and mammal studies.

B. Management Weaknesses

1. The values and threats to the site have been generally identified but not systematically assessed or monitored.
2. The demarcation of the boundaries of the PA appears to be based only on geo-referencing from toposheets; the ground-truthing and physical boundaries are not clear.
3. The opportunities for stakeholders to participate in planning are limited, and the plan is not in the public domain.
4. No habitat restoration programmes have been undertaken due to logistics challenges of a lack of access, inadequate staff strength and inadequate resources. Some controlled burning and plantation of bamboo have been attempted in the buffer area.
5. The site has an ad hoc protection strategy. There are no forest camps within the protected area (PA). There are very few staff members for patrolling. There is no coordination with other line agencies, and their activities are not conservation oriented. The park boundary spreads across three districts and five assembly constituencies in the state.
6. The PA is an isolated mountain complex previously known as the Abor Hills. There is no direct connectivity or integration with other forest areas.
7. The personnel of the PA are absolutely insufficient in relation to its area of 483 km². Few, if any, resources are explicitly allocated for PA management.
8. The pattern of resource allocation is not linked to priority actions. It is unpredictable and it is not consistent. There is no linkage between staff performance management and management objectives.
9. The participation of the public in awareness programmes is opportunistic, and the intelligence received about hunting is quite inadequate.
10. No information (signage, communication materials, web site) has been made available to the public on the management of the PA.
11. The research that has been carried out is minimal. There is no documentation of the status of species, and no census or estimation exercise has been conducted. There is no inventory maintenance or schedule.
12. Only some local communities are supportive, while many are disappointed with the absence of benefits from the PA in return for the community land ceded and with the lack of EDC activities.

C. Actionable Points

1. The PA boundary needs to be demarcated on the ground.
2. The planning process needs to be more inclusive of local stakeholders. Introduction of eco-development schemes, sensitization and greater engagement with the local communities are the need of the hour for gaining their cooperation with the management of the PA.
3. A strengthened protection strategy is required, with an emphasis on visits and patrols by the forest staff inside the PA. Additional and trained PA personnel are urgently required for managing the site. Explicit resource allocation is required for the PA.
4. Information on the PA needs to be displayed and communicated to a wider audience.
5. Scientific research and documentation are a must for assessing the biodiversity of the site. Research expeditions should be organized to the parts of the PA that are difficult to reach.

D'Ering Wildlife Sanctuary, Arunachal Pradesh Evaluation Year, 2012-2013

A. Management Strengths

1. The management plan has been prepared according to the guidelines of the Wildlife Institute of India (WII), and stakeholders were involved in the process. The site safeguards threatened biodiversity values through protection patrolling, habitat improvement, fire protection and engagement of the local community. Most threats to the protected area (PA) have been identified and assessed by the management. Fires, floods, hunting and livestock grazing have been underlined as the main threats.
2. There is a planned protection strategy, but it has constraints. Different patrolling means are used, but the riverine landscape limits access to some areas. There is coordination with the neighboring state (Assam) for safeguarding the southern boundary of the PA. There is a list of villagers holding firearm licenses in the fringe areas. The management of the PA staff performance was acknowledged, with the DFO receiving the State Award for Conservation in 2012-2013 for commendable work in improving the PA management and protection. Habitat restoration programmes (plantation of fruit-bearing species, fire-line cutting and controlled burning) are well planned.
3. Stakeholders had good opportunities to participate in the planning process. Consultations were held with local communities including local NGOs before the management plan was finalized. The president of a local NGO is a member of the state wildlife board. A commendable initiative has been taken in developing the participation of the public by engaging closely with the local community and local media through awareness programmes, fire control, surrender of guns and reducing hunting for cultural purposes.
4. The populations of key threatened species appear to be stable. The riverine grassland forest habitat demonstrates a high potential for supporting terrestrial animals and birds. Reports in the local media indicate the condition of the wildlife population is positive. Most threats to the PA have been brought under control as a result of protection, the cooperation of the local community and inter-state coordination across the boundary of the PA. There local communities cooperate with the PA management.

B. Management Weaknesses

1. The geographical location and ecological set-up of the site are prone to human and biotic interference. There are livestock settlers from the neighboring state, Assam, along the southern boundary. As a result, there is considerable grazing in the area. There is resource extraction for thatch from the PA. Villages are located across the river from the PA to the western side.
2. The site has not been categorized. No core zone has been delineated due to geographical features such as dynamic rivers, the operational logistics, a lack of suitable data, etc. A buffer zone has not been demarcated with defined boundaries. It is assumed as the area falling within a distance of 10 km from the sanctuary boundary.
3. The management plan is not updated routinely. The PA was notified in 1978, but the first scientific management plan was only made for the period from 2012-2013 to 2016-2017.
4. A limited number of attempts have been made to integrate the site into the wider landscape. The PA has rivers for boundaries on three sides, and the southern boundary is along the Assam-Arunachal border. The nearest PA is Dibru-Saikhowa National Park, in Assam, with some pockets with reserve forests in between.
5. There is a shortage of frontline staff members such as Foresters, Forest Guards and Game Watchers. The sanctioned strength is 26 staff members, but there are only 16. The proposed number is 45. The availability of trained manpower is limited.
6. The infrastructure is inadequate, and the vehicles are in poor condition and there is a lack of equipment.
7. Funds are released at the end of the financial year, which makes utilization of these funds very difficult. The resources are not sufficient for managing this site.
8. The information made available to the public is general in nature and limited. There are no visitor services, interpretation centers, accommodation facilities, etc.

9. The inventory maintenance is ad hoc, and there are no funds for the same.

C. Actionable Points

1. The human intrusion into the site, especially across the southern border, with the neighbouring state of Assam, needs to be curbed urgently. It is imperative to institutionalize inter-state coordination.
2. It is important to carry out zonation of the site for efficient management.
3. There are prospects of establishing corridor connectivity between this site and Dibru-Saikhowa National Park, of Assam.
4. There is an urgent need to enhance the human and infrastructure capital of the site.
5. Timely release of funds is critical.
6. A comprehensive web site required for the PA.
7. Basic facilities for visitors and tourism are required to realize the high potential for tourism.
8. Scientific and regular research and monitoring of species need to be prioritized.
9. There are reasonable grounds for upgrading the status of the site to 'National Park'. Doing this will help preserve and protect the site.

Pobitora Wildlife Sanctuary, Assam
Evaluation Year, 2006–2009

A. Management Strengths

1. The values of the site have been documented very well.
2. All potential threats have been identified and assessed.
3. There is a comprehensive management plan, which is updated regularly.
4. The site safeguards large number of threatened biodiversity values.
5. Stakeholders participate in most of the planning processes.
6. Reintroduction programmes are generally well planned and monitored. Reintroduction of the rhinoceros in Manas National Park is in process. Rhinoceroses from Pobitora are to be taken for the purpose.
7. The site has a comprehensive and very effective protection strategy. Rhinoceroses move outside the protected area (PA) and hence protection has to be given in an area of around 200 km² by a staff meant for 38 km².
8. Human-wildlife conflicts have been mitigated.
9. Efforts are being made to integrate the site into a larger landscape.
10. The personnel are well organized and managed with access to adequate resources.
11. The resources (vehicles, equipment, buildings, etc.) are well organized and managed with access to adequate resources.
12. The resources are linked with priority actions.
13. The supports provided by NGOs are substantial.
14. An adequate number of trained officers and frontline staff are posted at the site.
15. The performance management of all staff members is directly linked to achievement of relevant management objectives.
16. There is some public participation in the management.
17. A coordinated system logs and responds effectively to most of the complaints.
18. The livelihood issues of the fringe villagers are partially addressed.
19. Comprehensive reports are routinely provided on the management and condition of the public assets.

20. Systematic evaluation and comprehensive reporting of management-related trends are undertaken.
21. The populations of all threatened/endangered species are either increasing or stable. All the biological communities are likely to be able to sustain the native biodiversity. There is good management in this respect.
22. The expectations of most visitors are met.
23. Most neighbours/local communities are supportive of the management of the PA.
24. A planned approach to management is being instituted and the deterioration of cultural assets is being redressed.

B. Management Weaknesses

1. The site has extensive human and biotic interference in terms of large cattle population. Human interference takes the form of trespassing and fishing.
2. The site has been properly identified, but there is no proper zonation.
3. There is a delay in the release of funds.
4. Not all facilities are available for visitors. Much more is required as the site is close to the capital city, Guwahati.

C. Actionable Points

1. Biotic interference in terms of cattle grazing, human trespassing and fishing needs to be resolved immediately.
2. The site needs proper categorization into zones.
3. There should be no delay in the release of funds.
4. Since the site is close to the capital city Guwahati, the visitor services and facilities should be of international standards.

Orang (Rajiv Gandhi) National Park, Assam Evaluation Year, 2006-2009

A. Management Strengths

1. The values of the site have been documented very well.
2. All potential threats have been identified and assessed. The threats include floods, erosion, grazing, poaching, poisoning of tigers and invasion by mimosa
3. Categorization and zonation have been done.
4. The site has a management plan (2003-2004 to 2007-2008), which is being revised.
5. The site safeguards large number of threatened biodiversity values.
6. Stakeholder participation has been initiated, under a very adverse situation.
7. Habitat restoration programmes are generally well planned and monitored. The staffs are motivated to do good work.
8. The site is well integrated into the network/landscape. The PA is like an island, (surrounded by villages) and there is no possibility of complete ecological integration with the other areas. Only on the southern side (Brahmaputra River side), some ecological integration is possible.
9. The personnel and infrastructural resources are well organized. Broadly, they are being utilized for achieving specific management objectives.
10. The resources are linked with priority actions.
11. Contributions are systematically sought from NGOs and negotiated for management of many site-level activities. Support has been received from some NGOs like WTI, Aaranyak, WWF, Rhino Foundation, WADAWT).
12. There is a linkage between staff performance and the management objectives.
13. The forest department has initiated public participation in various programmes.
14. A coordinated system logs and responds effectively to most complaints.

