



12th Conservation Workshop for the Biodiversity of Arabia

Protected Area
Management
Planning

7-9 February 2011



12th Annual Conservation Workshop for the Biodiversity of Arabia

Protected Area Management Planning

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Organised by

Environment and Protected Areas Authority (EPAA)
Government of Sharjah, United Arab Emirates

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Contents

Introduction	1
The importance of PA Management Plans	2
The structure of PA Management Plans	4
Workshop Procedure	7
Regional Review of PA Management Planning	9
Appendices: Case Study Attribute Evaluations and SWOT (Strength Weakness Opportunity Threat) Analysis results	15
Appendix 1. Azraq Wetland, Jordan	16
Appendix 2. Hawf, Yemen	18
Appendix 3. Jabal Aja, Saudi Arabia	20
Appendix 4. Dubai Desert Conservation Reserve	22
Appendix 5. Participants List	24

Introduction

Since 2007 the conservation workshops held annually in Sharjah, UAE, have considered aspects of protected area creation and management in the Arabian Peninsula. In 2008 and 2009 formal evaluations of protected area management effectiveness highlighted the importance of functional management plans for the protected areas of the region. It was evident that, while great progress had been made in many regions in terms of protected area systems planning and reserve creation, active current management plans were lacking for many sites. It was apparent that a workshop was required that specifically looked at the creation of protected area management plans.

Therefore the aim of the 2011 workshop was to:

- Highlight the importance of protected area management plans
- Review the current status of protected area management planning in the region
- Outline the planning process
- Describe the general structure of management plans
- Provide an opportunity for delegates to apply key aspects of management plan preparation to a series of selected case studies from the region

The importance of PA Management Plans

A protected area management plan is the central mechanism to apply legislation and policy. A Management Plan will:

- Identify key issues
- Define role & significance of an area within a system
- Set out policy and zoning for protection, development and management of resources and attributes
- Ensure that development and management are compatible with environmental protection
- Provide a basis for ongoing monitoring of PA development
- Facilitate communication & understanding within organization & outside
- Provide continuity

The creation, implementation and revision of protected area management plans both depends on and can facilitate meaningful stakeholder participation. It has been widely recognized that the parks and reserves that do not engage with local communities will become a focal point for conflict and discontent, and are at great risk of failing for this reason. Involving stakeholders in management planning acknowledges their desire and right to participate in decisions that affect them; facilitates understanding, enriches protected area management, improves and smooths decision making, promotes partnerships, stewardship and cooperation, and removes potential conflict (Figure 1).

The formulation of a protected area management plan does not end with the creation of the document itself – creating of a plan must be followed by plan implementation, but also by a circular process of monitoring and evaluation that will assess whether objectives remain appropriate and are being met by their associated action plans (Figure 2).

The history of effective formal management plans for protected areas is relatively recent. For example, even though Yellowstone National Park, USA, the first National Park in the world, was established in 1872, it was only in 1916 that the US Department of Interior created the National Park Service to *“promote and regulate areas such as reserves and National Parks”*. It took another 70 years before the US National Park Service in 1988 set out instructions for the preparation of general Management Plans for all National Parks in the USA. Their policy can stand as a general guideline for any protected area in the world:

“No new development to be undertaken without an approved Management Plan”

