Trends in Saudi Arabia: increasing community involvement and a potential role for eco-tourism

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The historical approach of establishing national parks that are somehow isolated from the greater society has been overtaken by a new approach to conservation of species and ecosystems... Our Common Future (WCED 1990).

In the last ten years there has been a global shift away from the preservationist approach to protected area management and increasing recognition that local community involvement is essential if long-term conservation objectives are to be met. In Saudi Arabia, where formal wildlife protected areas have been in existence for only 15 years, the exclusion of traditional resource users has led to conflicts within and around reserves, and has stalled the development of the protected area network.

Recent initiatives have sought to increase public support for protected areas in Saudi Arabia through the creation of multiple use zones; through increased consultation with tribal leaders; through the employment of wildlife rangers from surrounding communities; and through assessment of the potential role of eco-tourism in facilitating regulated public access, generating revenue, and providing opportunities for environmental education.

If we treat our national parks, nature reserves and protected areas as 'islands set aside from human use' they will come under increasing... risk of submergence in a human sea. Martin Holdgate, IUCN Director General, 1989.

THE EARLIEST development of areas of natural beauty for recreation involved the taming of small patches within a sea of wilderness so that people could enjoy nature without its associated discomforts and dangers. This was the concept behind the development last century of a spa utilising the hot springs at Banff, Canada. Surrounded by a vast wilderness of mountain forests the early visitors to the Banff hot springs must have felt that human impact on nature was negligible.

It was not to remain negligible however, as expanding human populations and growing industrialisation increased the potential for humans to change the natural environment. In recognition of this threat to scenic natural sites, the world’s first national park was created at Yellowstone in 1872. For many decades afterwards the concept of the national park was shaped by the Yellowstone model to involve the protection of special sites set aside from the ravages of ordinary use.

The World Conservation Strategy (IUCN 1980) explicitly acknowledged that surrounding communities tend to bear the costs of protected areas but receive few if any benefits, and called for the linking of protected area management with the economic activities of local communities. This was endorsed by the 1982 World Congress on National Parks and Protected Areas (WCNPPA), which called for increased consideration of the role of local people in protected area management.
In 1987 the report of the World Commission on Environmental Development (WCED) introduced the concept of sustainable development, emphasising the need to integrate and balance the objectives of environmental conservation and human development (WCED 1987). The principles of sustainable development were further developed in Caring for the Earth (IUCN et al. 1991), in which the wider functions and benefits of a protected area system were recognised.

Delegates to the IVth WCNPFA, held in Caracas in 1992, recognised that the 'island mentality' (McNeely 1993) view of protected areas was fundamentally incompatible with the principles of sustainable development, ignoring as it does the relationships that may exist between people and their traditional lands. The Caracas Declaration stated that the establishment and management of protected areas: must be sensitive to the needs of local people; must attempt to inform and educate the general public about environmental concerns so as to gain their support; must develop mechanisms to involve all sectors of society; must develop the education role; and must develop ways in which to generate revenue and share such benefits equitably among all stakeholders.

The message was unambiguous – the old human exclusion national park model was neither a sustainable nor sufficient approach in which to integrate environmental conservation and human development in all situations. Clearly other models were needed in order to increase the management role of public and private sectors, and to build relationships with local communities.

The management of any protected area, particularly those in developing countries, will therefore face three challenges: a lack of funding in the face of decreasing government budgets for conservation, often arising from a lack of appreciation of the revenue earning potential of protected areas; a lack of public support stemming from poor conservation literacy in the general populace; and the need to increase the participation of and devolve tangible benefits to adjacent communities (Sale 1992).

The land; the wildlife; social, political, economic and environmental change; and a history of protected areas in Saudi Arabia

_The destruction of the Kingdom's wildlife and its habitats is an ecological manifestation ... attributable as much to socio-economic as to ecological factors, although there is no denying the susceptibility of the delicate arid ecosystems to inappropriate management._ Graham Child and John Grainger (1990).

Geology, climate and wildlife

The information presented in this section has been drawn from the following sources: Bindagii (1980); Child and Grainger (1990); Fisher and Membrey (1998); Guba and Glennie (1998); Kürschner (1998); Mandaville (1990); McKinnon (1990); Nayeem (1990); Rands (1989).