15. Adequate information is available to the public on the management of the PA.
16. All visitor services and facilities accord with the relevant PA category. The expectations of most visitors are met.
17. A reporting system exists and it works well. The wireless communication system is good.
18. Most of the biological communities are likely to be able to sustain the native biodiversity. The populations of most threatened/endangered species are increasing, and most of the others are stable. Monitoring is being done; census has been carried out for the rhinoceros and tiger.
19. The population in the fringes is not against the PA management, due to continuous efforts by the forest department.
20. A planned approach to management is being instituted and a deterioration of cultural assets is being redressed.

B. Management Weaknesses

1. Biotic interference continues to be present at the site.
2. The management activities are planned well, but the staffs are overburdened. In spite of strict vigilance, rhinoceroses are killed by poachers.
3. The resources are inadequate and its constraints are the main problem in habitat restoration.
4. A major human-wildlife conflict exists (with tigers, elephants and rhinoceroses). The authorities are trying their best to solve the problem. The compensation money does not come in time.
5. Only one trained staff is available at the site, more are required.
6. A recent invasion of alien species is creating problems for the management.
7. The southern boundary does not have a permanent demarcation. Mimosa has invaded up 20% of the grassland. Siltation of the wetlands is a serious ecological issue.
8. There are traditional forest-dependent communities on the fringes. They use the forest for grazing and collect NTFP, which provide them livelihoods.

C. Actionable Points

1. The biotic interference need to be resolved immediately.
2. Killing of rhinoceroses by poachers needs immediate mitigation measures.
3. The resources provided for habitat restoration need to be enhanced urgently.
4. Timely release of compensation money reduces the human-wildlife conflict.
5. More trained staff members need to be posted at the site.
6. Immediate measures need to be taken to eliminate the invasion of alien species.
7. The southern boundary needs to be demarcated urgently to reduce the biotic pressure.

Dibru-Saikhowa National Park, Assam
Evaluation Year, 2009-2010

A. Management Strengths

1. Threats and values have been identified in the management plan.
2. The site has a well defined core and buffer areas, for which specific prescriptions have been listed in the management plan. Within the core zone, sub-zones based on habitat type have been identified, for which management interventions have been proposed in the management plan.
3. The latest management plan (2011-2012 to 2015-2016) has been submitted to the state government after corrections and awaits approval. It is comprehensive in its prescriptions, which are based on prevailing field realities.
4. Stakeholders participate in most planning processes.

5. Three wild buffaloes from Kaziranga National Park (NP) were rehabilitated in Dibru-Saikhowa NP. The entire process was monitored by Wildlife Trust of India (WTI), an NGO, and logistics support was provided by the park authorities.
6. The site is surrounded from all sides by the River Brahmaputra; hence there is very little scope for human-wildlife conflict.
7. The site is an island, and hence there is limited scope for integration with forest areas nearby. However, the aquatic fauna, especially dolphins, are integrated with the entire Brahmaputra river system.
8. The personnel are inadequate in number, but all of them are explicitly engaged for protection and achievement of specific management objectives.
9. All the resources, viz., vehicles, boats, equipments, buildings, etc., are explicitly allocated only for achievement of specific management objectives.
10. NGO support is being taken in mitigating conflict and monitoring the three wild buffaloes from Kaziranga NP that were rehabilitated.
11. The DFO has received training in wildlife management under WII's Diploma Programme.
12. The land use patterns are quite rigid in the buffer areas. Fishing, being a way of life for most of the local people, is hard to give up and few are interested in alternative livelihoods.
13. The site has published brochures in English and the Assamese language that give general information relating to the site. A book on birds has also been published by the local forest authority for providing information to the public.
14. A new visitor centre, in Guijan Range and an interpretation cum learning centre, at the Divisional Headquarters, is coming up, these will enhance the visitor knowledge. Good private resorts serving local food have come up just outside the southern border of the site.
15. An elephant census is carried out on every two years or so.
16. The protected area (PA) is a specialist ecotourism destination, especially for bird watchers and the expectations of many of the visitors are met.
17. The local communities apparently do not support the PA management, except for providing some casual labourers when required.

B. Management Weaknesses

1. Systematic assessment and monitoring of the values are yet to be taken up.
2. Some threats have been systematically analysed using satellite imagery from NRSC, Hyderabad, but a systematic assessment of other threats has not been carried out.
3. The site is subject to extensive human and biotic interference. There are two old forest villages viz, Dadhia and Lika, which were established inside the PA during the 1950s. The human populations of these villages and the numbers of cattle have increased and have been reducing the overall habitat availability greatly. Efforts to shift the same from the site have not been successful. Consequently the site is burdened with tremendous human and biotic pressures apart from illicit felling of trees and illegal fishing. The threats to the site have increased.
4. Due to the extreme paucity of staff members in the Wildlife Division, enforcement is very poor and safeguarding the threatened values has become extremely difficult.
5. A small number of planning and monitoring programmes are in place for habitat restoration. The staffs are busy engaged in protection work, because of which they have not been able to focus sufficiently on habitat management.
6. The site has an ad hoc protection strategy. There are very few options available to the park manager as there is a severe paucity of staff members in this division. At any point of time just 20 to 25 frontline staff members are available for protection of a 340 km² area.
7. The resources, both human and financial, allocated for management of the site were found to be inadequate.
8. Except the DFO, who is a PGD in Wildlife Management from WII, no staff members are trained in wildlife.
9. Complaints that are received are normally investigated, but there is no systematic approach to investigation and redressal.
10. There is no systematic schedule for maintenance and management of infrastructure/assets, which always depends on the availability of funds.

11. There is no systematic or routine study of management-related trends, except an elephant census, which is carried out every two years or so.
12. Populations of threatened/ endangered species are declining. Exercises conducted to estimate the numbers of elephants and tigers in the site have shown that there is a declining trend. Severe biotic interference has been continually causing degradation of habitats in the site.
13. Unless the severe biotic pressures are removed, the biological communities are unlikely to be able to sustain the native biodiversity.
14. The paucity of staff members, erratic availability of funds and ever-increasing human and livestock populations in the core, pose severe threats to the cultural heritage.

C. Actionable Points

1. The values of the site need to be monitored and assessed.
2. The identification and assessment of threat need to be studied systematically.
3. The tremendous pressure posed by the presence of humans and cattle needs to be mitigated immediately. Relocation of the two villages, Dadhia and Lika, illicit felling of trees, illegal fishing and cattle grazing need the attention of PA management urgently.
4. The severe paucity of staff members has hampered many activities of the PA, such as habitat restoration, site protection and safeguarding the threatened biodiversity values. Resource allocation both human and financial and timely release of adequate funds are needed for management of the site.
5. As the DFO is the only trained officer posted at the site, more officers need to be trained for managing the site.
6. A systematic approach to investigating and redressing the complaints received is needed.
7. The management-related trends other than the population of the elephants need to be systematically evaluated. A systematic study of the flora and fauna of the site needs to be carried out on a priority basis.
8. Urgent actions need to be taken to determine the cause of the declining trend of elephants and tigers at the site. Reducing the biotic pressure will increase the availability and suitability of the habitat for the populations of threatened/endangered species.
9. The paucity of staff, erratic availability of funds and ever-increasing human and livestock populations in the core zone pose severe threats to the cultural heritage and strong actions are needed to resolve them.

Hollongapar (Gibbon) Wildlife Sanctuary,
Assam
Evaluation Year, 2012-2013

A. Management Strengths

1. Most of the values the site and threats to it have been systematically assessed and monitored.
2. The site has been properly identified and categorized. The core zone includes the entire protected area (PA) (20.98 km²). The management has prescribed the creation of a buffer zone outside the PA, along with an administrative zone and a restoration zone.
3. The current management plan is for the period from 2011-2012 to 2016-2017. The management plans of previous periods were successively revised.
4. Most of the threatened biodiversity values are secured well by the compact size of the PA, the good strength of the protection staff and active measures such as the creation of canopy bridges for primates.
5. There are habitat restoration programmes. A nursery is maintained for tall seedlings for planting in degraded areas. Water holes have been created for ensuring availability of water in dry areas. Canopy bridging through artificial regeneration is planned to establish habitat connectivity for primates.
6. The site has a comprehensive and effective protection strategy. The strength of the forest staff and the number of camps are good given the size of the PA. The camps are distributed all over the PA, and foot and mobile patrolling

are feasible on account of the accessible nature of the terrain. There is coordination with the local police.

7. The primary human-wildlife conflict involves Elephants. The management of the PA has paid compensation regularly for human injuries/deaths and property/crop damage. A forest staff team has been constituted to check depredation by wildlife.
8. The number of personnel is reasonably adequate for the size of the site.
9. There is a responsive system for redressing complaints. Field-level complaints are pursued at the range and division levels. A record of the RTI queries of the last 3 years is being maintained.
10. There services provided for visitors are good. These include accommodation, park visits on foot trails and skilled forest guards for tracking wildlife.
11. There are good populations of key primate species in suitable habitats. Census reports show increasing trends.
12. The expectations of most visitors are met due to the availability of basic services, guidance by a skilled staff and the convenient size of the PA. The entry of tourists and feedback received from visitors are recorded.

B. Management Weaknesses

1. The site is surrounded by villages and tea gardens. There is some fodder collection and grazing along the boundary areas. An area of 879 acres of the PA was leased to the military in 1965, when camps were established. An active rail track runs through the site. It has fragmented the habitat and is the cause of wildlife casualties.
2. The PA is an island, not integrated with the wider ecological landscape. There was an old Elephant corridor connecting Disoi Valley and reserved forests. But now there is a substantial human population there.
3. Funds are not appropriately allocated according to the management plan.
4. The staffs have not undergone any advanced wildlife management training. The general forest staffs are carrying out protection activities and have habitat improvement and tourism duties.
5. The participation of the public in the management of the PA is only opportunistic.
6. Few livelihood issues are addressed by the management of the PA. Eco-development committees have been formed, but no activities have been undertaken yet.

C. Actionable Points

1. Official talks between the forest department and the defence authorities are required to reclaim the unused part of the leased land held by the latter. (Military infrastructure has been constructed on part of the leased land, and about half of the total area remains unused.)
2. The rail track passing through the PA needs to be realigned or the rail traffic regulated to prevent habitat fragmentation and wildlife casualties.
3. The forest staffs need to be provided explicit training related to wildlife management issues.
4. Active engagement of the communities living around the PA in the management planning process and eco-development activities is required.

