

Supreme Council for Environment and Natural Reserves (SCENR)
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Protected Area Action Plan
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I. Protected Area Development: A Review of the Current Status

1. Introduction

Qatar launched its National Biodiversity Strategy and Action Plan (NBSAP) in 2004, in fulfilment of its commitment to implement the Convention on Biological Diversity (CBD). Protected area development has been a key element of the NBSAP and this has made considerable incremental progress in the past three years which calls for a revision of the protected area program so that a future course is set in view of the recent achievements as well as constraints faced in this respect, and hence this *Protected Area Action Plan*. This work, in addition, incorporates the principles contained in the relevant resolutions of the Durban World Parks Congress as well as the CBD Program of Work on Protected Areas. The first part of the document provides a review of the current status of protected area development in the country, the second part proposes a set of action plans to advance the protected area program in the half decade ahead while the third part provides a summary of the proposed actions with timeline and identifying the responsible entities for implementation.

2. Current Protected Areas

The goal and activities in protected area development proposed by the NBSAP is summarised in box 1. Since the launch of the NBSAP, the country has substantially expanded the coverage of protected areas in size, number and ecosystem diversity. A profile of the current protected areas, namely, Al Reem, Khor Al Odaid, Al Dakhira, Al Weseil, Al Oraiq, Al Mas'habiya and Shahania is given in table 1. The sites selection for protection have been done based on several field studies and largely follows the criteria of representative and critical habitats, coverage of habitats of rare and threatened species and prospects of stakeholders

Box.1 NBSAP (2004) on Protected Areas

Strategic goal: To expand the national system of terrestrial and marine protected areas to protect representative examples of all of the major ecosystems, key biological sites and species of special management concern in Qatar.

Short term activities:

- Identify viable populations of flora and fauna
- Develop a Protected Area System Plan
- Select new protected areas
- Prepare management plans
- Recruit staff to manage new protected areas
- Strengthen community participation
- Strengthen traditional / local conservation initiatives

Long term activities:

- Implement hunting ban in protected areas
- Continue protection and reintroduction of key terrestrial species
- Protection and reintroduction of key marine species
- Promote cooperation
- Public awareness programs

participation. Diverse habitats such as wadis, hamada, sabka, sand dunes, rawdahs, mangroves, coastal swamps, seagrass beds, etc as well as rare, endangered and otherwise critical species of fauna and flora are covered by the protected area system.

A location map of the protected areas of the country is given in figure 1. The PAs have a reasonably wide geographic spread across the country though the central stretch of the country is relatively less represented. The protected area network currently covers an area of 2517 sq kms, which is about 22 per cent of the terrestrial area of the country. Although this far exceeds the 10 per cent target set by the Bali World Parks Congress, it is fully justified in the country given the fragile nature of several of its ecosystems and rarity of species, and in fact the coverage of protected areas should be expanded further in a later phase by developing multiple use managed reserves.

3. Categories of Protected Areas

The protected area program in the country grew, incrementally, from the captive breeding centres where extant mega fauna of the country was bred. Shahania, Al Isheiriq and Al Mas'habiya were wildlife farms and were transformed into formal facilities for the captive breeding of endangered native wildlife species. These are 1 to 8 sq km size enclosed reserves with facilities for breeding and veterinary care. Some animals bred here were reintroduced into the wild. Arabian oryx, Sand gazelle and Ostrich are the focal species of breeding. These sites are strictly protected from human interventions except for educational purpose.

The fully *in situ* conservation areas are: Al Reem, Khor Al Odaid, Al Dakhira, Al Weseil and Al Oraiq. In terms of legal status and management system all the five are identical. Al Reem has been designated as a Biosphere Reserve under the Unesco Man and Biosphere Program which along with a site in UAE are among the first MAB sites in the region. Khor Al Odaid has been proposed as a World Heritage Site under the World Heritage Convention. Although conservation issues and management problems in the PAs have commonalities, they differ in specifics and hence the management system should have the flexibility to be responsive to the respective local context. The zonation and the control regimes in each protected area will be spelt out in the respective management plans. However, it is important to distinguish the captive breeding facilities from the *in situ* protected areas and this has to be done as a priority.