The character of the Arabian Peninsula is a reflection of its African origins and its proximity to Asia. Once linked to Africa within the primordial landmass of Gondwana, the Arabian crustal plate, an extrusion of ancient crystalline rock split away some 35 million years ago along the seam that is now the Red Sea – part of the northern portion
of the Great Rift Valley. Today the distinctive landforms of Saudi Arabia are a legacy of intense volcanic activity near the western margins of the plate, but also attest to wetter periods, the most recent from 10,000 to 5000 years before present.

Saudi Arabia encompasses semi-arid (western Highlands) arid (northern and central steppes) and hyper-arid (Rub' al-Khali) regions. Inter-annual temperature variation is low and seasonal changes are regular, but mean ambient temperatures vary greatly between different areas, ranging from 18°C in the far north-west, to 31°C on the south-western coasts. An absolute maximum of 40–50°C has been measured over much of the Peninsula, lower only at the high western elevations. Rainfall is the main meteorological event of the year, characterised by high inter-annual variation and extreme local patchiness. Total annual rainfall ranges between <50 mm in the Rub al-Khali, to >400 mm in the south-western highlands.

The dominant feature of Arabia's floral and faunal elements has been described as one of alternate immigration and isolation, arising from the intermittent presence of land bridges between Africa and Asia, and alternating periods of aridity and high rainfall. The fauna present in Saudi Arabia today and in the recent past is a product of a process of influx during pluvial periods, followed by reduction in numbers and range during arid periods, some marked by waves of extinction. Surviving forms have become isolated by shrinking habitat, e.g. Asir juniper forest highlands, leading to relict populations (the Mimusops tree groves of the Asir), modified subspecific forms (the Asir magpie Pica pica asirensis), and the evolution of distinct endemic taxa (Arabian woodpecker Dendrocopus dorae, Yemen thrush Turdus menachensis, and Philby's rock partridge Alectoris philbyi; and some 170 plant species in the south-western highlands). The Peninsula's mammal assemblage too reflects a mixture of Asia (grey wolf Canis lupus, red fox Vulpes vulpes, Blanford's fox Vulpes cana, marbled polecat Vormela peregusna), with a strong African influence (Hamadryas baboon Papio hamadryas, sand cat Felis margarita, caracal Caracal caracal, Rueppell's fox Vulpes rueppelli, honey badger Mellivora capensis, genet Genetta felina), and the presence of endemics such as the Arabian oryx Oryx leucoryx.

Saudi Arabia is important also for species which breed outside its borders, but use the Arabian Peninsula as a stepping stone between the western Palearctic and Africa. It's estimated that 2–3 billion birds migrate south across Arabia each autumn. Some of these approximately 190 migrant species are globally threatened, and all are vulnerable to persecution, particularly during stop offs or when over-wintering on the Peninsula.

**Political, economic, social and environmental change in Saudi Arabia**

... oil wealth has unfortunately led to environmental destruction due to insufficient planning and by allowing rural people to emancipate themselves from the ecological constraints that formerly limited their yields, but also prevented wholesale abuses of 'their' resources. Graham Child and John Grainger (1990).

The information in this section has been drawn from the following sources: Al-Kahem (1989); Allan and Warren (1993); Alwelaie (1985); Chaudhary et al. (1996); Child (1989); Child and Grainger (1990); Finan and al-Haratani (1996); Grutz (1999);
Harrison and Bates (1991); Jennings (1989); Kingery (1971); Lacey (1981); MAW (1989); Nader (1989); Parry (1999); Yergin (1991).

The birth of the modern Saudi State can be traced back to 1901 when Abdulaziz al-Saud, then a young man in his early twenties, gathered 40 men and moved on the capital of Riyadh. In what seems today to have been a relatively minor skirmish, this tiny army seized control of the Musmak fort and returned Riyadh to Saudi hands.

Through a process of conquest, inclusion and marriage Abdulaziz united what had previously been a patchwork of rival sheikhdoms, and moved in 1913 on the Turkish garrison at Hofuf. The next year, in 1914, Abdulaziz re-took the Al-Hasa oasis; significant enough then as the end of Turkish control of central and eastern Arabia, but hugely important in hindsight as it brought under Saudi control the most valuable piece of real estate in the world – the region containing the oil.

The disintegration of Turkish authority in the Hijaz after WWI allowed Abdulaziz to move westwards, gaining Hail and the Asir by 1920, and the port at Jeddah and the holy cities of Makkah and Medina by 1927. The authority of the House of Saud was unchallenged. The Kingdom of Saudi Arabia was proclaimed in 1932.