Keibul Lamjao National Park, Manipur
Evaluation Year, 2006–2009

A. Management Strengths

1. All values have been systematically identified, assessed and monitored.
2. All threats are systematically identified and assessed. The threats from the Ithi barrage and hydro-electric power generation at Loktak Lake have been identified. But all these threats are not associated with the day-to-day management of the protected area (PA).
3. The site has been identified correctly and systematically categorized with proper zonation plans. Zonation has been done in broader dimensions, as the site is dominated by floating vegetation, specific zonation is not possible.

4. The site has a comprehensive management plan.
5. The site safeguards large number of threatened biodiversity values.
6. Stakeholders participate in some planning processes.
7. There are some planning and monitoring programmes in place for reintroduction programmes. A second home of the Sangai has been identified in the vicinity of Imphal city.
8. The protection strategy is by and large working.
9. Human-wildlife conflicts have been reduced.
10. The site is fully integrated into the wider network/landscape. Being a part of Loktak Lake (Ramsar site) it is automatically integrated with the wider ecological network.
11. Some personnel have been explicitly allocated for achievement of specific management objectives. This PA gets all the attention it calls for as this is an important PA in Manipur.
12. Some resources are explicitly allocated for achievement of specific management objectives.
13. Resources are used according to priority action.
14. Some NGO support is received by the PA.
15. There is systematic public participation in most aspects of the PA management, which is mainly related to the protection of the Sangai.
16. Substantial livelihood issues are addressed by the PA management. A number of ecodevelopment activities have been taken up.
17. People know about the PA and understand well the problems related to the protection of the PA. Reports, Booklets, posters and T-shirts are available for public.
18. Systematic evaluation and routine reporting of management-related trends are carried out.
19. A systematic inventory provides the basis for the maintenance schedule and adequate funds have been made available.
20. The populations of all threatened/endangered species are either increasing or stable. A census is carried out systematically with the help of scientific institutions.
21. Most of the biological communities are likely to be able to sustain the native biodiversity. Some studies have been carried out and reports on birds and mammals are available.
22. The expectations of most visitors are met. People can see the unique vegetation of the phumdis.
23. Most of the neighbours/local communities are supportive of the management of the PA.
24. The sangai has been designated a cultural asset. Hence, the communities offer considerable support.

B. Management Weaknesses

1. The site has some biotic interference.
2. Only a few planning and monitoring programmes are in place for habitat restoration.
3. By and large, the resources are well organized, but they are not adequate.
4. The resources are not adequate primarily because of the different levels of conflicts, including insurgency. The PA authorities do not consider the resources to be sufficient.
5. There are very few persons trained in wildlife management.
6. The complaint handling system is operational, but it is not responsive to individual issues and the follow-up provided is limited.
7. Some facilities are available for visitors, but because of the insurgency problems, these are underutilized.
8. The threats are of a permanent nature and as reported, the barrage is gradually degrading the *phumdis*. The solution cannot come from the forest department alone. Political will is essential for saving the site.

C. Actionable Points

1. Some biotic interference in the site needs to be resolved immediately.
2. Habitat restoration needs to be carried out in a planned manner.
3. There is a need for adequate releases of funds and resource allocation.
4. The staff members need to be trained in wildlife management.
5. The complaint handling system should be more effective.

- 6. The insurgency problem needs to be resolved immediately for visitors.
- 7. Political will is needed to end the threats causing by barrage.

Nongkhyllem Wildlife Sanctuary, Meghalaya Evaluation Year, 2006-2009

A. Management Strengths

- 1. The threats and values have been systematically identified and assessed.
- 2. Little biotic interference in the park has been reduced.
- 3. The zonation has been done in terms of core and buffer zones.
- 4. There is a management plan for the period from 2006-2007 to 2010-2011.
- 5. The site safeguards large number of threatened biodiversity values.
- 6. Habitat restoration programmes are thoroughly planned and monitored in a continuous process.
- 7. The site has a comprehensive and very effective protection strategy. This strategy includes the establishment of a village protection squad.
- 8. Human-wildlife conflicts have been mitigated
- 9. The site is fully integrated into the wider network/landscape. The sanctuary has been carved out of the existing reserve forest and hence the natural and geomorphologic settings are contiguous. The sanctuary and the surrounding ecological set-up have been covered by declaring the whole area a Project Elephant Reserve.
- 10. The personnel and infrastructural resources are well organized. Broadly, they are being utilized for achieving specific management objectives.
- 11. Comprehensive formulae are systematically used to decide most of the resource allocation and generally funds are released in time.
- 12. Contributions are systematically sought from NGOs and negotiated for management of some site-level activities.
- 13. A coordinated system logs and responds effectively to most complaints. There is a mechanism for addressing public complaints.
- 14. Substantial livelihood issues are addressed by the PA management. A number of programmes are associated with the livelihood needs of the people.
- 15. Systematic evaluation and routine reporting of management-related trends are undertaken.
- 16. The records indicate that the age structure of elephants will not jeopardize the native biodiversity.
- 17. The threats are being minimized.
- 18. There is good support from the neighbouring communities.
- 19. The cultural components are well identified, documented and respected.

B. Management Weaknesses

- 1. A large number of species are threatened.
- 2. For stakeholder involvement, JFMC and Forest Development Agency (FDAs) have to be initiated and hence full official participation is yet to begin.
- 3. Only a few trained officers and frontline staff have been posted at the site.
- 4. According to the records, the elephant population has gone down, from 429 in 2002 to 383 in 2005. There are no systematic records of other threatened species. A report (2002) on the tiger population of Meghalaya is available.

C. Actionable Points

- 1. Stakeholder involvements need to be assured by Forest Department.

2. More trained staff members need to be posted at the site.
3. Immediate actions need to be taken to determine the cause of the declining elephant population. Threatened species in the park need to be recorded systematically.

Balphakram National Park, Meghalaya Evaluation Year, 2009–2010

A. Management Strengths

1. The site has a comprehensive management plan, which has been routinely and systematically updated.
2. The site safeguards a large number of threatened biodiversity values.
3. The site has reduced many human-wildlife conflicts.
4. The site is fairly well integrated into the network/ landscape.
5. Most of the biological communities are likely to be able to sustain the native biodiversity.
6. The expectations of most visitors are met.
7. Most of the neighbouring communities appear to be quite supportive of the management of the protected area (PA).

B. Management Weaknesses

1. Threats have been identified in the management plan, but there is no systematic assessment of threats.
2. There is no eco-development committee as such. The people of the surrounding areas do not appear to have any interest in the routine planning and management of the site, but the management of the PA tries to involve the stakeholders through a JFMC.
3. The site is being protected through normal patrolling; nevertheless incidences of hunting and illegal felling do sometimes take place.
4. Resource allocation is ad hoc and funds are never released in time.
5. NGOs do contribute to the management of the site, but opportunities for collaboration are not systematically explored.
6. The resources, both human and financial, allocated for the management of the site are always found to be inadequate.
7. Normally the local people do not appear to take any interest in the management of the PA, except occasionally, when the management tries to involve them.
8. A complaint handling system is operational, but it is not responsive to individual issues, and the follow-up provided is limited.
9. There is no website for the information dissemination.
10. There is no interpretation centre at the site.
11. There is no systematic or routine study of management-related trends, except an elephant census, which is carried out every two years or so. The number of elephants is declining.
12. There is no systematic schedule for maintenance and management of infrastructure/assets, which always depends on the availability of funds.

C. Actionable Points

1. A systematic study of threat assessment is needed for managing the site.
2. An eco-development committee needs to be formed and more communities need to be involved for effective management of the site.
3. There are incidences of hunting and illegal felling sometimes and these need to be tackled effectively.

4. Resource allocation and timely release of adequate funds are needed.
5. A greater contribution is needed from NGOs for the management of the site.
6. There is a need to enhance the resources, human and financial, allocated for management of the site.
7. The complaint handling system should be more efficient and responsive to individual issues.
8. There is a need to develop a website for providing information worldwide.
9. A nature interpretation centre needs to be developed immediately.
10. The flora and fauna of the site need to be studied systematically on a priority basis.

Nokrek Ridge National Park, Meghalaya Evaluation Year, 2012-2013

A. Management Strengths

1. The values and threats to the site are well documented and assessed because it is also a part of the Nokrek Biosphere Reserve.
2. There is no habitation or interference inside the national park mainly due to its geographical location.
3. The site is properly identified and categorized, with a detailed management plan that has been updated.
4. The participation of stakeholders in the planning process is recorded and there is a specific direction from the government for consultations.
5. Commendable efforts have been made to address human-wildlife conflict issues. The Forest Department also takes help from the police administration occasionally.
6. The site is integrated with the wider ecological landscape (with the biosphere reserve and community reserves).
7. There is good utilization of funds by the management.
8. There is a good linkage between staff performance management and management objectives.
9. Complaints are logged and responded to, and a few RTI queries have been addressed.
10. Substantial livelihood issues are addressed by the management of the protected area (PA) through income-generating enterprises.
11. The major threats to the site have abated, especially with the establishment of a community reserve.
12. The local people are supportive of the PA management, and they approach the authorities for their requirements.

B. Management Weaknesses

1. There are only a limited number of planning and monitoring programmes for habitat restoration.
2. The protection strategy is yet ad hoc. It mostly relies on foot patrolling and informal information collection.
3. Personnel are not explicitly allocated for management of the national park. Since the management extends beyond the PA (47 km²) to the biosphere reserve (820 km²) and elephant reserve (3200 km²), the strength is inadequate.
4. The PA manager considers the resources to be insufficient for most tasks.
5. There is no recognition of the staff of the PA and NGOs for their efforts.
6. Little or no information on the PA is available to the public.
7. The visitor services and facilities are not appropriate for the national park.
8. Some research is undertaken, but there is no systematic reporting. Not all the information relating to the research is shared with the PA management.
9. There is no systematic monitoring of wildlife species; ad hoc estimation of the populations of some key species is undertaken.
10. The expectations of visitors are not met satisfactorily owing to the remoteness and communication constraints.