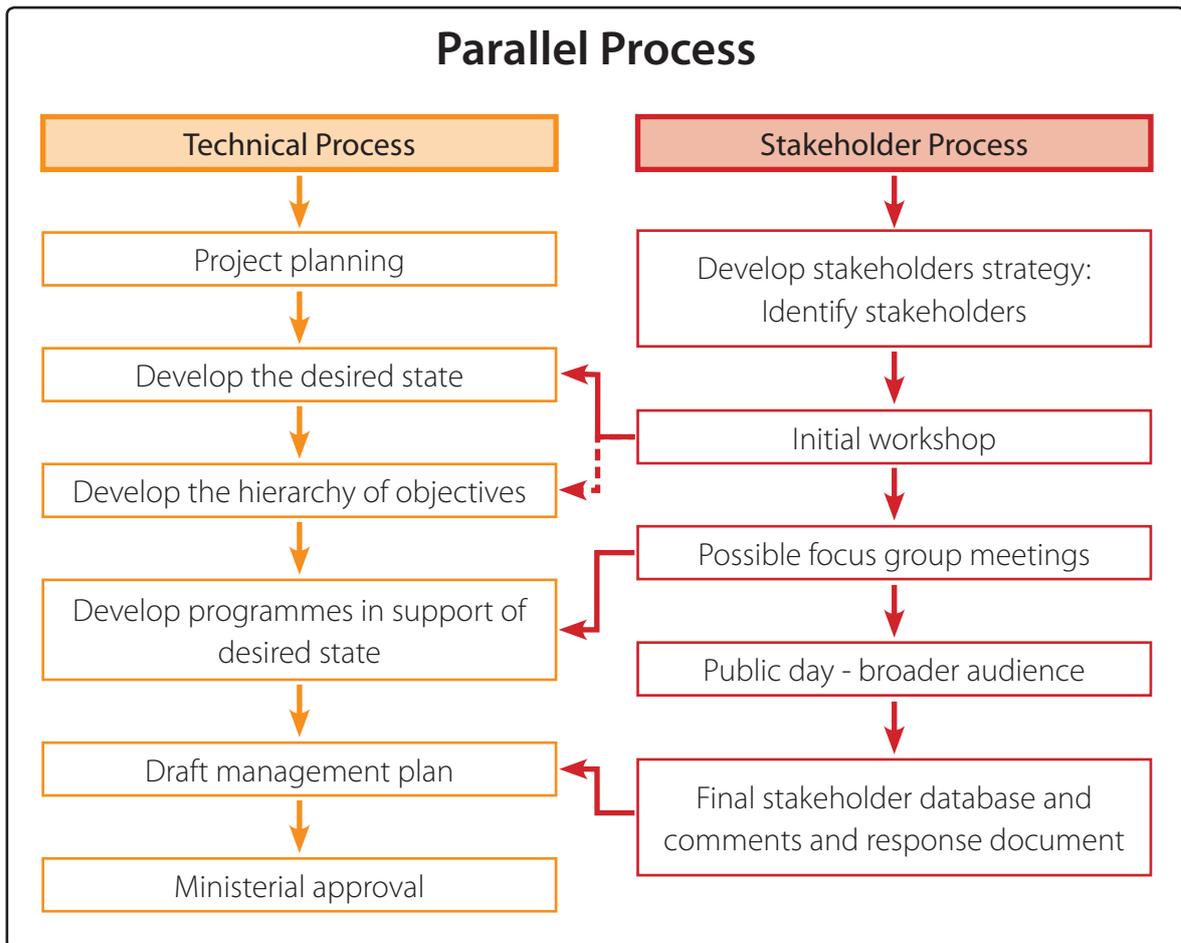


Figure 1. The parallel technical and stakeholder processes of protected area management planning