4. Institutional System

4.1. The Legal Regime

Qatar enacted the Law Concerning the Protection of Wildlife and Their Natural Habitats in 2004 which provides a sound legal basis for the rehabilitation and management of wildlife habitats (Article 2.1) and empowers the Wildlife Department of SCENR to *propose* suitable wildlife sites for designation as protected areas (Article 3.4). However, an explicit provision for the designation of protected areas needs to be introduced in the legal domain. The law empowers SCENR to prohibit or control activities in the natural habitats that can cause damage to the habitat or the biodiversity therein, and requires it to protect the endangered species. The legal mandate of the Wildlife Dept is listed in table 2.

In addition, the Law Regulating the Hunting of Animals, Birds and Reptiles (Law no 4 of 2002) provides the legal powers to SCENR to ban or control hunting in the protected areas. A draft law for regulating the taking of marine life and establishing a coordination mechanism among SCENR and other concerned agencies is being enacted. (text continued on page 7)

Table 1. Profile of Protected Areas (PAs) in Qatar

Sl No	Name of PA (and location)	Date of declaration	Area (Sq. km)	Habitat, fauna and flora	Remarks
1	Al.Reem (Northwestern region)	2005 (Decree no 7)	1189 (Core area: 605 Buffer:584)	Includes the adjoining marine area. Limestone cliffs, mesas, wadis, sabkhas and gravel plains constitute the terrestrial site. Coastal swampy mudflats, shallow sea waters rich in seagrass beds. Ostrich and Sand gazelle have been reintroduced. Fauna includes Hawksbill and Green turtles, Dugong, Spiny-tailed lizard, Ethiopian hedgehog, Red fox and a large number of birds. Vegetation includes <i>Acacia tortilis</i> , <i>A. ehrenbergiana</i> , <i>Lyceum shawii</i> , <i>Astragalus spinosus</i> , etc.	Designated as Biosphere Reserve by Unesco. Al Ishiriq wildlife breeding centre and Al Zubara archeological site located within the core area
2	Al Dakhera (Northeastern region)	2006 (Decree no 6)	100 Plus adjoining marine areas	Largest mangrove forests in the country. Coastal wetland system, khawrs (embayments), mudflats, saltmarsh, sabkha, coral reefs, seagrass beds, etc. The fauna includes over 130 species of birds, Hawksbill turtle, Hooded malpolon, Spiny tailed lizard and 44 species of terrestrial insects. <i>Avicennia marina</i> , <i>Anabis setifera</i> , <i>Salsola imbricate</i> , <i>Lycium shawii</i> , etc are the key plant species.	A preliminary management plan has been developed; its implementation is due.
3	Al Waseil (Eastern region)	2005 (Decree no 8)	36	Gravel plains, sabkhas and coastal system. The fauna includes Spiny-tailed lizard, Red fox, a large number of bird species including long-distance migrants. <i>Acacia tortilis</i> , <i>Zygophyllum qatarense</i> , <i>Lycium shawii</i> , etc are among the flora. Reintroduction of Arabian oryx and Sand gazelle proposed in the area.	Fenced reserve. Supplementary planting has been done.
4	Khor Al Odaid (Southeastern	2007 (Decree no	1129	A unique tidal lagoon inside an area of mobile sand dune. The landscape includes parabolic dunes, rowdats, wadis,	Being nominated as a Unesco World