Oil exploration began in 1933, but it was five years and six unproductive wells later, in March 1938, that the SOCAL subsidiary, CASOC (California Arabian Standard Oil Company), struck oil with Well No. 7 on the Damman Dome. It soon became evident that Saudi Arabia's Eastern Province sat over the largest pool of oil in the Middle East.

The impact on Saudi Arabia of the revenue generated by the sale of petroleum products has been massive and sustained. At the peak of oil prices in 1981 Saudi Arabia was making about US$3000 a second from oil; the main contribution to a US$150 billion GDP. Even today, a single day's production of Saudi crude oil is sufficient for a car getting 25 mpg to make 48 round trips between the Earth and Mars.

The many benefits of development, the improved transport and communications networks, increasing literacy rates and expansion of the education system; improved health care and reduced infant mortality, to name a few, have been accompanied by some almost inevitable environmental costs.

In the pre-oil days the ability of humans to have an impact on natural resources was limited by relatively low population densities, modest economic means, and a widespread dependence on subsistence agriculture, including nomadism – an efficient means of exploiting fugitive and seasonally fluctuating plant resources. An increasing human population and an objective of national self-sufficiency in food production has combined with increasing demand for sheep and goat meat and for crop plants. With greater wealth subsistence agricultural systems can be freed from dependence on variation in annual rainfall. The tapping of non-renewable fossil water stores has allowed expansion of wheat growing; in 1989 the Kingdom produced 3.3 million tonnes of wheat. In response to the 1950 drought and consequent reduction in livestock numbers (>85% livestock losses in some regions), tribal lands were opened to free grazing by Royal decree in 1953. Breakdown of traditional systems of resource conservation opened the way for a 'tragedy of the commons', whereby 'individuals using a common resource are encouraged to over-exploit it because the costs of doing so are shared by the whole community, while they alone reap the benefits' (Child and Grainger 1990). This, together with the

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1 Recent figures give a total population of around 23 million, comprising 16 million nationals and some 7 million resident expatriates.
availability of supplementary feeds, water trucks and the ability to truck livestock to areas receiving recent rain, increased herd numbers far beyond the ability of the desert vegetation to support them.

Overgrazing in combination with fuel wood gathering and, to a lesser extent the loss of natural vegetation to cultivation and recreation, has threatened both wildlife and rural productivity. Surveys of the Kingdom’s rangelands in the 1970s showed that 85% were in a severely degraded state. More recently it has been estimated that over 50% of grazing lands, and 75% of the country is seriously eroded due to impoverishment of the natural vegetation². On top of this, the prevalence of all-terrain vehicles and automatic weapons has seen unregulated hunting expand into once remote and inaccessible areas. During last century a number of native species have become extinct, including: Asiatic cheetah Acinonyx jubatus (locally extinct 1950s); Arabian ostrich Struthio camelus syriacus (totally extinct 1950s); Arabian oryx (extinct in the wild 1970s); or suffered declines in both breeding populations and range, such as Nubian ibex Capra ibex nubiana; Arabian leopard Panthera pardus nimr; houbara bustard Chlamydotis undulata macqueenii; sand gazelle Gazella subgutturosa, and mountain gazelle Gazella gazella.

A recent history of wildlife conservation in Saudi Arabia

Islamic law (Shari‘ah) firmly establishes the principles of human stewardship over shared natural resources; acknowledges the direct and indirect benefits provided by wildlife, and grants rights to all living creatures (Bagader et al. 1994). Such principles were subsumed within early tribal land management systems, at least as far back as the time of the Prophet Muhammad (Llewellyn: 1998), in which provisions were made for the protection and conservation of plant resources through the creation of fallow lands and specified use areas (bima) (Grainger and Llewellyn 1994). Despite the breakdown of tribal grazing lands in the 1950s, a few bimas in south-western Saudi Arabia continue to be respected locally, and are maintained under five types: no grazing; grazing and cutting permitted; year-round grazing; beekeeping; forest protection (Draz 1969).

Within modern Saudi Arabia responsibility for wildlife conservation has fallen within the remit of a number of government agencies, primary among these have been the Ministry of Agriculture and Water (MAW), the Meteorological and Environmental Protection Administration (MEPA), and the National Commission for Wildlife Conservation and Development (NCWCD). The role of the NCWCD is considered below.