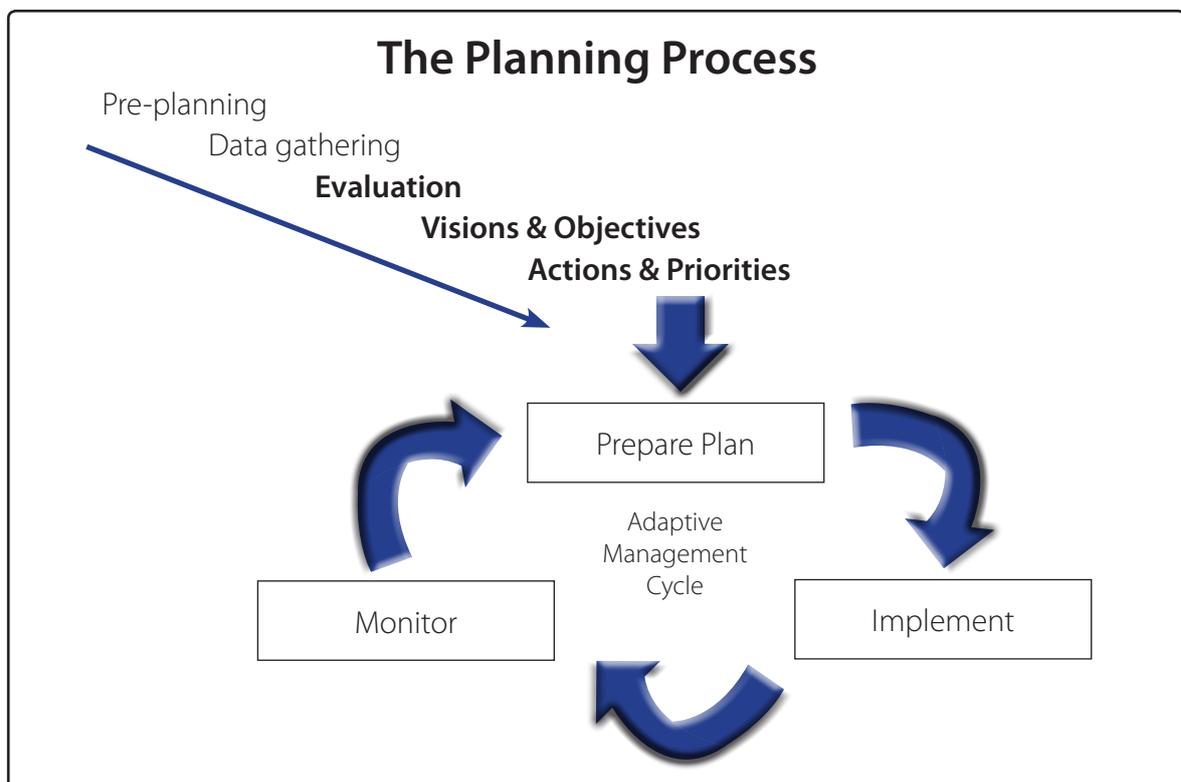


Figure 2. Flowchart of the Protected Area Management Planning process. Items in bold are those specifically dealt with in workshop sessions

The structure of PA Management Plans

A protected area management plan is forward looking, with a 20-25 year time horizon, but sets objectives with a 5-year horizon and is thus subject to review every ~5 years.

A good management plan will be: clear – easy to read and written in the language of its primary target audience; concise; accurate; logical; motivating; precise and practical; focused and effective. It will be seated in practicality and must be a living document. There is no set structure for a protected area management plan, each agency or organisation will formulate plans to suit their own needs, but there are some common elements: Context, Vision, Objectives, and Actions.

Context

The Vision provides a long-term perspective that is unlikely to change over the short to medium term. It will identify the main purposes of the protected area for the next 25 years and describes the ideal condition, state or appearance of the protected area that management is intended to achieve. A Vision needs to consider the Social, Technical, Environmental, Economic, and Political values of the protected area (ie V-STEPP). A Vision Statement should not be too long, and it should inspire.

Vision statements address the question: “What should our natural area be like?”

They may include components such as:

- An area that is rich in biological diversity and natural character
- A protected and appropriately managed area for the flora and fauna it supports
- A protected and appropriately managed area for future generations to enjoy
- A healthy wetland/ dune/ farm/ creek/ bushland area which sustains a diversity of indigenous flora and fauna
- A community that is aware and actively participating to restore and protect natural areas and habitats

Examples:

Palau Island (Philippines) management plan

“We envision Palau Island as a protected and preserved destination managed by equally committed & empowered stakeholders progressively working towards a prosperous future.”

Tavolo Wildlife Management Area (Papua New Guinea) management plan:

“To conserve and protect our natural resources and to promote a sustainable way of life that is culturally appropriate, environmentally friendly, just, encourages equal participation, self reliance and total respect of human rights in Lote Society.”

Edézhíe (eh-day-shae) (North-west Territory, Canada)

"Edézhíe is a spiritual place that is ecologically and physically unique. It is where the ancestors of the Dehcho went to sustain themselves when food was scarce. The waters are pure and the animals abundant. The Edézhíe National Wildlife Area will be managed using the best available knowledge to protect the watersheds, vegetation and wildlife that are necessary for sustaining the culture of present and future generations of Dehcho, as well as for the enrichment of all Canadians."

Objectives

Objectives follow on from Vision and are set in terms of the target future. They are specific statements of intentions that set out measurable outcomes, but not how to achieve these. Objectives should be SMART, i.e. Specific, Measurable, Achievable, Realistic, and Time-related, e.g. 5-10 years. The wording of an objective may not include specific targets, but it should be able to be translated into measurable outcomes. There may be specific objectives relating to different issues or functions within the protected area, including such topic headings as: Biodiversity and Heritage; Sustainable Tourism; Building Co-operation; Effective Park Management; Corporate Support and others or similar.

Zoning

Zonation within a protected area is both a mechanism for delimiting appropriate activities, and a means of defining and focussing the objectives guiding various management actions. There is a wide variety of zonation schemes possible and no simple all-purpose model. Each protected area will have different values to be protected and different activities or degrees of public access to be regulated.