	region)	1)		mesas and sabkhas and the seascape covers coral reefs, seagrass beds, algal mats, etc. Ethiopian hedgehog, Red fox, Sand gazelle (natural and reintroduced), Arabian hare, and 98 species of breeding and migrant birds are among the fauna. There are 41 perennial plants identified. <i>Zygophyllum qatarense</i> , <i>Acacia tortilis</i> , <i>A. ehrenbergiana</i> , <i>Ziziphus spinachristi</i> , <i>Cyperus conglomerates</i> , etc are the key species.	Heritage Site. Attracts a large number of visitors.
5	Al Oraiq (Southwestern corner)	2006 (Decree no 1)	54.76	Gravel plain, sand sheets, wadis, mesa, etc. Reintroduced Sand gazelle, Arabian hare, a large number of bird species, Spiny tailed lizard, etc include the fauna. The vegetation consists of <i>Acacia tortilis</i> , <i>A. ehrenbergiana</i> , <i>Lycium shawii</i> , <i>Ziziphus spinachristi</i> , etc.	More reintroductions of Sand gazelle are planned.
	Mas'habiya (Southwestern corner)	2006 (Decree no 1)	8	The reserve is a fenced breeding facility for the native ungulates ie. Sand gazelle and Arabian oryx, and Ostrich.	
6	Shahaniya (Central part)	1979	1	Fenced breeding facility for Arabian oryx and Sand gazelle	Visitor's centre is a public attraction.
Total area under the protected area system: 2517 sq km covering 22% of the country's land area					

4.2. Organisational Set Up

The current management of PAs involves the Wildlife, and Monitoring departments of SCENR and the responsibilities of each of these departments is listed in table 2.

Table 2. Responsibilities of Wildlife and Monitoring depts in PA management

Wildlife Department	Monitoring Department
According to Wildlife Protection Law 2004: -Propose new sites for PAs; -Conducting research in PAs; -Coordination with other agencies on grazing control including the notification of grazing areas and timings; -Proposing plans/programs for prevention of negative impacts of development project on natural habitats; -Enforce the hunting of key wildlife species; According to the mandate provided in the organisational structure of SCENR: -Develop and implement plans for the development of PAs.	Law enforcement in the PAs is done by this department. Guards are deployed for protection in ecologically important areas, especially in protected areas. However, the guards are not trained in protected area management issues.

Although the Wildlife Dept and Monitoring Dept are doing well their respective works, there are inherent constraints in effectively coordinating the multiple issues involved, from the planning of PA development to daily management of PAs. The Wildlife Dept has not been geared or adequately staffed to address the practical issues of PA management while the Monitoring Dept is not specifically oriented towards the wide range of issues related to the management of PAs. There could also arise confusion with regard to responsibilities on account of the apparent overlaps. The need to rely on ad hoc arrangements for the development of certain protected areas was also a result of this. An equally important issue is the need for acquiring protected area planning capacity as well as the ability and resources to address the many problems in management that arise from time to time. The PA program is a critical element of the country's conservation mission and it is therefore important to consider the formation of a dedicated Department of Protected Areas within SCENR, as described in section II.1.

4.3. PA Staff

Protected area development has been a key concern of SCENR over the past few years which has seen the expansion of the area under PA network. However, the training and deployment of protection staff remains to be substantially improved. The protection staff belongs to the Monitoring Dept while the captive breeding staff belongs to the Wildlife Dept. The three captive breeding centres have a total of 30 staff. The protection staff are not deployed on a PA-wise formation, but on a regional arrangement, and they also cover the PAs. At the Wildlife Dept, the director is assisted in PA issues by one coordinator whose focus is the captive breeding centres. There has not been adequate training opportunities for the staff in PA management issues in the recent years. There is an pressing need to create a trained cadre for PA protection/management, as addressed in section II.

5. Biodiversity Coverage in the PA Network

The current network of protected areas covers nearly all the key species of the country, as is evident from table 1. However, there is a lack of information on the exact population. Besides, the representation of some of the threatened species in the PA system is unclear. Examples in this respect within the avifauna include Greater spotted eagle (*Aquila clanga*), Corn crake (*Crex crex*) and Houbara bustard (*Chlamydotis undulata*). There is an obvious need to do a systematic analysis of the coverage of various species of significance in the protected area system, but this can be done only when biodiversity inventories and population surveys of all the PAs have been done.