C. Actionable Points

1. Appropriate habitat restoration programmes should be conceived.
2. A strengthened protection strategy is required for the national park.
3. Explicit allocation of personnel for the national park is required.
4. Enhanced resources are needed for management of the PA.
5. A comprehensive web site is required for the PA.
6. Basic visitor and tourism facilities are required.
7. Conducting research on and monitoring species need to be prioritized.
8. The community reserve model should be reinforced in this landscape.

Murlen National Park, Mizoram
Evaluation Year, 2006–2009

A. Management Strengths

1. The values of the site have been documented very well.
2. All the threats have been systematically identified and assessed.
3. The site has a comprehensive science-based management plan, which has been prepared through a participatory process.
4. The management plan is routinely, systematically and scientifically updated through a participatory process.
5. The site safeguards large number of threatened biodiversity values.
6. The stakeholders participate routinely and systematically in all planning processes.
7. Human-wildlife conflicts have been mitigated considerably.
8. The site is integrated fairly well into the network/landscape.
9. Comprehensive formulae are systematically used for most resource allocation, and generally funds are released in time.
10. There is a linkage between performance and management objectives.
11. There is systematic public participation in most aspects of PA management.
12. There are coordinated system logs and the process responds effectively to most complaints.
13. Substantial livelihood issues are addressed by the PA management.
14. Systematic evaluation and routine reporting of management-related trends are undertaken.
15. Most of the biological communities are likely to be able to sustain the native biodiversity.
16. The threats have been identified and have been abated.
17. The expectations of most visitors are met.
18. All the neighbours and local communities are supportive of the management of the PA.
19. A planned approach to management is being instituted and a deterioration of assets is being redressed.

B. Management Weaknesses

1. There is some human and biotic interference.
2. The site has been identified correctly, but it has not been systematically categorized.
3. Some planning and monitoring programmes are in place for habitat restoration.
4. The resources are not adequate, but whatever is available is being utilized.
5. NGOs make some contributions to the management of the site, but opportunities for collaboration are not systematically explored.

6. Only a few trained officers and frontline staff have been posted at the site.

C. Actionable Points

1. There is some human and biotic interference that needs to be resolved.
2. The site needs to be properly categorized into zones.
3. Habitat restoration should be carried out in a more planned manner.
4. Adequate resources need to be allocated.
5. A greater contribution of NGOs to the management is required.
6. More staff members need to be trained in wildlife management.

Ngengpui Wildlife Sanctuary, Mizoram Evaluation Year, 2009-2010

A. Management Strengths

1. The threats have reportedly been identified and assessed in the management plan.
2. The site has an earlier management plan.
3. The site safeguards a large number of threatened biodiversity values.
4. Stakeholders participate in most of the planning processes.
5. Habitat restoration programmes are generally well planned and monitored.
6. The site has a good protection strategy with six operational beats, four of them in strategic locations. The field staff are motivated and trained properly for affording protection.
7. Human-wildlife conflicts have been mitigated. There is a good strategy for making ex-gratia payments and providing compensation for crop and property damage.
8. The site is integrated fairly well into the network/landscape. The Dokalo Wildlife Sanctuary (WLS) and proposed sanctuaries such as Lohoka and Sinemon as well as the Ngengpui Reserve Forest are contiguous with Ngengpui WLS. Hence the protected area (PA) is a part of a greater landscape for ecological management.
9. Contributions of NGOs are systematically sought for the management of some site-level activities. Support has been received from the Young Lai Association (YLA) and Association for Environment Protection (AEP) in the form of voluntary services during fire fighting and awareness generation programmes. The Wildlife Trust of India's offer to provide accidental insurance cover to all frontline staff is being pursued.
10. Given the strength of the staff and quantum of resources available, the performance of the staff appears to be linked to protection activities.
11. The eco-development committees exist in all the fringe villages and they actively participate in ecodevelopment activities.
12. Due emphasis is given to complaints lodged by anyone and efforts are made to redress them as far as practicable.
13. Efforts are being made by the PA management to provide livelihoods to the poor members in the fringe communities through eco-development programmes. Various programmes that provide cooking gas and assistance for piggery, poultry and horticulture activities benefit all community members, especially women.
14. The ecological condition of the PA is in general good and hence it is expected that most of the faunal populations are increasing.
15. As the threats have been identified, efforts have been made to minimize their adverse impacts.
16. The local communities are supportive as they get some help from the PA management.

B. Management Weaknesses

1. The values of the site have not been documented or assessed well and are not being monitored.

2. Biotic interference exists. There are altogether 12 villages on the fringes with recognized village panchayats. As the villagers do not maintain cattle, the biotic pressure on the site is in the form of collection of firewood, edible plants and bush meat by some villages.
3. The site has been identified correctly but has not been systematically categorized. The entire sanctuary has been identified as the core area in the management plan.
4. The PA lacks up-to-date comprehensive management plan.
5. The PA manager feels that the resources are insufficient. There is a shortage of arms and buildings in the division. Resources are linked to priority actions, but funds are associated only with maintenance of infrastructure. The funds are inadequate even for this and are often not released in time.
6. The publicity efforts of the PA are found to be quite poor. Not even a single brochure is available. The state forest department has a website, but hardly any information on the PA has been incorporated in it.
7. The existing visitor facilities are highly inadequate. The tourism potential of the site does not appear to be very encouraging as the location of the site is remote with difficult road access. Very few tourists venture here, other than some naturalists.
8. Management-related reports are submitted to the controlling authorities on an ad hoc basis; however, there is no systematic evaluation of the management-related trends.
9. Regular censuses are not conducted and hence evaluation is difficult. Eleven elephants were counted during a census. A survey conducted to estimate the tiger population in 2006 and 2010 did not get any positive evidence, although tigers have been reported in the locality.
10. No exercise has been carried out in the PA to find out the ages and spacing of the biological communities.

C. Actionable Points

1. The values of the site need to be monitored and assessed.
2. The area needs to be categorized into zones.
3. Strong and urgent steps need to be taken to develop a science-based, comprehensive management plan of the site.
4. The resources are not adequate and the maintenance needs improvement. The resource allocation requires attention and adequate funds need to be released in a timely manner. The resources, both human and financial, allocated for management of the site need to be enhanced.
5. Steps need to be taken urgently to improve the visitor services and facilities. There is a need to update the website for providing information on management aspects.
6. There is a need to evaluate the management-related trends systematically.
7. A systematic study of the flora and fauna of the site needs to be carried out on a priority basis.

Phawngpui Blue Mountain National Park,
Mizoram
Evaluation Year, 2012–2013

A. Management Strengths

1. Most values systematically identified and assessed and monitored. Forest type of PA is sub-tropical montane and tropical evergreen forest with rhododendron, quercus, betulus, pinus mixed with bamboo and others. Major fauna include mountain ungulates, primates, carnivores, tragopan, hornbill and other avifauna. Mythologically, god of Phawngpui was Sangau, whose son married daughter of another mountain god Chiriang. The bride planted a single (pak) pine tree (far), hence, location named Far-Pak in Phawngpui.
2. No settlement inside the PA since Pangrang village was relocated in 1996 before final notification. Presently, 14 villages in fringe area. No grazing inside PA but resource extraction and tree felling in buffer area.

3. Site identified correctly and systematically categorized with proper zonation plans. The entire PA of 50 sq. km. forms core zone. Outside area has been considered zone of ecological restoration to restore abandoned jhum land.
4. Site has a comprehensive Management Plan. This is 2nd Review Management Plan 2008-2017.
5. Values are safeguarded by protection duties with patrolling paths and check-gates, habitat improvement through grassland development and water holes, and local community awareness/engagement. Patrolling duty-cum-sighting records and fire occurrence register is maintained.
6. Stakeholders participate through eco-development committee and village community meetings for inputs in planning. Local NGO Young Lai Association (YLA) occasionally support fire control but not very wildlife oriented.
7. Habitat restoration programmes undertaken through development of grassland, creation of water hole, provision of salt lick and fruit-bearing tree plantation.
8. There are forest staffs patrolling for protection, including engagement of muster roll workers from fringe villages, availability of duty camp and rest house inside PA. Good coordination with district, civil and police administration for offences and maintenance of offence register. There was one conviction for illegal tree felling. Licensed arms ownership record is maintained.
9. Site has been able to mitigate many human-wildlife conflicts. State Government has issued notification for ex-gratia payment to human injury and crop damage by wild animals.
10. DCF has done diploma in wildlife management from WII and advanced forestry course from Netherlands. Range officer has done forestry training and local refresher course.
11. Complaint can be submitted to DCF through Range Officer. Grievance Cell is also opened in DC office. All line department head officer (e.g. DCF) is designated as State Public Information Officer for RTI. No RTI cases have been recorded.
12. Livelihood activities are initiated through EDC schemes including piggery, poultry, horticulture, LPG connection to local community.
13. PA information on Mizoram tourism website. Information on CSS schemes is submitted by DCF and maintained by DC which is available for public on state website.
14. There is good record keeping at check gate on visitor entry and revenue collection. While approach to the PA is difficult logistically for tourists, average flow of tourist per year is about 900 persons.
15. There has been opportunistic sign survey for wildlife like carnivores and herbivores carried out in the PA by park staff. Previous research work has been conducted on primates, amphibians and reptiles, tragopan, and hornbill/birds.
16. Wildlife estimation counts are available for 2006 and 2010 indicating marginal increase/stability of key species like leopard, clouded leopard, hoolock gibbon, other primates and ungulates.
17. Some threats controlled due to protection and community engagement.
18. Some visitors satisfied to reach the beautiful landscape of Phawngpui.
19. Communities with eco-development activities are supportive.

B. Management Weaknesses

1. Major threats of forest fire (natural and jhum), traditional hunting, poaching by Burmese immigrants, and smuggling of valuable flora like orchids across Myanmar border.
2. PA area is taken on lease from Lai Autonomous District Council (LADC). 1st lease period of 25 years till 2008; 2nd lease of 10 years till 2018.
3. Conflict is mainly due to wild boar crop damage.
4. There is no forest linkage in proximity to the PA. Buffer area is mostly jhum cultivation. There is no knowledge of status of forest across the border in Myanmar which is contiguous to the PA.
5. DFO is supported by 1 Ranger and 16 frontline staff which is inadequate in relation to PA landscape. Muster Roll workers have to be engaged annually for many years.
6. Vehicles include 1 jeep in poor condition and 2 out of 5 motorcycles in running condition. 9 nos. arms and 1 operational wireless base station only available. There is 1 habitable forest rest house in PA, range office and staff quarter transit camp in Sangau village. There are only 5 active beats while others have no resources for operation.
7. Funds not allocated according to Management Plan priorities. There are inadequate funds, late release and declining fund allocation. There is backlog of salary/wages and eco-development activities are suspended.