One example of zonation categories is provided by the Planning & Management Policy, Ontario Provincial Parks, Canada:

- Natural Environmental Zone
Natural, cultural & aesthetic landscapes; low-intensity recreation
- Development Zone
Main access & facilities & services for a wide range of day use/camping
- Wilderness Zone
Protection of significant natural & cultural features; minimum development
- Natural Reserve Zone
Significant Earth & Life Science features; minimum development
- Historical Zone
Significant historical features; minimum development for research & visitors
- Access Zone
Staging area where facilities support the use of NR & WI zones; less development than NE & HI zones

Actions

Actions are the activities by which a given objective will be achieved. There can be several actions for each objective. Actions tell a manager what must be done and how, so they must be measurable, clearly defined and achievable

From the Actions it becomes possible to:

- Prioritise
- Identify indicators to measure action
- Set targets
- Define responsibilities
- Set the time frame
- Determine the required budget

Necessarily Actions are:

- Activity based
- Linked to salary & wages = performance
- And may relate to a number of sub-components:
 - Conservation development
 - Equipment
 - Staff
 - Biodiversity & heritage
 - Sustainable tourism
 - Building cooperation & constituency building
 - Effective park management
 - HR
 - Park Planning & development
 - Overheads

Workshop Procedure

The workshop sessions proceeded in seven parts that took place over three days:

1. Regional review of protected area management planning

Country representatives reviewed the status of management plans within the protected areas of their region, summarising the numbers of protected areas with plans and the current status of those plans.

The other five parts of the workshop focussed on four case study areas selected by delegates to represent a range of landforms, management structures, and key issues. The areas chosen were: Azraq Wetland in Jordan, Jabal Aja in Saudi Arabia, Hawf in Yemen, and Dubai Desert Conservation Reserve in the United Arab Emirates. Each case study had a leader who was familiar with the protected area, and between 5 and 7 group members from across the Arabian Peninsula.

2. Evaluation of protected area attributes

In order to enable all group members to better understand the selected case study area a formal summary of attributes was undertaken, including evaluation of legal status, land tenure, organisation structure, and biological, historical, cultural and socio-economic factors of importance to the area (Appendices).

3. SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis

Building on an improved understanding of the attributes of the area, group members undertook a SWOT analysis to identify critical features on which to formulate management planning components (Appendices).

4. Framing of Vision Statements

With an understanding of the attributes and key features and issues of each case study area, group members drafted some Vision Statement components. Rather than attempt to write an actual Vision Statement, delegates proposed a number of bullet points under each of the V-STEOP components (see above). Such bullet points could be used to craft a formal statement. (Appendices).

5. Formulation of Objectives

Again following the V-STEOP formulation, group members drafted one or more bullet point Objectives. This proved to be the most challenging component, but also arguably the most critical to the creation of a functional protected area management plan. Key was the framing of objectives in terms of what was wanted to be achieved, not how it was to be achieved. There is a tendency to be implementation oriented and to frame objectives in terms of actions. It is necessary to refer back to both the Vision Statement and the results of the SWOT analysis to keep the long-term perspective in mind and to ensure that key issues are addressed.

6. Derivation of selected Actions

Taking one or two selected Objectives, group members derived a series of required Actions to achieve those objectives, identifying associated Responsibilities, Indicators and Time frames for each.

7. Introduction to Budgets

A spreadsheet tool used by South African National Parks was introduced to the delegates to illustrate the process of costing the different elements of each identified action. The use of formal budgeting tools provides full transparency and enables medium term financial planning as the costs and resource needs of each action are projected out over 5-10 years.

Regional Review of PA Management Planning

Delegates from seven regions reviewed the status of management plans in their protected area networks. The results of this review (Table 1) reinforce the findings of the formal protected area management effectiveness evaluations conducted during previous workshops. Management Planning is well advanced in some parts of the region, with active, current plans for most protected areas. But for many countries of the region such plans are largely absent. The lack of functional plans may be due to a number of factors, including the relative newness of protected area networks, and institutional and capacity challenges. In some cases draft management plans have been drawn up by consultants but have never been implemented because of a number of weaknesses, including use of the wrong language, or type of language, for the target audience, and a lack of participation by the wider stakeholder group.

Nevertheless, it was apparent that the need for a current management plan for every protected was realised and that virtually all the countries in the region are actively working on getting such plans in place.

Table 1. Regional review of the status of protected area management planning

Country / Emirate	Total number of protected areas	Number of plans being developed	Total number of areas with plans	Plans current and active	Plans in review	Plans overdue for review or inactive
Jordan	9	2	7	3	1	3
Saudi Arabia	?	?	?	?	?	?
Bahrain	6	0	1	0	0	1
Yemen	7	1	5	2	1	2
Oman	14	0	14	1	2	11
Dubai, UAE	6	0	0	0	0	0
Sharjah, UAE	8	0	0	0	0	0

Vision Statements, Objectives and Actions

The following tables summarise for each case study area the Vision Statement components, derived Objectives, and selected Actions formulated by the working groups. In some cases an Objective may have several sub-Objectives. The groups were directed to focus on deriving Objectives in relation to issues specific to their case study site, and to develop Actions from one or more selected Objectives.