6. Sustainable Use

The data available on the socio-economic conditions of the local communities in and around the protected areas is rather patchy. Information on the number of villages/settlements, households, occupations, income levels, livestock size, fodder cultivation, etc are not available. However, this data could be generated for each PA in cooperation with the regional municipalities. Information available for the population size in the Al Reem reserve puts it at 11,160 in the core area and buffer zone, while the transition zone (outside the legally protected area) has a population of 6875. Seventy five per cent of the population in the reserve is males, predominantly

expatriate workers. The notified area of Khor Al Odaid is reported to have no inhabitants though there are villages outside the western boundary of the reserve.

Except for the three fenced PAs engaged in captive breeding, the other PAs are subject to varying levels of resource use by the local people. These include farming, grazing by livestock, regulated hunting, etc in addition to camping. Such activities are being controlled by the protection staff though their reach needs to be expanded. However, there is a need to develop resource use plans for each reserve, in consultation with the local community, so that the resource use pattern remains sustainable.

7. Role of Local Communities

The NBSAP had laid emphasis on engaging the local communities in the management of protected areas. The CBD Program of Work on Protected Areas as well as the World Parks Congress 2003 has underlined the need for involving the local people in the planning and management of protected areas, as it has been realised from experience around the world that a participatory PA management system is more successful in the long run compared with the conventional approach and on the other hand such a management system can better reconcile the imperative of conservation with the social need for sustainable resource use.

Consultations with local communities have been held in the case of some protected areas. However, a formal mechanism for involving the local communities in the management of protected areas has yet to be developed. The historical experience of the Hima system that was in vogue in some parts of the country and widespread in the rest of the Arabian region would serve as a key stimulus for the meaningful participation of the local communities in the PA project.

8. Reintroductions

Reintroduction of captive bred animals to areas where the population of the species in question has markedly declined has been applied as a means for restocking the populations of native endangered species in the country. Sand gazelle, the wild-extinct Arabian oryx and Ostrich have been the main target species and the three captive breeding centres have streamlined the breeding of these species. The species and number of animals reintroduced in the country is given in table 3 and the number of animals currently held in the captive breeding centres is given in table 4.

Table 3: Details of animals released

	No. of animals released(Year)	Area of release
Sand gazelle	30 (Nov 2002)	Nasrania
	20 (Nov 2002)	Al Oraiq PA
	25 (Nov 2002)	Brooq (Al Reem PA)
	25 (Nov 2002)	Guwairia
	30 (Oct 2004)	Brooq (Al Reem PA)
Ostrich	35 (Oct 2004)	Brooq (Al Reem PA)

However, of the 130 Sand gazelles released, only Brooq has a herd now and these animals are being provided supplemental food. The released Ostrich is breeding successfully in Brooq.

Table 4: Current status of animals in the captive breeding centres

	Shahaniya	Mas'habia	Ishiriq	Totals
Arabian oryx	220	251	324	795
Sand gazelle	1000	500	0	1500
Ostrich	11	0	0	11

As SCENR is set to embark on further reintroductions, it is essential to formulate a policy on reintroductions taking into account the ecological history of the species in the area, current carrying capacity of potential reintroduction sites, the genotype of the captive bred animals, influence on the extant natural populations, etc. A projection of future reintroductions should be made and the captive breeding program has to be reoriented accordingly.

II. Protected Area Action Plan

This action plan is designed in the light of the foregoing review of the protected area development in the country, with a view to address the gaps and to strengthen the overall protected area program. The actions proposed are grouped under 11 program areas and are also summarized in part III with timeline covering the next five years and identifying the entities responsible implementation.

1. Institutional Reform for PA Management

The current institutional scenario with respect to PA management presented in section I clearly shows the need for a streamlining of the institutional system to significantly enhance the capacity of SCENR to manage the protected areas effectively and to brace for the future challenges.