8. No NGO contribution received.
9. Resource constraints for most activities.
10. Frontline staff not trained
11. No linkage between staff performance management and management objectives.
12. Local villagers engaged in wildlife patrolling duties and fire control. Village council is not oriented towards conservation goals.
13. Lai Autonomous Council is not generally oriented towards conservation and has conflict with forest department due to overlapping management
14. There are limited tourism facilities with a tourist lodge and forest rest house
15. Some evaluation and reporting undertaken but neither systematic nor routine.
16. Due to fund constraint under State Plan budget, maintenance schedule is not timely available for maintenance of infrastructure assets esp. building and roads.
17. Some threats to the Site have abated, others continue their presence
18. There is lack of mechanism for visitor feedback. There is difficult approach route to the PA.

C. Actionable Points

1. Major threats of forest fire (natural and jhum), traditional hunting, poaching by Burmese immigrants, and smuggling of valuable flora like orchids across Myanmar border need to be checked immediately.
2. Human wildlife conflict is mainly due to wild boar crop damage need proper mitigation.
3. Resource constraints for most activities. Additional funding is needed for the park activities.
4. The strength of the staff and personnel needs to be increased.
5. Frontline staffs also need to be trained in wildlife management.
6. Conflict between Lai Autonomous Council and forest department due to overlapping management need to be resolved at the earliest.
7. The research strategy should be prioritized, and the flagship species needs to be monitored using better technology.
8. Better tourism facilities required in the park.

Intanki National Park, Nagaland
Evaluation Year, 2006–2009

A. Management Strengths

1. The values of the site have been documented well.
2. Most potential threats have been systematically identified and assessed. Encroachments are being removed by offering alternative land to the villagers.
3. The site has only limited human and biotic interference.
4. The site has been identified correctly and has been systematically categorized into Core, Buffer and Tourism Zone.
5. There is an old management plan.
6. The site safeguards a large number of threatened biodiversity values.
7. Stakeholders participate in most of the planning processes.
8. There are some restoration programmes and fire protection measures are undertaken as per management plan.
9. Human–wildlife conflicts have been reduced by paying compensation to the villagers for crop/property loss and by encouraging villagers to change the cropping pattern.
10. The PA is contiguous with Dhansiri Reserve Forest of Assam to the west.

- 11. The personnel are organized, although they have very few trained persons.
- 12. The resources are found to be linked with priority actions.
- 13. Substantial livelihood issues are addressed by the PA management by providing facilities such as handlooms and weaving machines.
- 14. Management related- trends are systematically evaluated, and information is regularly reported.
- 15. The populations of most threatened/endangered species are increasing, and most others are stable.
- 16. Most of the neighbours/local communities are supportive of the PA management.

B. Management Weaknesses

- 1. The management plan has not been revised for a long time.
- 2. There are no supports from NGOs.
- 3. The resources are inadequate. However, efforts are on to generate external resources.
- 4. The trained manpower is inadequate.
- 5. The linkage between performance and management objectives is very limited.
- 6. The location of the site, the pattern of the fringe population and the low density do not allow regular participation of the people in the management of the PA.
- 7. The complaint handling system is operational, but it is not responsive to individual issues and the follow-up provided is limited. Generally complaints received through the Officer-in-Charge of the national park are forwarded to the Chief Wildlife Warden.
- 8. Visitor services and facilities are at odds with relevant PA category. The park is not yet open to the public.
- 9. Little or no management has been undertaken, or despite management efforts, deterioration of cultural heritage assets continues.

C. Actionable Points

- 1. The site has a management plan, but this needs to be revised immediately.
- 2. Censuses based on scientific methods need to be conducted for the threatened biodiversity. Due to the law and order situation prevailing at the site, evaluating the threatened biodiversity properly is difficult. Censuses have been carried out for few selected species, but a more scientific approach is required.
- 3. NGOs contribution needs to be explored for PA management.
- 4. There is a need to pay attention to adequate fund releases and resource allocation.
- 5. The staffs need to be trained in wildlife management.
- 6. The matter of opening the park to the public needs to be looked into immediately.
- 7. Some of the biological communities are likely to be able to sustain the native biodiversity. Very little is known about the biodiversity and a detailed assessment is required.
- 8. Urgent steps need to be taken to stop the deterioration of the cultural heritage and values of the site.

Fakim Wildlife Sanctuary, Nagaland
Evaluation Year, 2012-2013

A. Management Strengths

- 1. There is no human or biotic interference inside the site or in the buffer zone owing to their location in a remote hilly terrain.
- 2. Stakeholders participate in some planning. All the entire lands/forests belong to either the local community or private owners. Hence, their consent is imperative for the planning process.

- 3. There are some attempts to involve the public in some aspects of management of the protected area (PA). The local community has passed a resolution against hunting and participated in a conservation awareness programme.
- 4. The official census lists of key species such as the tragopan, mithun and deer indicate that the populations of wildlife species are stable.
- 5. There is some support from the local community support for the management as the community has passed a resolution against hunting in the PA.

B. Management Weaknesses

- 1. The PA is very small (only 6.4 km² in area), and there is no zonation.
- 2. No management plan has been received.
- 3. The protection strategy is ad hoc. There is no exclusive staff for this PA; the forest staffs of the larger wildlife division look after this site.
- 4. Given the size and location of the site, there is no conscious approach to integrating it with the wider landscape.
- 5. Personnel are not explicitly allocated for PA management.
- 6. There is little or no infrastructure such as vehicles, equipment and camps.
- 7. The resource allocation is ad hoc and inadequate. Funds available through CSS amounted to a meagre Rs.1.75 lakhs in the last five years.
- 8. Limited efforts of livelihood issues addressed by PA management.
- 9. Little or no information on the PA management is available to the public.
- 10. There is no systematic inventory or maintenance schedule due to a lack of funds.
- 11. There is disenchantment among the local communities at the lack of development of the village in lieu of the community land ceded for creating the PA.

C. Actionable Points

- 1. The feasibility of a PA of this size (6.4 km²) needs to be reassessed. The implementation of a community conserved area may be explored.
- 2. An appropriate management plan is needed.
- 3. Engaging with villages on the fringes of the site has to be one of the key components of the protection strategy.
- 4. The prospects of integrating the site with a Trans-boundary ecological landscape are good with a community forest buffer on the Indian side and a contiguous forest across the border in Myanmar.
- 5. Explicit allocation of personnel, infrastructure and financial resources is urgently needed for managing this PA.
- 6. The livelihood issues of the local communities need to be proactively addressed by the PA management through eco-development schemes.
- 7. The no-tourism policy needs to be revisited.
- 8. A policy for regular and scientific research and monitoring should be put in place.

A. Management Strengths

- 1. The values have been identified and are systematically recorded.
- 2. All threats are systematically identified and assessed.
- 3. The site does not have a very high level of biotic interference as it is almost inaccessible from different sides. There is an international border along the northern and eastern sides.
- 4. The site has been properly identified and zonation has been carried out.

5. The site protects a large number of threatened species.
6. Majority of the stakeholders participate in the planning.
7. Habitat restoration programmes are generally planned and monitored well.
8. Reintroduction programme has not yet been properly designed, but some planning has been carried out.
9. The protection strategy of the forest department is good and effective.
10. Some human-wildlife conflicts have been mitigated.
11. The site is integrated fairly well into the network/landscape. The site is located in the vast Himalayan landscape; hence there are no major activities that the forest department can undertake. The site is an integral part of the broad Himalayan alpine and sub-alpines landscape and ecosystem.
12. Management personnel are highly motivated and they are allocated works for achievement of the management goals.
13. Whatever resources are available to the management have been utilized for achievement of specific management objectives.
14. In a number of cases specific allocation of funds is being made to achieve specific management objectives.
15. With very small staff strength, a linkage is being made as far as practicable to achieve management objectives.
16. There is comprehensive and systematic public participation in all the important aspects of the management of the protected area (PA). The participation of the public, which is being systematically enlisted, is praiseworthy.
17. There is a responsive system of handling complaints.
18. Substantial livelihood issues are addressed by the management of the PA.
19. The livelihood issues are being addressed to some extent. The population is comparatively small in the fringe areas and the management is suggesting alternative livelihoods and market linkages.
20. Information is available on important wildlife and natural resources such as rivers and streams. Leaflets and brochures are available. TV and radio broadcasting also provide information.
21. A systematic inventory provides the basis for the maintenance schedule, but the funds made available are inadequate.
22. Most of the biological communities are likely to be able to sustain the native biodiversity. It is expected that if the present situation prevails, the native communities will be sustained.
23. Most threats to the site have been ended, because of the good relations maintained with the villagers on the fringes.
24. The expectations of visitors are normally met in terms of general information.
25. All the neighbours and communities are supportive to the PA management. The relationship with them is very good. An intelligence network is also in place.
26. The management has a fairly good idea about the specific cultural assets of the Lepcha and Bhutia communities. They are motivated to protect the assets.

B. Management Weaknesses

1. There is no management plan in place; however, a comprehensive management plan is under preparation. The non-availability of topo sheets of the sensitive border areas (only 44 out of 77 are available) is one of the reasons.
2. The habitat restoration programmes are well planned, but due to the remoteness of the various sites and lack of manpower, big plans cannot be taken up.
3. NGOs have contributed very little, only some training has been imparted to the forest staff.
4. The resources are insufficient for most tasks. For the extent (18,000 km²) of inaccessible but vital areas to be covered, the resources quite insufficient. There are very few vehicles.
5. Very few trained personnel are available.
6. The services provided for tourism are not adequate, but there are vast opportunities for extension of tourism.
7. The status of the wildlife is difficult to assess. No regular census of all the threatened species is carried out. This is mainly because of the terrain and the different methodologies needed for different species.