Table 2. Azraq Wetland case study: components of a Vision Statement, Objectives with associated selected actions.

<p style="text-align: center;">VISION</p>	<ul style="list-style-type: none"> ● Cultural heritage is conserved and well maintained ● The protected area is a regional research centre ● Restored habitats are healthy, viable and sustainable ● The eco-tourism program and facilities are sustainable, active, and with no impact on the ecosystem ● The Government is committed to the “safe pumping yield” 	
<p>Objectives</p>		<p style="text-align: center;">Actions</p>
<p>To restore a total of 10% of the original wetland habitat</p>		<ul style="list-style-type: none"> ● Collect and analyse the available data ● Identify the restoration priorities for key species and habitat ● Derive restoration maps according to priorities ● Estimate the water budget for restored habitats and create a water distribution plan ● Complete land levelling survey to ensure drainage from the water source ● Establish a contingency plan for water management ● Prepare the restoration site to receive water ● Commence staged water pumping ● Establish a monitoring program for water quality ● Undertake a trial introduction of endemic killifish ● Survey the status of introduced killifish ● Undertake a full introduction of killifish ● Implement a full killifish monitoring program
<p>To develop a management oriented research and monitoring program</p>		<p>Not defined</p>
<p>To establish a Regional Research Centre to facilitate a management research program</p>		<p>Not defined</p>
<p>To develop an effective Patrolling Plan</p>		<p>Not defined</p>
<p>To continue with the Habitat Restoration Plan</p>		<p>Not defined</p>
<p>To continue with the Monitoring Program</p>		<p>Not defined</p>
<p>To control invasive species in terms of distribution and population size</p>		<p>Not defined</p>
<p>To reactivate the “Safe Pumping Yield” agreement</p>		<p>Not defined</p>
<p>To re-establish the importance of Azraq as a Ramsar site</p>		<p>Not defined</p>
<p>To identify the cultural values of the site</p>		<p>Not defined</p>

Table 3. Dubai Desert Conservation Reserve case study: components of a Vision Statement, Objectives with associated sub-Objectives where appropriate, and selected actions.

VISION		<ul style="list-style-type: none"> ● A natural environment to be conserved and enjoyed by present and future generations, both visitors & local residents ● Scientifically driven management processes underpin research and monitoring ● The natural fauna and flora of the Dubai inland desert habitat is enhanced and conserved ● The area supports economically beneficial and sustainable eco-tourism ● The protected area is legally protected and internationally recognised
Objectives	Sub-Objectives	Actions
To implement economically and environmentally sustainable tourism		
	Minimise the environmental impacts of tourism	<ul style="list-style-type: none"> ● Monitor the environmental impacts of tourism activities ● Re-assess operator access routes and utilization areas with the aim of reducing these by 10% ● Implement impact, energy, and waste reduction training for operators
	Maintain tourism revenue for use in conservation programs	<ul style="list-style-type: none"> ● Involve successful tour operators to meet a minimum target visitor number set for each operator ● Diversity tourism to include nature-based activities ● Design and implement a guide training program
To conserve a representation of the Dubai Inland Desert Ecosystem		
	Restore predator-prey dynamics	Not defined
	Restore and maintain diverse and abundant plant communities	Not defined
To involve and engage the Dubai community in the protection of their natural heritage		
To have the Reserve declared as an official Protected Area		
To develop and implement a land-use plan within the Reserve		
		Not defined
		Not defined

Table 4. Hawf case study: components of a Vision Statement, Objectives with associated sub-Objectives where appropriate, and selected actions.

VISION		<p><i>"A socially & politically accepted Hawf PA, conserving the unique cloud forests & associated biodiversity, as well as the unique cultural & social heritage of the local communities, for the benefit of locals & visitors, into the future."</i></p> <ul style="list-style-type: none"> ● To preserve & protect the unique deciduous cloud forest and associated biodiversity ● To encourage a traditional handicraft production as a sustainable industry associated with the preservation of the forests. ● Provide visitors with a quality experience ● Preserve the local communities distinctive cultural heritage ● Scientifically driven management processes underpin research and monitoring ● Seek sustainable government support (political & financial) to protect Hawf.
Objectives	Sub-Objectives	Actions (& responsibility, indicators, time frame, & cost)
To preserve local traditions of communities associated with the PA	To improve the practice of traditional bee-keeping	<ul style="list-style-type: none"> ● Assess the scope, scale & opportunities of the importance of beekeeping by communities within the PA. ● Provide local inhabitants identified in the assessment with beehives. ● Train the locals in bee-hive collection.
	To preserve the pre-Islamic 'spoken' Mahri language	<ul style="list-style-type: none"> ● Develop an appropriate alphabet for the Mahri language. ● Use the Mahri language in PA related signage & products
To establish a supportive legal & regulatory environment for the PA.		Not defined
	To enforce environmental regulations	Not defined
	To ensure sustainable government support	Not defined
To preserve the unique biodiversity associated with the Hawf cloud forests.		Not defined
To generate sufficient revenue from eco-tourism to improve the economic circumstances of local residents.		Not defined

Table 5. Jibal Aja' case study: components of a Vision Statement, Objectives with associated sub-Objectives where appropriate, and selected actions.