It is proposed to establish a Protected Areas Department within SCENR for the effective management of protected areas. It shall function in close coordination with the Wildlife Department. The functions of the PA Department shall include:

- a) Developing and updating protected area policies on behalf of SCENR
- b) Proposing areas for the establishment of PAs
- c) Formulation and updating of management plans for each PA
- d) Management of protected areas
- e) Enforcement of protected area laws
- f) Regulating sustainable use and ecotourism in PAs
- g) Facilitating scientific studies in the PAs in coordination with the Wildlife Department
- h) Building cooperation with the local communities
- i) Man power training in cooperation with the HR Department

A detailed organisation structure of the Department will be formed in a consultative manner. The staff can be posted by re-deployment of some of the existing staff and by new recruitment. The man-power requirement needs to be assessed at the time of developing the organisational structure of the new Department. The legal implications of establishing the Department needs to be carefully examined and addressed. The planning process for the Department could be done over a six months period, and the same can be implemented after approval by the Governing Body, up to the field level, in a two year period.

2. Formation of National Advisory Committee on PAs

Multiple agencies have had traditional jurisdiction over the areas now designated as protected. A coordination mechanism with these agencies to facilitate conservation oriented PA management and to minimise/modify/terminate their activities in the PAs would significantly help ease the PA management. Hence it is proposed to establish a National Advisory Committee on PAs with the following composition:

Senior level representatives of:

Department of Agriculture

Department of Municipalities

Department of Fisheries

Ministry of Petroleum

Tourism Authority, and

Faculty of Life Sciences of Qatar University

Head of the proposed Protected Area Department shall chair the Committee, in the interim period the head of the Wildlife Department shall serve as the chair.

The Committee shall have the following terms of reference:

- a) Advise SCENR on PA policies and plans in general
- b) Periodically review the management of PAs and advise SCENR on addressing vexing management issues
- c) Advise SCENR on overgrazing in PAs and to enhance coordination with the Department of Agriculture on addressing this problem
- d) Advise on enhancing cooperation with the local people and to improve the performance of Local Consultative Committees for PAs

The Committee shall meet at least twice a year.

3. Local Consultative Committees for PAs

Local committees shall be formed in each PA with the objective of involving the local people in the management of the protected area and to address the concerns of the people. This is expected to ensure their support for the conservation work and participation in the PA management process as local stakeholders. The committee could help resolve issues of local conflict through sustained efforts.

The process of formation of the committees, their numbers, structure and mandate can vary from PA to PA. However generalities are mentioned below:

- a) Each PA can have one or more committees depending on the number of villages and settlements in and on the peripheries of the PA concerned

- b) Consultation meetings shall be held in each potential site before the formation of the Committee. The input of these consultations can help to decide the structure and detailed functions of the Committee
- c) Representatives of the local municipality and the local section of the Dept of Agriculture/Fisheries, and a representative of the business sector shall be included in the committee.
- d) SCENR shall formally recognise these committees.

As mentioned above, the functions of the committee shall vary according the local context. However, the broad functions that the Committees can undertake include the following:

- Assist in the preparation of the management plan for the PA
- Participate in the preparation of a sustainable resource use plan for the PA
- Seek measures to reduce the overgrazing pressure in the PA, and help implementing the agreed measures
- Help SCENR in enforcing the protected area law and hunting law
- Serve as a forum to promote ecotourism in the area in a way that benefits the local economy

Training workshops shall be conducted for the members of these committees so as to enable them to participate in the protected area management process in an effective and informed manner.

4. Rationalising the Categorisation of PAs

It is necessary to distinguish *in situ* protected areas from the *ex situ* conservation breeding centres. The objective of *in situ* PAs is to protect representative natural habitats along with the entire biodiversity while the *ex situ* centres serve as breeding centres to propagate critical species and for their restocking in the wild through re-introductions. An in-house consultation meeting could be held to discuss and clarify the issues related to this separation of the two categories of conservation programs, and its management implications. The breeding centres shall remain with the Wildlife Department while the future Protected Area Department will take over the management of *in situ* protected areas.

Once the management plans for the protected areas have been developed (see 5

below), a categorisation of *in situ* PAs shall be made based on the zonations and management interventions formulated for the PAs.

5. Preparation of Management Plans for PAs

Management plans for each PA should be developed and implemented. These plans shall identify and describe all the interventions in the PA for the next 5 years and the means for implementing the same. A sustainable resource use plan should be made subsequently as a supplement to the management plan, as mentioned in section 5 below.