The NCWCD was created by Royal Decree in 1986 to: ‘Develop and implement plans to preserve wildlife in its natural ecology and to propose the establishment of proper protected areas and reserves for wildlife in the Kingdom.’ (Article 3 [4] of Royal Decree No. M/22). The term wildlife covers all indigenous wild plants and animals

² With the removal of government subsidies for supplementary food, and a desire for access to schools there has been a shift from true nomadism to semi-settled livestock herding. Small holdings are becoming less profitable and fewer young people wish to tend heeds. It is possible that the next few decades will see a decline in livestock numbers, increased use of imported meat protein, and possibly, an improvement in natural vegetative cover.
and their habitats (Child and Grainger 1990). By necessity some of the NCWCD's first major projects focused on the protection and restoration of high profile animal species such as the houbara bustard and the Arabian oryx. By initiating projects for the captive-breeding and reintroduction of 'flagship' quarry species with the potential for future sustainable use the NCWCD has sought gradually to gain popular support for other, less spectacular but equally fundamental conservation programmes.

From the beginning the NCWCD recognised that the conservation of representative portions of the Kingdom's major habitats would be essential for the protection of not only key species, but entire communities of plants and animals (Büttiker and Grainger 1989). The foundation of the NCWCD approach has been the creation of a large network of protected areas and the management of these areas in such a way as to fulfil the NCWCD mandate to preserve, conserve, but also to develop the nation's wildlife (Abuzinada et al. 1992).

The NCWCD's System Plan for Protected Areas attempts to draws on the cultural precedents of the traditional bima system (Grainger and Llewellyn 1994), and compiles information from earlier surveys by other government agencies to list a total of 103 candidate protected areas, covering a total of over 170,000 km², or 8.1% of the Kingdom (Child and Grainger 1990). It was initially planned that up to 10 new sites would be declared annually during the first decade of NCWCD operations. Lack of inter-agency cooperation and failure to gain public support in the face of a preservationist approach meant that by 1999 a total of only 13 protected areas, plus botanical reserves/sanctuaries in three NCWCD field research centres had been formally decreed (Figure 1).

**Recent trends in the management of protected areas in Saudi Arabia: a tale of four reserves.**

Protected areas cannot be managed in isolation from their surroundings...especially in arid ecosystems in which both resources and resource users have strongly fugitive properties. Graham Child and John Grainger (1990).

In the early stages of establishing its protected area network the NCWCD followed a policy of strict protection, excluding all tended livestock and restricting human access to enable the overgrazed landscapes to recover. It is possible to examine the NCWCD's changing approach to protected area creation and management by comparing four sites: Al-Khunfah, Mahazat as-Sayd, 'Uruq Bani Ma'arid, and Umm ar-Rimth. This section has been developed from the ideas presented in Seddon et al. (1999).

**Al Khunfah protected area**

The Al-Khunfa protected area was declared in 1988 to protect the then largest population of sand gazelle in Saudi Arabia, and to conserve a large tract of sandy gravel plain bordering the western edge of the Great Nafud (Child and Grainger 1990). Because of its vast size only 8000 km² of Al-Khunfah's 20,000 km² are patrolled by a force of rangers based in ground camps, and by light aircraft (Figure 2). Patrols are intended to enforce this core zone's Special Natural Reserve status, the strictest level of protection assigned by the NCWCD. Under SNR status all hunting of wildlife and all grazing by domestic livestock is forbidden, no dwelling sites, whether
Figure 1. Current network of NOWCD wildlife protected areas in Saudi Arabia.

Figure 2. Al-Khunfah protected area, showing position of ranger camps around the core zone. A ditch and dike barrier has been constructed along parts of the southern and western boundaries of the protected area.
permanent or temporary are permitted, and access to the area is by permit only. The area was designated and is managed with negligible involvement from the surrounding local communities, many of whom have effectively lost traditional grazing lands. Consequently, gazelles are threatened by poaching, facilitated by easy access to the area from major highways. The NCWCD’s initial response to incursions was to construct a large dike and ditch barrier along the southern and part of the western boundaries to the core zone. A similar approach has been used for the same reasons in the 12,150 km² Harrat al-Harrah protected area to the north of Al-Khunfa. Poaching still takes place and the Al-Khunfa gazelle population is believed to have declined (Wacher 1995).