<p>VISION</p>	<ul style="list-style-type: none"> ● A mountain massif of outstanding biological diversity ● An embodiment of the traditional hima concept conserving a heritage of abandoned traditional agricultural terraces as wildlife enhancement areas ● A state-of-the-art Environmental Education Centre, partnered with the Arizona-Sonora Desert Museum ● Minimal impact nature-based tourism and recreation ● Sustainable grazing management ● Area managed collaboratively by the conservation authorities and the local communities of the Hail region
<p>Objectives</p>	
<p>To engage the local decision makers and other stakeholders in the establishment and management of the Jibal Aja' Biosphere Reserve</p>	<p>Actions</p> <ul style="list-style-type: none"> ● Conduct a stakeholders analysis ● Set the terms of reference for a Protected Area Management Board ● Constitute a Protected Areas Management Board and associated decision-making process ● Conduct capacity building activities through the Saudi Wildlife Commission Training Centre ● Conduct a workshop to review Governance structures and processes
<p>To maintain the Jibal Aja' ecosystem without degradation of its biological diversity and productivity</p>	<p>Not defined</p>

Summary

Six key points emerged from the case study exercises and associated discussions:

- 1) Every protected area in the region requires an active, current, functional management plan in order to guide site-appropriate development that ensures that the key values of the protected areas are sustained.
- 2) Active current management plans are lacking for a significant number of protected areas in the region, but there is growing capacity and resources to enable appropriate plans to be put in place.
- 3) The management planning process must be participatory, engaging stakeholders to actively participate in all appropriate aspects of protected area management.
- 4) The framing of Objectives is one of the most critical, but also one of the hardest elements to put in place for an effective management plan.
- 5) Objectives and associated actions must consider social, technical, environmental, economic and political aspects.
- 6) Key issues and challenges across the region include:
 - Mechanisms for effective stakeholder participation
 - Governance of protected areas and cross-institutional arrangements
 - Balancing resource generating development and activities against conservation requirements
 - Implementing environmental conservation within an area in the face of threats of incompatible development.

Related Reference

Thomas L. and Middleton, J. (2003) Guidelines for Management Planning of Protected Areas. Best Practice Protected Area Guidelines, Series No. 10
<http://data.iucn.org/dbtw-wpd/edocs/PAG-010>

Appendices

Case Study Attribute Evaluations and SWOT (Strength Weakness Opportunity Threat) Analysis results.

Appendix 1: Azraq Wetland, Jordan

Appendix 2: Hawf Protected Area

Appendix 3: Jabal Aja, Saudi Arabia

Appendix 4: Dubai Desert Conservation Reserve

Appendix 5: Participant List

APPENDIX 1. Azraq Wetland, Jordan**Protected Area Evaluation Sheet**

Area Name: Azraq Wetland

Attributes

Location (country/region/province): Al Azraq, Jordan

Area (ha or km²): 12.5 km²

Category (IUCN or equivalent): IUCN Category IV

Legal status: Established in 1987

Ownership & Tenure: State land

Access: Completely fenced with two entry/exit points, one for visitors and one for staff

Surrounding land use: Agriculture and salt extraction; tourism hub adjacent to major traffic routes for the region

Communities: Significant resident population (Badu and Shushan)

Organisational structure: Managed by the RSCN (Royal Society for the Conservation of Nature in Jordan) and the Ministry of the Environment. There is a resident site manager supported by three rangers and public relations staff.

Historical features: Roman wall and Umayyad antiquities.

Biological features: The area marks the conjunction between the limestone desert and the basalt desert ecosystems. It is a significant site for migratory birds and contains a population of endemic killifish.

Physical features: The area is the lowest point of the Azraq Valley depression.

Cultural / aesthetic features: As a desert oasis the site is of great cultural significance to local communities.