Preparation of the management plan shall be led by the Protected Area Department when that is established. In the meantime this exercise shall be led by the Wildlife Department. A technical committee may be designated for each PA for developing management plan. The service of an individual consultant may be required for assistance. Further technical assistance, if required, could be sourced from outside SCENR.

Available ecological and socio-economic information about each site needs to be compiled and a format for the management plan for each site should be developed. Substantial field studies for generating additional ecological and socio-economic information for the planning would be required. The prospects of constructing water conservation structures may also be investigated. Structured consultations with the local people on the management interventions, controls, sustainable resource use, etc would be an important part of this process. The final plan, as approved by the Governing Body of SCENR, shall be implemented by the Protected Area Department in coordination with other departments.

6. Capacity Building

Capacity building in protected area management would be critical to the success of the protected area program. Formation of a protected area cadre would be necessary for the effective management of the PAs. This cadre is not to be shaped as a policing-only force but more as a group of extension workers who can both enforce the law and at the same time work with the local communities to gain their support for conservation. The actual size of the cadre and its structure need to be assessed. The cadre is to be formed through new recruitment as the present guards of the Monitoring Department face work pressure in areas outside PAs.

Adequate training for the cadre would be important for their effective performance. An assessment of the training needs has to be undertaken and thereafter the curriculum should be developed. The training program can be conducted by SCENR, with the support of two external individual consultants.

A separate set of training workshops needs to be conducted for the local people so that they become capable of participating in the management of protected areas. In the absence of such a training program for the local people, the participatory objective may not succeed which might lead to the wrong conclusion that community participation in PA management is a failure. The PA Dept shall be responsible for planning and conducting these training programs.

7. Infrastructure Development

The infrastructure requirements in each protected area need to be assessed. The infrastructure development, however, should be limited to the minimum; office space, quarters, watch towers, communication networks, computers, vehicles, signage, etc would be needed depending on the site. Where structures are constructed these should be modelled on the local architecture and, where possible, using locally available building material. The proposed PA Dept should take the lead in making the infrastructure needs assessment, followed by the development of designs, and execution after the approval by the Secretary General.

8. Research

Management oriented research needs to be strengthened in the PAs. While studies on wildlife assume importance, socio-economic studies also are to be carried out. The Wildlife Dept shall lead the research, in coordination with the PA Dept when that is established. While other research organisations (eg universities) should be encouraged to conduct research, they may be advised to be informed by the priorities of SCENR in choosing their research topics. Research by foreign agencies should be subject to prior permission from SCENR and based on the conditions set by it. Training of SCENR researchers should be given adequate attention, and publication of reports in various forms should be encouraged. The researchers should also be encouraged to be associated with international and regional professional networks. Priority areas for wildlife research would be:

- Preparation of species inventory

- Population count of key species
- Periodic monitoring of indicator species
- Population dynamics of endangered species/ game species
- Comparative studies on the impact of protection on vegetation
- Migration studies of birds and turtles

The focus of socio-economic studies will be on

- Documenting the socio-economic profile of the communities in and around protected areas. Traditional patterns of resource use will also be documented.
- Livestock populations and livestock economy
- Alternative income generating opportunities for the local communities.

Imparting training to SCENR researchers for enhancing their technical capacity in research is important and in respect SCENR should hold at least two training workshops a year. In the first year the focus of the training shall be on the following themes, while the themes for future training shall be determined in the respective year of training:

- Wildlife research methodologies
- Documenting socio-economic issues in PAs

9. Sustainable Resource Use Plan

Sustainable resource use is the paradigm to reconcile the imperative of conservation with the resource use needs of the local people. Subject to regulation, limited resource use can be permitted in PAs in a manner that can turn the local stakeholders into partners in conservation rather than alienating them. In order to practice this, a well formulated sustainable use plan for each PA, as a supplement to the management plan (5 above), would be necessary. The process and output of preparing the management plan and the research works as envisaged in section 8 would provide input to the preparation of sustainable use plan. Extensive structured consultations with the local stakeholders would be important in the preparation of the plan, the Local Consultative Committees will play an important role in facilitating these consultations and in providing the local input to the plan.