**Mahazat as-Sayd protected area**

The Mahazat as-Sayd protected area was also declared in 1988, with a little over 2200 km² being placed under SNR designation (Seddon 1996). The area was intended from the beginning to be a reintroduction site for Arabian oryx, houbara bustard, and gazelles. It was felt at the time that the only sure way of enforcing the SNR status was to fence the area. Mahazat as-Sayd was surrounded by a barbed wire-topped mesh-link fence in 1989 (Figure 3). The fence is patrolled daily by NCWCD rangers. Once again general public access is prohibited, and community involvement in reserve management is negligible, although in the last five years the ranger force has been made up of locals. There have been no instances of poaching and only a handful of illegal entries in the last ten years. The important difference between Al-Khunfah and Mahazat as-Sayd is that Mahazat as-Sayd is fenced and is thus able to maintain its strict protection status with minimal enforcement effort, and minimal benefit to traditional stakeholders.

**'Uruq Bani Ma’arid protected area**

By the time the ‘Uruq Bani Ma’arid protected area was established on the western edge of the ‘Rub al-Khali in 1994 the fencing of huge protected areas was no longer an economically nor politically feasible, so in order to start to incorporate local community needs into the process of protected area management, the NCWCD adopted a new approach. The approximately 12,000 km² area was divided into three zones (Figure 4): a 2400 km² core protected zone, a 5500 km² surrounding managed grazing zone, and a controlled hunting zone of over 4000 km² (Bothma and Strauss 1996). This created in effect a multiple resource use site. The core zone has been designated a Natural Reserve, which allows for greater public access than an SNR. Transit of livestock is permitted through the core zone so that seasonal access to central grazing areas is not hindered (Sulayem et al. 1997). In addition the NCWCD has sought to consult with and involve local tribal groups in the monitoring of released oryx. A large proportion of the rangers employed in the reserve are from local communities, enabling the NCWCD to make full use of their excellent tracking skills and local knowledge. Consequently, without the need for fences, the area has sustained good public support.

**Umm ar-Rimth**

The nearly 6000 km² Umm ar-Rimth protected area³ was declared in 1996, but to date has no formal structures or mechanisms in place. The area was chosen as a new

³ The area is variously known as Umm ar-Rimth (Mother of Haloxylon salicornicum), Saja, and Al-Hmr, depending on the exact area being referred to; I have simplified matters by using the name Umm ar-Rimth to refer to the entire area.
Figure 3. Mahazat as-Sayd protected area. The perimeter of the area is delimited with a 2 m barbed-wire-topped fence.

Figure 4. 'Uruq Bani Ma‘ain protected area, showing the core zone, the managed grazing zone (resource use reserve) and the controlled hunting zone.

1. Rockan Camp
2. Al Qamam Camp
3. Mishrif Camp
reintroduction site for houbara bustards, and plans are underway to identify a suitable release site for houbara. This would amount to 10% of the total area and would be designated a SNR with restricted public access due to the vulnerability of any re-established houbara population. In recognition of the problems facing the preservationist management of NCWCD protected areas (Zaghloul and Al-Masoudi 1999) the remainder of the area would be a Resource Use Reserve, jointly managed by local communities and the NCWCD with the aim of developing livestock herding practises that would improve grazing efficiency and permit some recovery of natural vegetation. For the first time the NCWCD is seeking the advice, cooperation and approval of local tribal leaders before any formal management decisions are taken for the area. The aim is to understand and fulfil the needs of the traditional stakeholders in as environmentally friendly manner as possible.

**Trends in protected area management in Saudi Arabia**

Five trends in the NCWCD approach to protected area management may be discerned:  
- increased consultation with local communities;  
- increased use of the Resource Use Reserve zones;  
- increased employment of local people as rangers;  
- increased contact between rangers and local communities;  
- decreased application of strict Special Natural Reserve zones.

The NCWCD has taken the first, necessary steps to public and community involvement in protected areas. However, it is as yet unproven that any kind of regulated grazing management is feasible or compatible with ecosystem recovery;
the restoration of the larger mammal species remains problematic in areas lacking natural geographic boundaries without improved public attitudes and support; there are still no effective mechanisms for regulated public access to protected sites, and as yet few tangible benefits accrue to communities surrounding the majority of the NCWCD protected areas.