Socio-economic features: Salt extraction, farming, and tourism take place in the surrounding areas

Other: Potential for eco-tourism

<p>V-STEEP</p> <p>Values -</p> <ul style="list-style-type: none"> Social Technical Environmental Economic Political

Protected Area SWOT Analysis

(Strengths, Weaknesses, Opportunities, Threats)

Area Name : Azraq Wetland, Jordan

Strengths

- (1) Representative wetland system
- (2) The only Ramsar site in Jordan
- (3) Important Bird Area
- (4) High native biodiversity

Weaknesses

- (1) Lack of water available to the system
- (2) High running costs and low income
- (3) Disturbance in surrounding areas
- (4) Low level of Government support for water issue and for conservation

Opportunities

- (1) Scope for increased wetland-related research development
- (2) Tangible benefits possible for local communities
- (3) Eco-tourism could generate revenue
- (4) High level of general awareness of the site

Threats

- (1) Increasing farming regionally means increased water demand
- (2) Urban development in adjacent areas
- (3) Conflict over water access
- (4) Invasive species

APPENDIX 2. Hawf, Yemen**Protected Area Evaluation Sheet**

Area Name : Hawf Protected Area

Attributes

Location (country/region/province) : Al Marah-Hawf, Yemen.

Area (ha or km²) : 300 km²

Category (IUCN or equivalent) : Category VI – Sustainable use of ecosystems

Legal status : Gazetted (Decree 260, August 2005)

Ownership & Tenure: ~4000 inhabitants, 1-2% of land privately owned & remaining land 98-99% state land.

Access : Open

Surrounding land use : Fishing on coast, farming (small stock), harvesting of water, fuel wood, Timber for construction.

Communities : Three main villages, with small seasonal nomadic settlements – Dagut, Jadeb & Hawf.

Organisational structure : Director appointed, but not active nor on site.

Historical features : Old military trenches & camps from border dispute with Oman. No evidence of ancient cultural sites, villages etc.

Biological features : Deciduous cloud forest, 20 mammalian species recorded (15 in last 3 months from camera trapping, including 9 carnivores – notably the Arabian leopard). Beaches noted for their turtle breeding sites.

Physical features : Seasonal mist & precipitation on an attitudinally varied landscape (cost, escarpment & plateau), Karst topography with numerous caves.

Cultural / aesthetic features : The pre- Islamic Al Mahrin language – spoken only. Diverse ethnic groups

Socio-economic features : 80% of families are very poor, relying upon fishing, farming & grazing.

Other :

<p>V-STEEP</p> <p>Values -</p> <ul style="list-style-type: none"> Social Technical Environmental Economic Political

Protected Area SWOT Analysis

(Strengths, Weaknesses, Opportunities, Threats)

Area Name : Hawf Protected Area, Yemen

Strengths

- (1) Habitat relatively undisturbed – ‘Makjune’
- (2) 98% of land government owned
- (3) Information on biodiversity & socio-economics exist for the area
- (4) Location provides the potential for TBCA initiatives
- (5) Arabian leopard confirmed to exist in the area, thus substantiating the existence of this charismatic species

Weaknesses

- (1) Lack of political will
- (2) No established National Parks System in the country
- (3) Lack of funds
- (4) Lack of conservation capacity
- (5) Limited awareness of the PA & its potential

Opportunities

- (1) Potential eco-tourism opportunities
- (2) Project applications to GEF & GIZ in the pipeline
- (3) TBCA initiatives

Threats

- (1) Increasing poverty in the area
- (2) Increasing reliance on natural resources for goods & services
 - (a) Illegal exploitation of wildlife
 - (b) Specific over exploitation of the unique cloud forests

APPENDIX 3. Jabal Aja, Saudi Arabia**Protected Area Evaluation Sheet**

Area Name : Jabal Aja

Attributes

Location (country/region/province) : Hail Province, north-central Saudi Arabia.

Area (ha or km²) : 2200 km²

Category (IUCN or equivalent) : IUCN Categories II, V, VI, and a Biological Reserve exclusion zone

Legal status : Proposed but not yet declared

Ownership & Tenure : Federal Government ownership, with a proposed tribal ownership component

Access : Limited off-road/track vehicular access, but rugged terrain necessitates foot access to many areas

Surrounding land use : City of Hail urban area, with livestock grazing

Communities : 8 settlements of the Shamwa tribe; large residential urban population borders the reserve.

Organisational structure : Saudi Wildlife Commission (SWC) working with a board of stakeholder representatives.

Historical features : A castle and a number of wells

Biological features : High native biodiversity; Internationally Important Bird Area, Internationally Important Plant area.

Physical features : Rugged granite deposits.