C. Actionable Points

1. Urgent steps are needed to finalize the preparation of a comprehensive management plan for the site.
2. The contribution of NGOs to the management of the PA needs to be enhanced.

3. There is an intense requirement of resources that needs to be met immediately.
4. The site needs more trained manpower.
5. The Department of Tourism needs to take up the issues related to tourism in collaboration with the Department of Forest.
6. Immediate actions are required to conduct a census of all the threatened species reported from the site.

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Barsey Rhododendron Wildlife Sanctuary, Sikkim Evaluation Year, 2006–2009

A. Management Strengths

1. The values of the site have been well documented.
2. All potential threats are systematically identified and assessed.
3. The site has a management plan prepared through a participatory process.
4. The site safeguards a large number of threatened biodiversity values.
5. The stakeholders get opportunities to participate in the planning processes.
6. Habitat restoration programmes are planned and monitored.
7. The site has a comprehensive and very effective protection strategy. Detailed protection strategy has been worked out keeping in mind the ground reality.
8. Efforts are made to mitigate human wildlife conflict.
9. The site is fully integrated into the wider network/ landscape. Singalila NP and Kanchandzonga NP are neighbouring PAs to the Barsey Rhododendron Sanctuary.
10. The resources are linked with priority actions.
11. There is a linkage between the performance and management objectives.
12. The participation of the public in the management of the protected area (PA) is very good.
13. There is a good mechanism for handling complaints.
14. Substantial livelihood issues are addressed by engaging local communities through EDCs.
15. Systematic evaluation of management-related trends is undertaken and there is routine reporting.
16. Most of the threats has been identified and have been reduced.
17. Visitor expectations are generally met.
18. The small population on the fringe is supportive of the forest department.
19. Cultural assets in terms of tribal community identification and their cultural attributes are being done.

B. Management Weaknesses

1. There is an area of extent 10 km² under cardamom cultivation that is imposing biotic pressures on the site.
2. Categorization and zonation have not been done so far.
3. The resources are inadequate.
4. All the staff members are trained in general forestry but not in wildlife management.
5. The facilities available for visitors are not adequate. There is no interpretation centre.
6. As there has been no census, it is difficult to assess whether the populations of threatened/endangered species are stable or whether they are increasing.

C. Actionable Points

1. 10 km² area under Cardamom cultivation, which has posing biotic pressure need to be sought immediately.
2. The site needs to be categorized into zones.

3. The site requires a greater contribution from NGOs to its management.
4. Adequate resource allocation is needed.
5. The staffs need to be trained in wildlife management.
6. A nature interpretation centre needs to be developed immediately.
7. There is an urgent need for a systematic study of populations of the threatened/ endangered species of the site.

Pangolakha Wildlife Sanctuary, Sikkim

Evaluation Year, 2009-2010

A. Management Strengths

1. The site has been identified and categorized.
2. Management plan has been prepared for the period from 2008-2009 to 2017-2018, in consultation with the local communities and the plan has been approved by the state government. The management plan is routinely, systematically and scientifically updated through a participatory process.
3. All the threatened fauna, such as musk deer, red panda, blood pheasant, himalayan monal, satyr tragopan, tiger (not resident in the PA), leopard, snow leopard, clouded leopard and Chinese pangolin and many threatened plants, such as rhododendron, yarsagumba (*Cordyceps sinensis*) and other high-altitude medicinal plants are well protected.
4. Habitat restoration programmes are generally well planned and monitored. Some cattle sheds in some parts of the PA were removed and the disturbed habitat is being restored by planting local species.
5. The site has a comprehensive and very effective protection strategy. The management gets full co-operation from the Seema Sashatra Bal (SSB), defence units and local eco-development committees.
6. Human-wildlife conflicts have been mitigated. Main conflicts involved Himalayan Black Bear and various steps have taken to mitigate the conflict.
7. The site is integrated well into a network/landscape with adjoining protected areas located within the State, neighbouring West Bengal and Torsa Nature Reserve of Bhutan.
8. Staffs are well organised.
9. Funds are normally released in time and the funds provided for the ecological activities are considered sufficient.
10. A large number of trained officers and frontline staffs are posted at the site.
11. The tasks performed by the staff are directly linked to management objectives.
12. There is comprehensive and systematic public participation in all important aspects of the PA management.
13. Complaints are recorded in relevant files and steps are taken to address the issues in a timely manner.
14. Substantial livelihood issues are addressed by the PA management. Local community members are engaged in forestry and tourism related activities by the PA management.
15. Some tourist facilities are available just outside the PA.
16. All management-related activities are recorded and reported to the higher authorities.
17. As reported by local communities wildlife populations are either stable or increasing.
18. A casual visit to the site indicates that there is a mix of ages and spacing in the floral communities.
19. Most threats to the site have been abated.
20. Visitors are reportedly satisfied with the scenic beauty and wilderness.
21. The neighbouring communities are supportive of the PA management, mainly because of the positive approach of the management towards them.
22. The forests of Pangolakha themselves are considered as cultural heritages by the local people and are being protected well. Further, the management extends protection to some small places of worship (devi than), meditation caves (gufa) and water bodies of religious significance in the PA.

B. Management Weaknesses

1. Threats and values have been identified, but these have not been systematically assessed. Feral dogs left behind by army units are a major threat. They often try to hunt wild animals in the PA. The labour forces used by the army to construct roads are another threat. The labourers often settle in the peripheral areas of the PA, depending on the PA for firewood (mainly for their space-heating needs). Improved access through a couple of roads built by the army—one from Bheembase to Dokola and the other from Flaghill to Dokola—may facilitate resource extraction and other adverse impacts on the PA.
2. Although the staffs are well organized, there is a lack of both financial and human resources. Specific staff members are not allocated to address some problems, such as controlling the feral dog population.
3. The DFO is responsible for managing three wildlife sanctuaries and has only one patrolling vehicle and three motorcycles. Government accommodation is almost non-existent, except for the living quarters of the forest guards and a trekking hut. Other staff members stay in rented accommodation in the adjoining villages. The arms they have been provided are reportedly adequate.
4. The funds provided for infrastructure development, transport and communication facilities are inadequate.
5. There is no interpretation centre for tourists.
6. The PA management is unable to carry out routine maintenance of assets/infrastructure due to a poor availability of funds.
7. A systematic survey of the diverse flora and fauna of the site has not been carried out. Scientific censuses have not been carried out for animals other than the red panda.

C. Actionable Points

1. Major threats from Army peoples as mentioned in weaknesses need to resolve immediately.
2. The lack of human and financial resources needs urgent attention, especially in terms of infrastructure development, transport, communication facilities and appointment of the requisite staff. There is a need to enhance the resources allocated for management of the site.
3. Steps need to be taken to develop a nature interpretation centre for improving the tourism facilities.
4. A proper scientific and systematic study of the flora and fauna of the site needs to be carried out on a priority basis.

Fambonglho Wildlife Sanctuary, Sikkim
Evaluation Year, 2012-2013

A. Management Strengths

1. The sanctuary located close to the state capital, Gangtok, represents a pro-active step towards safeguarding the ecological integrity of the area.
2. The sanctuary comprises the reserved forests around Gangtok, which used to have legal protection under the Indian Forest Act.
3. The sanctuary is a major watershed, providing drinking water to the town of Gangtok and others.
4. Known as the green lung of Gangtok and harbours species of high conservation value, such as the Red Panda, Binturong, Himalayan Black Bear, Satyr Tragopan and Khaleej Pheasant and a large number of highly valuable medicinal plants.
5. The WLS is characterized by a large number of biodiversity and watershed values and the compactness of the forests.
6. The WLS has some very good examples of east Himalayan sub-tropical and temperate forests and the associated fauna.
7. Schools around the sanctuary are enthusiastic in participating in nature camps and trekking camps.

8. College students, EDC members and civil society representatives are interested in being involved in bird censuses and other similar conservation activities.
9. There is considerable potential for community-centric ecotourism initiatives.

B. Management Weaknesses

1. The sanctuary has an extreme shortage of staff and the whole area is managed by a Range Officer at Golitar, along with one Block Officer and two Forest Guards. They are supervised by the DFO (WL), East Division, who sits at Gangtok and is also responsible for other areas.
2. No staff members are trained in wildlife management.
3. There are few villages inside the sanctuary in Lingdong Reserved Forest (RF) and Tumin RF and in the absence of livelihood alternatives; the villagers exert pressures on the habitat.
4. The area is vulnerable to encroachment of lands, especially around areas close to human habitations. There is illegal felling of trees for firewood and sometimes for timber; unauthorized removal of NTFP (such as bamboo shoots and fruits of *Machilus* and *Castanopsis*) and collection of boulders and stones from the WLS.
5. The PA suffers from poor infrastructure. There is only one very old and dilapidated watchtower at Fambonglho Peak, which is in need of urgent upgrading. There is only one check post at Pangthang. The office infrastructure is equally poor.
6. There is an acute shortage of wireless sets, vehicles, weapons and other equipment.
7. There are anomalies in the land records, as the cadastral records of the pre-merger survey of lands (from 1951–1952) are at variance with the post-merger survey records of 1979–1980. At many places, the old boundary pillars have been removed.
8. Hardly any NGO is involved in supporting the WLS in effective management.