One area that holds some potential for addressing these challenges is the development of nature tourism within selected protected areas.

**Eco-tourism and protected areas in Saudi Arabia**

 Protected areas can be especially important for development when they [inter alia] provide income and employment, notably from tourism. Caring for the Earth (IUCN et al. 1991).

This rapid expansion [of tourism] represents both a threat to fragile ecosystems and an opportunity for harnessing resources for conservation and community development. Russell Mittermeir, Conservation International (quoted in: Sweeting et al. 1998).

Any way you look at it, as a result of global trends for increasing wealth and leisure time, and decreased travel costs and restrictions (Ceballos-Lascuain 1996), tourism has become a massively expanding industry of global importance. The World Tourism Organisation predicts that in 2000 travel spending will reach US$4.2 trillion, and by 2010 there will be over 1 billion tourist arrivals per annum. The economic impacts are massive; tourism is now the number one employer, providing jobs for some 230 million people – 10% of the global workforce (World Travel and Tourism Council website). Although the statistics relating to domestic tourism are poor, the evidence suggests that more than 3 billion people travel within their own country each year (Sweeting et al. 1998). No wonder then that many countries, particularly developing nations, are actively encouraging tourism development as a means to create employment and generate foreign currency.

The fastest growing sector of the tourism industry is nature-based tourism; this has been defined as any tourism that is directly dependent on the use of natural resources in a relatively undisturbed state – even if that use is neither wise nor sustainable (Ceballos-Lascurain 1996). In recent years 40–60% of international tourists are estimated to focus their travel on the enjoyment of nature (The Ecotourism Society website).

The concept of ‘ecological tourism’ or ‘ecotourism’ emerged in the early 1980s; defined expansively by the IUCN’s Ecotourism Programme as:

- **environmentally responsible travel and visitation to relatively undisturbed areas, in order to enjoy and appreciate nature that promotes conservation, has low visitor impact, and provides for beneficially active socio-economic involvement of local populations** (Hector Ceballos-Lascurain 1996);

and more succinctly by The Ecotourism Society as:

- **responsible travel to natural areas that conserves the environment and sustains the well-being of local people** (Western 1993).
Ecotourism will focus on the best examples of a country’s biological and cultural assets. It’s no coincidence then that ‘one of the most urgent points of intersection between ecotourism and conservation’ (Boo 1993) occurs within protected areas – sites chosen because they are a nation's biological and cultural jewels.

While protected areas may obviously benefit tourism, ecotourism can benefit protected areas through: exposure of the public to the natural world, with opportunities for improved environmental education and awareness, and consequently increased public support; generation of revenue, with the potential for this to be channelled back into protected area maintenance and management; and the creation of jobs in the region and the promotion of economic development, particularly for local communities (Boo 1993). Does this list sound familiar? It mirrors the challenges facing protected areas under the new management paradigm of sustainable development.

So, is that the answer? Will ecotourism solve the problems facing Saudi Arabia’s protected areas? It’s not quite that simple. Protected areas are inherently sensitive sites; increased visitor levels will have an inevitable impact at a number of levels. Such impacts may be direct, arising from the presence of the tourists, or indirect, due to the infrastructure supporting the industry (Ceballos-Lascurain 1996). These negative impacts can lead to environmental degradation, economic inequity, and sociological change (reviewed in Boo 1990; Ceballos-Lascurain 1996; Roe et al. 1997; and references therein).

Negative impacts on protected areas will be exacerbated where the park or reserve lacks funds, lacks staff, lacks expertise, and is therefore unable to harness benefits for the protected area or for local communities. The message is simple: protected areas must specifically plan for ecotourism.

The development of true eco-tourism centred on carefully selected protected area would be in keeping with the directions being taken by the NCWCD, and could be compatible with local expectations as well as a valuable means of educating the general public and gaining their support.

An NCWCD study was started in 1999 to assess the potential role of ecotourism in the management of protected areas in Saudi Arabia, with the aim of formulating a strategy for protected area tourism development that takes into account public attitudes to wildlife; the need to form partnerships with both the private sector and with local communities; the state of the domestic tourist industry, and the potential for international tourism, particularly in conjunction with pilgrim visits for the Hajj. The key will be for the NCWCD to become a leader in setting best practise guidelines for nature tourism in Saudi Arabia, both within formally designated protected areas, and within other natural areas subject to less well regulated human use.

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