Cultural / aesthetic features : Iconic landscape modified by a long history of traditionally important land uses

Socio-economic features : Potentially exploitable mineral deposits

Other : _____

<p>V-STEEP</p> <p>Values -</p> <ul style="list-style-type: none"> Social Technical Environmental Economic Political

Protected Area SWOT Analysis

(Strengths, Weaknesses, Opportunities, Threats)

Area Name : Jabal Aja, Saudi Arabia

Strengths

- (1) High biodiversity, spectacular geomorphology, bioclimatic refugia, with natural seed bank
- (2) Good environmental information
- (3) Relatively high level of environmental awareness & appreciation of the natural environment by local people
- (4) Political support for the Hail Emirate

Weaknesses

- (1) Poor SWC control over land-use in PAs with limited control of livestock grazing regime in PA
- (2) Gaps in socio-economic information
- (3) Lack of SWC (& KSA) expertise & experience in engaging local communities in PA management
- (4) Police mentality of ranger force

Opportunities

- (1) Nature based eco-tourism & recreation
- (2) Educational visitor centre, cooperation of Hail University, teachers colleges, school system & scouts
- (3) Co-management with local communities, partner agencies, IUCN CEESP
- (4) MAB programme, CBD, CMS, CCD, WWF Sacred Gift for a Living Planet

Threats

- (1) Urban & agricultural expansion
- (2) Human population growth
- (3) Uncontrolled recreation & tourism with its tree cutting, fires & pollution
- (4) Failure of co-management with communities & agreement agencies
- (5) Over grazing of less rugged areas
- (6) Feral dogs, cats, donkeys

APPENDIX 4. Dubai Desert Conservation Reserve**Protected Area Evaluation Sheet**

Area Name : Dubai Desert Conservation Reserve (DDCR)

Attributes

Location (country/region/province) : Dubai Emirate, United Arab Emirates.

Area (ha or km²) : 225 km²

Category (IUCN or equivalent) : IUCN Categories II, National Park

Legal status : Announced, but not officially declared; management structure law (11), 2003

Ownership & Tenure : Owned by Dubai Government; managed by Emirates Airline

Access : Entire area fenced; three manned access gates

Surrounding land use : Open desert used for livestock grazing and unregulated recreation; some agriculture (forage crops, vegetables, dates); urbanisation; close to Margham Gas field

Communities : Margham, Faqah, Murquab.

Organisational structure : Dubai Conservation Board (DTCM, tour operators, Dubai Municipality, Rescue Management); Conservation Manager; three Conservation Officers; nine Maintenance staff

Historical features : Wells from before Unification (~45 years); four date farms

Biological features : Dubai Inland Desert Sand Dune ecosystem, interspersed with gravel plains, with relatively good vegetation, three natural ghaf forests; 130 spp. of arthropods, 126 spp birds, 57 spp plants, 23 spp mammals, 20 spp reptiles

Physical features : Dune land and Quarn Narzwa (rocky outcrop).

Cultural / aesthetic features : Iconic dune landscape

Socio-economic features : 200,000 visitors p.a.; 4 authorised tour operators, 9 tour operator camps, entrance fees generating ~2 million AED p.a. Emirates Airline sponsorship of ~2 million AED; Al Maha luxury resort

Other : Two artificial lakes have been created; 6000 indigenous trees planted; reintroduction in 1999 of Arabian oryx (N = 420), and Arabian gazelle (N = 300), and Sand gazelle (N = 100), and in 2010 Houbara bustard (N = 200)

<p>V-STEEP</p> <p>Values -</p> <ul style="list-style-type: none"> Social Technical Environmental Economic Political

Protected Area SWOT Analysis

(Strengths, Weaknesses, Opportunities, Threats)

Area Name : Dubai Desert Conservation Reserve, UAE

Strengths

- (1) Good managerial structure in place allowing concentration on conservation work
- (2) Good economic stability through tourism revenue and sponsorship
- (3) Good existing environmental research and monitoring programs
- (4) Good populations of Arabian oryx and gazelle

Weaknesses

- (1) Lack of input from the board; no mechanisms for interaction between DDCR and the Dubai Municipality
- (2) No educational programs; no local population involvement
- (3) Low genetic diversity of ungulate populations
- (4) Reserve is relatively small and fully fenced; limited expansion opportunities

Opportunities

- (1) Scope to improve communication with stakeholders
- (2) Need for an Education / Visitor Centre
- (3) Exchange / translocation of oryx and gazelle to other collections is possible
- (4) Scope for reintroduction of other species, e.g. predators, ostrich

Threats

- (1) Gas industry
- (2) Development in adjacent zones
- (3) Over-exploitation of limited resources, such as water
- (4) Hybridisation of native wild cats with feral domestic cats

APPENDIX 5. Participants List**Bahrain**

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