The plan shall identify areas, periods, quantities and methods for resource use such as grazing, hunting, herbal collection, etc and provide mechanism for social control over resource users (in addition to the legal monitoring). Where appropriate, the delivery of

some welfare measure of agriculture/rural development agencies could also be directed through this process.

10. Ecotourism Development Plan

The development of ecotourism in PAs shall have the twin objectives of providing an opportunity for tangible economic benefit to the local people so that they have a self interest in the protection of the PA, and to promote greater public awareness about the environmental features of the country. When adequate opportunities and facilities for tourism to PAs in the country are provided, there will be a growing number of nationals and expatriates wanting to visit these sites. The development of ecotourism shall be done fully in cooperation with the Qatar Tourism Authority. The development of ecotourism has the following three basic elements:

- Destination development
- Capacity building of local stakeholders
- Building marketing linkages

Destination development includes the creation of basic facilities like ecolodges/cottages which shall be modelled on local architecture and using local materials to the extent possible. Camp sites may also be developed. Products like guided bird tours, camel/horse rides, trekking, local cultural items, etc may also be designed. Visitors' centres and souvenir shops may also be added. Wherever possible the income generating activities in the destinations shall be owned and operated by local stakeholders, individually or in collective forms. In order for them to be able to do so specialised training for interested local persons may be provided in the different aspects related to the establishment and operation of ecotourism facilities. Such trainings shall be conducted jointly by SCENR and Qatar Tourism Authority, with the aid of one or two external consultants. When corporate firms establish ecotourism facilities, the maximum number of recruitments shall be made from the locality, and provision for adequate training should be part of the development plan. The marketing of the ecotourism facilities shall be done in cooperation with the tour operators and hotel industry within the country and outside.

In cooperation with Qatar Tourism Authority a set of guidelines for ecotourism operation in the country shall be developed. This will provide the basis for promoting ecotourism in a way that benefits conservation and the local economy. Two sets of

workshops shall be held with the participation of tour operators and local stakeholders. An ecotourism plan for each PA shall be developed by SCENR, through a widely consultative process, which shall serve as the basis for ecotourism development in the respective reserves.

11. Reintroductions

Reintroduction of wildlife species is used as a tool to restore populations of critically endangered or locally extinct species. As reviewed earlier, the reintroductions of Reem gazelle and Ostrich had varying degrees of success. Qatar has created captive populations of some of the endangered species, and has made advances in the techniques of captive breeding.

Reintroductions become ecologically effective only when the subject is a native species, although the species found in the ecologically contiguous central eastern part of the Arabian peninsula could be considered as Qatari in ecological terms. Extreme care has to be applied when a non-native species is considered for reintroduction. Due to the multiple issues involved in this potentially useful conservation method, it would be important for SCENR to develop a policy statement to guide future reintroductions, drawing on the scientific consensus on the subject. This shall set out the objective of future reintroductions, target species and the protocols to be used. Building on this, a reintroduction plan needs to be developed. The plan will identify the reintroduction sites, provide provision for ecological carrying capacity studies to assess the feasibility of reintroductions, years and herd sizes for reintroductions, details of reintroduction protocols for different species and sites, monitoring program, timeline for the provision of supplemental feeding or for removal of fence if any has been erected, and this should also help to reorient the captive breeding program.

Conclusion

The protected area program of the country, covering about 22 per cent of its area is on a firm footing and this could be strengthened to restore and enhance the biodiversity of the country by formulating a ecologically sound and socially acceptable management regime. The implementation of the action plans proposed can succeed only when all the relevant players synergistically take forward their respective roles.