C. Actionable Points

1. The discrepancies in the land survey records between the cadastral survey of 1951–1952 and the survey of 1979–1980 need to be urgently resolved and the boundaries of the WLS consolidated.
2. Corridors connecting important forest fragments should be identified and mapped and a landscape-level management plan with Fambonglho as a core area needs to be developed to protect conservation areas and enhance rural livelihoods.
3. The WLS should be placed under the exclusive charge of an ACF, increasing the strength of the existing field staff (Forester and FG cadres) to at least three times the current strength. Further, to assist the EDCs in effectively participating in the management of eco-tourism-related activities and patrolling for protection, deployment of villagers on daily wages will be needed.
4. A vigorous capacity building for the staff in wildlife management is essential. Short-term training courses/programmes in wildlife management (planning, protection and monitoring) should be taken up at the division level on top priority for capacity building of all the field staff.
5. Community-centric eco-tourism should be improved and the local communities and staff should be taken to other parts of the country such as Periyar, Gorumara National Park to learn about management of eco-tourism. There they can observe and learn about innovative community-based conservation programmes.
6. The infrastructure needs to be improved urgently in terms of equipping the WLS with adequate means of mobility, buildings and equipment.
7. Funding for carrying out all habitat restoration prescriptions and for scheduled maintenance work of inventories needs to be ensured.
8. While lists of animal and plant species of conservation value are available, no systematic assessment of endangered species is carried out. The PA does not have information on population trends and similar matters to improve the scientific management of the WLS. These inadequacies should be addressed scientifically according to a schedule.
9. Water is the most important direct benefit that society derives from this sanctuary. Given the green attitude of the state government and civil society, imposing a water cess on big resorts and business entrepreneurs could be thought of, which may support the Forest Department in conservation work.

Sepahijala Wildlife Sanctuary, Tripura

Evaluation Year, 2006–2009

A. Management Strengths

1. Values and threats have been systematically identified and assessed.
2. There is a management plan.
3. The site safeguards large number of threatened biodiversity values.
4. Stakeholders routinely and systematically participate in all the planning processes.
5. All human-wildlife conflicts have been mitigated and all the neighbour communities are supportive of the management of the PA.
6. There is a comprehensive and systematic public participation in all important aspects of protected area (PA) management.
7. All the complaints are systematically logged in a co-ordinated system and timely responses are provided with minimal repeat complaints.
8. Livelihood issues of resource-dependent communities, especially women, are addressed effectively by the PA managers.
9. Comprehensive reports are provided routinely on the management.
10. All visitor services and facilities are in accordance with the relevant PA category, and most of them enhance the values of the PA. The expectations of most visitors are met.
11. A planned approach to the management is being instituted and a deterioration of cultural assets is being redressed.

B. Management Weaknesses

1. The site has some human and biotic interference from outside the PA.
2. There is a management plan, but it is not comprehensive and does not divide the PA into different zones.
3. The habitat restoration programmes are entirely ad hoc.
4. The site is not integrated into the wider network/landscape.
5. Resource allocation is ad hoc and funds are never released in time.
6. Some evaluation and reporting of management-related trends has been undertaken, but it is neither systematic nor routine.

C. Actionable Points

1. The biotic interference from outside the PA needs to be resolved immediately.
2. The site needs a comprehensive management plan and categorization into zones.
3. Habitat restoration needs to be carried out in a planned way.
4. There should be no delays in the release of funds and allocation of resources.
5. Systematic and routine reporting of management-related trends need to be done on priority basis.

Gumti Wildlife Sanctuary, Tripura

Evaluation Year, 2006-2009

A. Management Strengths

- 1. There is an outdated management plan.
- 2. The site safeguards a large number of threatened biodiversity values.
- 3. Human-wildlife conflicts have been reduced.
- 4. There is a linkage between performance and management objectives.
- 5. Threats to the PA have been identified and minimized.

B. Management Weaknesses

- 1. The site has been identified correctly, but it has not been categorized into zones.
- 2. There is a management plan, but it is not comprehensive. There was a management plan that covered a period up to 1997-1998 and no new management plan.
- 3. A small number of planning and monitoring programmes are in place for habitat restoration.
- 4. The resources are inadequate.
- 5. The complaint handling system is operational with limited follow-up.
- 6. There are ecodevelopment committees (EDCs), but *jhuming* and grazing are still a problem in the sanctuary.
- 7. Only few trained staff members are posted in the PA.
- 8. Some evaluation and reporting of management related-trends have been undertaken, but these are neither systematic nor routine.
- 9. The biological communities unlikely to be able to sustain the native biodiversity, no data are available.
- 10. Only few communities are supportive of the management of the protected area (PA).

C. Actionable Points

- 1. A comprehensive management plan needs to be prepared urgently as there has been no management plan in place since 1997-1998.
- 2. The site needs to be categorized into zones.
- 3. The habitat restoration programme needs to be more focused.
- 4. The funds need to be adequate and more staff members need to be trained in wildlife management.
- 5. A systematic approach to handling complaints needs to be brought in urgently.
- 6. The *jhuming* and grazing pressures need to be reduced immediately.
- 7. The facilities provided for visitors need to be improved immediately.
- 8. Systematic and routine reporting of biodiversity information needs to be done on a priority basis.
- 9. More local communities should be involved in the management of the PA.

Trishna Wildlife Sanctuary, Tripura Evaluation Year, 2009–2010

A. Management Strengths

1. Zonation of the 195 km² sanctuary has been done into core (55 km²), buffer (90 km²) and ecotourism zones.
2. The site safeguards large number of threatened biodiversity values with improved protection and management.
3. Thirteen eco-development committees (EDCs) have been formed in the villages of the fringe area. The villagers received some benefit from the PA through these EDCs. The local communities are supportive to the PA due to EDC activity.
4. Habitat restoration programmes are generally well planned and monitored. Improvements of habitats in the sanctuary through construction of check-dams to create reservoirs and through planting of grasses have been undertaken.
5. The site has a good protection strategy, with three operational ranges (Rajnagar, Abhaya and Rangamura), and 15 beats. Protection team patrol the sanctuary on a regular basis.
6. Mitigation of human-gaur and human-wildlife conflicts by erecting a fence close to some inhabited/cultivated fringe areas.
7. The headquarters and range offices of the PA are well equipped and the PA has 10 vehicles.
8. The human and financial resources are adequate and funds are generally released in time.
9. The system of handling complaints pertaining to human animal conflict exists in PA.
10. Substantial livelihood issues are addressed by the PA management. Women benefitted from the livelihood initiatives such as distribution of improved stoves, sewing machines, incense stick-making kits and incentives for poultry, piggery and fishery activities.
11. Information is available to the public through a brochure, a website and a checklist of birds.
12. Eco-tourism zone is designated with facilities for viewing wildlife. Tourist accommodation exists, and education and publicity material is offered for public. The PA is visited by few local and national-level visitors and their expectations are generally met.
13. Management-related reports are submitted to the controlling authorities.
14. An inventory of assets is maintained by the PA management.

B. Management Weaknesses

1. The management plan prepared in 1996 for the period 1997–2002 is outdated. The threats are identified but not properly documented and assessed in the existing plan.
2. The site has some human and biotic interference. Encroachment is on the increase in the buffer areas, particularly near the Bangladesh border. A state highway passes through some parts of the sanctuary and these parts are badly affected by settlements. Encroachments in the buffer and core area have 40 families in Prakash Nagar, 13 families settled in Jalapathar and 4 tribal families residing in the PA before it was notified.
3. The final notification of the zone categorization is still pending due to administrative reasons.
4. There is no active involvement of EDCs in the planning processes of the PA.
5. There are patches of reserve forests on all sides of the sanctuary, but the connectivity is poor for a wider network/landscape due to the presence of private land in between.
6. No support from NGOs has been reported.
7. As the management plan has not been updated after 2002, all activities related to the management of the PA seem to be taken on an ad hoc basis.
8. There is no proper interpretation centre.
9. There is no systematic evaluation of the management-related trends.
10. Except for the gaur and primates, little effort is taken to assess and analyse the population trends of the wildlife.

C. Actionable Points

- 1. Strong actions need to be taken to revise the outdated management plan (of 2002) of the site.
- 2. The values and threats of the site need systematic assessment.
- 3. The tremendous pressure posed by the presence of human and biotic interference need to be mitigated immediately. Relocation of the 40 families in Prakash Nagar, 13 families settled in Jalapathar and 4 tribal families needs special attention urgently. Mitigation measures need to be taken for the state highway passing through the PA and encroachment from the Bangladesh border.
- 4. The final notification of the zones is needed immediately after finalisation of administrative problems/reasons.
- 5. Apart from livelihood issues, EDCs should be motivated to take part in the planning processes of the PA management.
- 6. There are patches of reserve forests on all sides of the sanctuary, but the connectivity is poor due to the presence of private land in between. Mitigation measures are needed to create a corridor or link between the forest sites.
- 7. Other than gaur and primates, systematic study of flora, fauna and other management related trend needs to be carried out on a priority basis.
- 8. The visitor services need to be enhanced by creating a nature interpretation centre.

Bison (Rajbari) National Park, Tripura
Evaluation Year, 2012-2013

A. Management Strengths

- 1. Bison National Park has been correctly demarcated, carved out of the existing Trishna Wildlife Sanctuary. The Bison is the flagship species. The values of the site have been identified. Almost all the existing threats have been systematically identified and assessed.
- 2. The basic infrastructure (equipment, buildings, etc.) is adequate, and resources are allocated specifically for maintaining it. Members of the field staff doing good work are rewarded by the management of the protected area (PA) each year.
- 3. The participation of the public is in a few management-related issues such as creating awareness and providing intelligence. The local population is mostly supportive of the management of the PA, primarily because of livelihood activities. The livelihood issues of the resource-dependent communities, especially women, are addressed well by the management of the PA. A sanction register and scheme-wise records are maintained.
- 4. Routine research and monitoring activities are undertaken. Several research documents have been prepared by academic institutions, and periodic censuses and regular patrols are conducted. The populations of the key wildlife species, particularly the Indian Gaur, are stable.
- 5. A systematic inventory maintenance schedule is in place.

B. Management Weaknesses

- 1. Only the first Management Plan has been prepared, and it is still in the draft stage. It has not yet received official approval. There are very few planning and monitoring programmes for habitat restoration. A few cases of human-wildlife conflicts have been resolved, but crop damage schemes are pending with the management. The fuelwood requirements of the fringe villages have not been linked with other government schemes yet.
- 2. The strength of the staff is inadequate. There are few trained officers and no trained frontline staff members.
- 3. Resource allocation is ad hoc, and no funds have been received in the last 2 years. There is no interpretation centre, and there is limited accommodation for visitors. There is no feedback, and tourists are not allowed in the national park area although they are permitted in the wildlife sanctuary.

C. Actionable Points

1. The management plan needs to be formally approved and made operational.
2. The protection strategy of the national park needs to be upgraded.
3. Prompt action is required when dealing with crop damage and other conflicts with wildlife.
4. Regular funding is needed for the activities of the park.
5. The strength of the staff needs to be increased. The staffs need to be trained.
6. Essential facilities need to be provided for visitors and tourism.

