PRELIMINARY REPORT ON NATURAL HERITAGE SITES IN WESTERN SYRIA

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MUNICIPALITY ADMINISTRATION MODERNIZATION PROJECT MED/2004/6264: EUROPE AID/119822/SV/SY

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Background

Scientific knowledge about the natural heritage of Syria - especially on the fauna side – has been quite scant until early 2000, when some pioneering organized reconnaissance efforts were prompted by a major UN/DGCS¹ international conservation project in the desert of Palmyra (1996-2004), in assistance of the Ministry of Agriculture and Agrarian Reform.

The intensive surveying program carried out in the framework of the UN Palmyra project led, among other outstanding results, to the discovery in 2002 of a relict colony of one of the rarest bird on Earth, the Northern Bald Ibis, which made the headlines on international media during the following years - including a video on BBC's Earth Report and on the National Geographic.

The international interest on Syria's natural heritage was since then turned on, suddenly. The image that was drawn from these preliminary surveys was dramatic: due to an intensive and constant focus on economic development and production for decades, the natural heritage of Syria has been severly degraded almost everywhere in the territory - often completely swept away. As a



The evolution of desertification in the southern Tartous area between 2003 and 1991. Source: ACSAD

Satellite images from ACSAD comparing vegetation coverage in western coastal Syria in 1991 (right) and in 2003 (left) (Dagge 2008).

result many species of fauna have vanished or are at the brink of local and regional extinction.

For instance, the picture shown beside, produced by the Arab Center for the Study of Arid Zones and Dry Lands (ACSAD), is quite shocking in showing the extent the vegetation cover had been swept away during period 1991-2003 in a section of western coastal Syria (south of Tartous) (Dagge 2008)².

The N. Bald Ibis of the Palmyra desert has therefore quickly become a symbol and flagship for this grim ecological situation, which helped since 2002 to

foster the interest of Government and civil society on Syria fauna. For instance, in 2004, a major UNDP/GEF project was launched aimed at developing 3 protected areas within the country, Jebel Abdul Aziz, Fronloq and Abu Qubeis.

Following the ibis discovery, 2 international bird expeditions were organized and carried out in Syria, while a number of independent birdwatchers and nature-lovers flocked to the country in search of rarities and made available their very valuable field observations and trip reports. In early 2007 an international expedition found a remarkable concentration of Sociable Plovers in the steppes of north-eastern Syria – another critically endangered bird on a global scale.

In parallel, during these same years the interest and awareness for the surviving natural heritage of Syria has also been growing nationally, catalysed by the direct interest of the Palace: in fact, H.E. Mrs Assad, the Syrian First Lady, inaugurated a Desert Cultural and Natural Education Center in

¹ Direzione Generale Cooperazione allo Sviluppo, Italian Cooperation Program

² This picture was taken from the article "The Creeping Desert" published on the August 2008 issue of Syria Today (Dagge 2008): the scientific reliability of the visual satellite comparison proposed in these article cannot be guaranteed by the author.

2003 in the surroundings of Palmyra and a photo-exhibition in Damascus titled "The Syrian Desert Al Badia: a Cultural and Natural Heritage Under Threat" in 2006.



Invitation to the photo-exhibition held in October 2006 at the Danish Institute in Damascus titled "The Syrian Desert Al Badia: a Cultural and Natural Heritage Under Threat" (front cover).

The preliminary fauna observations, carried out during the recent years across Syria, were already sufficient to realize that the natural heritage of western Syria is heavily degraded and highly threatened mainly due to insufficiently controlled and planned human economic activities, but also that, nonetheless, there is still some very limited time in order to save some unique and precious sites here and there: these sites have the potential to become invaluable samples of the once marvellous Syria natural heritage, for the enjoyment, awareness and education of the present and future generations (Syrian in first place, but not only).

Natural landscapes and ecosystems

Western Syria holds the highest human density and is the most industrialized part of the country. One of the reasons being that western Syria is wetter than the eastern part and therefore suitable for agriculture. This is especially true for the Orontes valley and the coastal section of the country, while Dara'a, Damascus and Qarietin are located at the border with - or already within - the steppe/desert environment where agriculture is difficult or not possible.

Key ecosystems recognizable within western Syria are the following, starting from the south:

- steppe/desert flatlands and hills
- mountains: anti-Lebanon mountain range (west of Damascus) and Alawite mountain range (parallel to the coast, east of Tartous and Latakia)
- hills (for instance, Sweida and all the area between Homs/Hama and Tartous)
- plains, internal and coastal
- rivers, reservoirs and sabkhat (freshwater ecosystems)
- marine coast and sea (salty water ecosystems).