Abbreviations used

CBD:	Convention on Biological Diversity
PA:	Protected Area
SCENR:	Supreme Council for Environment and Natural Reserves
NBSAP:	National Biodiversity Strategy and Action Plan, Qatar

III Summary of Protected Area Action Plans

No	Actions		Work components	Responsibility	Time-line (Yrs)					
						1	2	3	4	5
1	PA institutional reform in the form of creation of a central PA Department within SCENR	1.1	Preparation of a detailed plan for the creation of a PA Dept, based on consultations and field visits	Wildlife Dept						
		1.2	Aproval of the plan by SCENR Governing Body and subsequent implementation	Secretary General (All functions of the PA Dept mentioned below shall be undertaken by the Wildlife Dept until the former is established)						
2	Formation of National Advisory Committee on PAs	2.1	Constitution of the Committee	Secretary General with the advise of Wildlife Dept						
3	Local Consultative Committees for PAs	3.1	Structured consultation meetings with local stakeholders in each PA	Wildlife Dept in cooperation with Monitoring Dept						
		3.2	Formation of the Committees and ratification of the same by SCENR	Wildlife Dept in cooperation with Monitoring Dept						

4	Rationalising the categorisation of PAs	4.1	To be finalised at an in-house consultative meeting	Wildlife Dept/ approval by SG					
5	Preparation of Management Plans (5 years) for each PA	5.1	Review of available literature	A team lead by the Wildlife Dept; the PA Dept when established to take over this.					
		5.2	Develop format for the Plan for each site						
		5.3	Field surveys for ecological, management and socio-economic data; also to investigate prospects water conservation structures						
		5.4	Consultation with the local people and other stakeholders						
		5.5	Preparation of the Plans and approval by the Governing Body of SCENR	do/Secretary General					
			Implementation of the plans	PA Dept, and Wildlife Dept until the former is established					
6	Capacity Building	6.1	Formation of a protected area cadre (recruitment/redeployment)	HR Dept and PA Dept					
		6.2	Training needs assessment	PA Dept and HR Dept					
		6.3	Preparation of training curriculum	do					
		6.4	Conduct of training courses/workshops	do					

7	Infrastructure development	7.1	Identification of infrastructure needs for each PA (Office space, quarters, computers etc, communication networks, vehicles, signage, etc)	PA Dept					
		7.2	Design of structures	do/consultants/Finance Dept					
		7.3	Approval by SG and execution	SG/PA dept /contractors					
8	Research	8.1	Preparing species inventory	Wildlife Dept/engaging individual consultants where appropriate					
		8.2	Population counts on key species	do					
		8.3	Periodic monitoring of indicator species	do					
		8.4	Population dynamics of endangered species/ game species	do					
		8.5	Comparative studies on the impact of protection on the vegetation	do					
		8.6	Migration studies on birds and turtles	do					
		8.7	Socio-economic profile of the dependent communities	do					
		8.8	Livestock populations and livestock economics	do					
		8.9	Training	do					
			8.9.1. Wildlife research methodologies						
			8.9.2. Documenting socio-economic issues in PAs						

9	Sustainable use plan (for each site)	9.1	Inputs: items 5 and 8 above; structured consultations with local stakeholders, facilitated by the Local Consultative Committees. To set out areas, periods, quantities for resource use (grazing, hunting, herbal collection, etc);mechanisms for social control, etc.	Lead by PA Dept						
		9.2	Impmentation of sustainable use plan	do						
10	Ecotourism development plan (key objective being economic benefit to local people)	10.1	Issuance of Guidelines for Ecotourism in PAs.	A technical committee to be formed by SG						
		10.2	Consultation workshop with Tourism Authority, tour operators, local stakeholders.	PA Dept/HR Dept						
		10.3	Preparation of ecotourism plans for each PA.	PA Dept/individual consultants						
		10.4	Training programs for local people in undertaking low cost ecotourism ventures (with the provision of marketing linkages with tour operators)	PA Dept						
		10.5	Execution of 10.3	do						
11	Reintroductions	11.1	Reintroduction policy statement based on existing scientific consensus on the issue	Wildlife Dept						

		11.2	Assessment of habitat suitability and carrying capacity of potential reintroduction sites, for restocking locally-extinct/threatened species, and preparation of a reintroduction plan for future	do						
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