Clouded Leopard National Park, Tripura
Evaluation Year, 2012–2013

A. Management Strengths

1. The values and threats to the site have been generally identified, and there is no direct anthropogenic activity in the national park, which is the core area of the wildlife sanctuary.
2. There is good participation of the public in the management of the park through eco-development committees (EDCs). Five EDCs are associated with the national park, and the members are involved in affording protection, conducting censuses, intelligence sharing and raising awareness along with the Forest Department.
3. Information on the management of the protected area (PA) is shared at EDC meetings.
4. There are good visitor services, viz. an interpretation centre, short films, accommodation facilities, visitor entry and feedback records, etc. A systematic inventory and maintenance schedule are followed.
5. The key wildlife species appear to be stable although the results are mostly based on indirect evidence owing to the difficulties involved in monitoring.
6. The threats are mostly controlled, and the people support the initiatives of the park management.
7. The expectations of visitors are mostly met as they can avail themselves of a zoo, wildlife sanctuary and national park in the same forest complex.
8. The local population is supportive of the PA management through active EDCs, and their close engagement is evident.

B. Management Weaknesses

1. Only the first management plan has been prepared. This is in the draft stage and has not received official approval yet.
2. There are a limited number of planning and monitoring programmes for habitat restoration.
3. The protection strategy of the national park is ad hoc. Only the wildlife sanctuary acts as a natural buffer.
4. There is no integration with the wider ecological landscape.
5. The manpower, infrastructure and financial resources are limited. There is no information about the total number of posts sanctioned for the national park. There has been no central funding for the previous three years.
6. No staff members trained in wildlife management.
7. Research and monitoring activities are not systematic or routine. One of the challenges is in monitoring the flagship species of the site, namely the clouded leopard—hence, indirect evidence is relied on.

C. Actionable Points

1. The management plan needs to be formally approved and made operational.
2. A comprehensive protection strategy and clear demarcation are required for the overlapping core (national park) and buffer (wildlife sanctuary) areas.
3. Additional funding is needed for the park activities.
4. The strength of the staff and personnel needs to be increased.
5. The research strategy should be prioritized, and the flagship species needs to be monitored using better technology.







CHAPTER **FOUR**



THE WAY FORWARD

The present MEE process has provided valuable insights into the management processes and practices in all PAs. The strengths, weaknesses and immediate actionable points have been described in respect of all 125 protected areas included in this report. It is observed that PAs have to maintain these Strengths and address their Weaknesses in a systematic manner. Efforts should be made to implement the immediate actions indicated for each protected area. It is critical that each protected area has a good science based Management Plan formulated through a participatory process. Till such time the Management Plans are prepared/revised/updated the Annual Plan of Operation (APOs) should take into account actions required for implementing the results of the evaluation. The MoEFCC must ensure that adequate funds are provided and a system of compliance monitoring is put in place.

Filled in questionnaires in respect of all 125 Protected Areas evaluated between 2006 to 2014.



ANNEXURE-I

Landscape regions, sites, teams for MEE of
Protected Areas (NP+WLS) in India
2006-2014

Regions	States	No. of NP/WLS	Names of Protected Areas (National Parks and Wildlife Sanctuaries)	Earlier Teams
Northern	Delhi, Haryana, Himachal Pradesh, J & K, Punjab, UP, Uttarakhand	22 PAs (12 WLS +NP)	Asola WLS, Sultanpur NP, Kalesar NP, Bhindawas WLS, GHNP, Pin Valley NP, Kibber WLS, Simbalbara WLS, Kishtwar NP, Changthang WLS, Kishtwar NP, Changthang WLS, Hemis NP, Dachigam NP, Abohar WLS, Sohelwa WLS, National Chambal WLS, Kaimur WLS, Sohagi Barwa WLS, Govind Pashu WLS, Rajaji NP, Nanda Devi NP, Kedarnath WLS and Gangotri NP	Chairmans: Sh. A.S. Negi, Sh. M.G. Gogate Members: Dr. Pushpam Kumar, Dr. A.M. Dikshit, Dr. S.N. Prasad, Dr. Ashish David WII Faculty: Sh. S. Sen
Southern	A & N, Andhra Pradesh, Goa, Karnataka, Kerala, Pondicherry & Tamil Nadu	28 PAs (18 WLS+10 NP)	Mahatma Gandhi NP, Interview Islands WLS, Papikonda WLS, Gundla Brahmeswaram WLS, Shri Venkateshwara NP, Coringa WLS, Kolleru WLS, Bhagwan Mahaveer WLS, Bondla WLS, Mollem NP, Netravali WLS, Dandeli WLS, Mookambika NP, Biligiri Rangaswamy Temple WLS, Kudremukh NP, Wayanad WLS, Eravikulam NP, Shendurney WLS, Silent Valley NP, Peppara WLS, Oussudu WLS, Gulf of Mannar NP, Mudumalai NP, Mukurthi NP, Satyamangalam WLS, Srivilliputhur Grizzled Squirrel WLS and Point Calimere WLS	Chairmans: Dr. S.N. Rai, Sh. V.B. Sawarkar Members: Dr. R. Sukumar, Dr. E.A Jayson, Dr. A.J.T. Johnsingh, Dr. P.S. Easa, Dr. Advait, Edgoankar WII Faculty: Dr. Dhananjai Mohan
Eastern	Bihar, Chattisgarh, Jharkhand, Orissa & West Bengal	25 PAs (20 WLS + 5NP)	Kaimur WLS, Kavar Jheel WLS, Nakti Dam WLS, Vikramshila Gangetic Dolphin WLS, Udanti WLS, Semarsot WLS, Banrnawapara WLS, Guru Ghasidas NP, Kangar Valley NP, Mahauadar WLS, Dalma WLS, Hazaribag WLS, Kodarma WLS, Sunebeda WLS, Bhitarkanika WLS, Garhimata WLS, Chandaka Dampara WLS, Hadgarh WLS, Chilika (Nalaban) WLS, Mahananda WLS, Jaldapara WLS, Gorumara NP, Singalila NP, Neora Valley NP and Chapramari WLS	Chairmans: Sh. S.C. Dey, Sh. M.G. Gogate, Sh. B.K. Patnaik Members: Sh. P.K. Mishra, Dr. D.S. Srivastava, Dr. P.S. Easa, Dr. S.N. Prasad WII Faculty: Sh. V.K. Uniyal

Regions	States	No. of NP/WLS	Names of Protected Areas (National Parks and Wildlife Sanctuaries)	Earlier Teams
Western	Gujarat, Maharashtra, Madhya Pradesh & Rajasthan	24 PAs (15 WLS + 9 NP)	Barda WLS, Marine (Gulf of kutch) NP, Wild Ass WLS, Shoolpaneshwar WLS, Velavadar NP, Gir NP, Purna WLS, Sanjay Gandhi NP, Navegaon NP, Bhimashankar WLS, Chandoli NP, Chaprala WLS, Great Indian Bustard WLS, Karnala WLS, Kuno Palpur WLS, Madhav NP, Ratapani WLS, Noradehi WLS, Karera WLS, Keoladeo NP, Desert NP Kumalgarh WLS, Sitamata WLS and Mount Abu WLS	Chairmans: Sh. M.G. Gogate, Dr. R.P.S. Kotwal, Dr. D.N.S. Suman Members: Dr. Erach Bharucha, Dr. S.N. Prasad, Dr. Ashish David, Dr. Justus Joshua, Dr. Yogesh Dubey WII Faculty: Sh. P.C. Tyagi
North-eastern	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim & Tripura	26 PAs (13 WLS + 13 NP)	Sessa Orchid WLS, Eagle Nest WLS, Mouling NP, D'Ering Memorial (Lali)WLS, Pobitora WLS, Orange (Rajiv Gandhi) NP, Dibru-Saikhowa NP, Hollongapar Gibbob WLS, Kebul Lamjao NP, Nongkhyllem NP, Balphakram NP, Nokrek Ridge NP, Murlin NP, Ngengpui WLS, Phawngpui Blue Mountain NP, Intanki NP, Fakim WLS, Khangchendzonga NP, Barsey Rhododendron WLS, Pangolakha WLS, Fambong Lho WLS, Sipahijala WLS, Gumti WLS, Trishna WLS, Bison (Rajbari) and Clouded Leopard NP	Chairmans: Sh. H.K. Choudhury, Sh. M.C. Malakar, Members: Dr. P.C. Bhattacharya, Sh. S.B. Singh, Dr, Gautam Narayan, Dr. Niraj Kakati WII Faculty: Sh. Aseem Shrivastava
	Total States + UT=31		Total 125 PAs (78 WLS + 47 NP)	

ANNEXURE-II

Assessment Criteria for addressing issues relating to Climate Change & Carbon capture in the Protected Areas

1.

Additional Criteria on Climate Change: Is the protected area being consciously managed to adapt to climate change?

Condition	Category*	(Tick ✓)	Comment/ Explanation	Next Steps
There have been no efforts to consider adaptation to climate change in management	Poor			
Some initial thought has taken place about likely impacts of climate change, but this has yet to be translated into management plans	Fair			
Detailed plans have been drawn up about how to adapt management to predicted climate change, but these have yet to be translated into active management.	Good			
Detailed plans have been drawn up about how to adapt management to predicted climate change, and these are already being implemented	Very good			
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				

2.

Additional Criteria on Climate Change: Is the protected area being consciously managed to prevent carbon loss and to encourage further carbon capture?

Condition	Category*	(Tick ✓)	Comment/ Explanation	Next Steps
Carbon storage and carbon dioxide capture have not been considered in management of the protected area	Poor			
Carbon storage and carbon dioxide capture have been considered in general terms, but has not yet been significantly reflected in management	Fair			
There are active measures in place to reduce carbon loss from the protected area, but no conscious measures to increase carbon dioxide capture	Good			
There are active measures in place both to reduce carbon loss from the protected area and to increase carbon dioxide capture	Very good			
*Score: Poor: 2.5; Fair: 5; Good: 7.5; Very Good: 10				



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