Threats and conservation status

The internal freshwater bodies and the sea coast and water typically suffer of heavy pollution – due to wastes coming from factories (mostly chemicals), cultivated fields (pesticides and fertilizers) and from town and villages (sewage). Over-fishing and uncontrolled hunting constantly threaten the fauna associated with marine environment and freshwater bodies.

Uncontrolled waste, especially plastic waste, has turned in recent years a real national emergency: plastic bags are accumulating and increasing exponentially over the soil of Syrian territory, and, spread by the wind; they are nowadays covering all kinds of Syrian environments, from the desert to the sea beaches. Driving overland from neighbouring countries, the arrival in Syria is nowadays sadly heralded by this harsh reality which is becoming increasingly evident: in fact, plastic wastes, almost eternal in life, increase exponentially year after year on the Syria territory.

Another severe and increasing threat is the building of landscape-destructive large concrete infrastructures everywhere, from the desert to the coast, from the mountains to the hills, without much consideration for the value of the Syrian native and original landscape. Suburbia-type grey palaces are erected in beautiful rural environments everywhere destroying the beauty of the Syrian landscape heritage irreversibly – impairing heavily the potential to develop tourism.

Often, it would be just a matter of more consideration and planning, as the careful selection of a site can make a big difference in terms of landscape impact: an eloquent case is that of the plan for building a large cement plant in one of the most beautiful desert sites between Damascus and Palmyra (see Jebel Kohla and Wadi Al Basira, in the Findings section). The desert is unfortunately still considered as a lifeless environment, and therefore suitable for establishing very polluting activities or for dumping dangerous wastes.

Desert and steppe suffer from over-grazing of pastures by livestock, uncontrolled shrub uprooting for firewood and illegal hunting. Surviving last patches of forests are threatened by wild fires and tree logging – as also by livestock uncontrolled grazing.

Hunting practice in Syria is still either unselective (all kind of fauna species are killed regardless of their edible and commercial value) and unsustainable (the quantity of individuals killed *per* species is unlimited and uncontrolled). Hunting is operated either by national and foreign hunters accompanied by locals. Because hunting is banned in Syria since at least 15-20 years ago, through a national moratorium, the hunting in question should be actually referred to as "poaching". But this ban is certainly not sufficiently enforced.

Last surviving mammals are heavily persecuted and becoming increasingly rare (for instance wolves and hyenas): they will most likely follow the same destiny of gazelles, ibexes, cheetahs and leopards which disappeared from Syria not long time ago. The uncontrolled use of poison in rural areas is one of the main cause of fauna loss in Syria. Also birds are decreasing steadily due to the unsustainable hunting pressure: the most valuable resident birds of Syria (for instance falcons and houbaras) have been already wiped out, while all the hunting pressure is nowadays focusing on migratory birds - delivering a huge damage to the whole international community to which this migratory fauna belongs to.

One of the root or underlying most severe cause for the general ecological degradation of Syria is certainly the exponential population growth combined with the insufficient environmental awareness at all levels. In fact, the anthropogenic pressure on natural resources has enormously increased during the past 40-50 years due to a high rate of population growth: the Syrian population was 3.4 million in 1950, while it reached 19.4 million by the year 2007 – which accounts for a population growth rate of 2.45 %, six times higher than the same average growth in Europe (Andersen 2008).

Least but not last, 2 severe additional overlooked threats are also becoming increasingly evident in Syria. The first is the fact that the establishment of several protected areas during the recent years had not been followed by a proper investment aimed at making them operative and effective on the ground through the employment of trained staff, purchase of sound equipment and adoption of scientifically-based management plans.

The other threat is the tendency to promote tourism before the tourist attractions are effectively managed and sufficiently protected: this is a very common attitude and practice, in fact a dangerous one as the uncontrolled tourism impact holds the potential to deliver the last blow to the threatened natural and cultural assets of the country - as it has happened already in many other countries around the world.

Potential for ecotourism and nature tourism

Tourism is currently regarded as the world's largest industry and it has been clearly identified by Syrian authorities as a development strategy key for several regions. During a high-level workshop organized by the British Syrian Society about the tourism development in Palmyra, in mid April 2008, the Prime Minister and several other ministers showed to be highly aware about the importance of the protected areas, recently established in the Palmyra desert, for diversifying the tourism product and therefore for helping turning the town to become a premiere quality tourist destination.

Ecotourism is a relatively new and different form of nature and adventure travel, pursuing the preservation of local natural and cultural heritage through improving the welfare of the local community. In the context of global tourism market, ecotourism accounts for 2-4 % of the entire tourism sector - but it is one of the fastest-growing segment of the industry according to the World Tourism Organization. The market for ecotourism seems to be rapidly growing in western Europe. The new travel ethic on which ecotourism is rooted derives from an increasing global appreciation of the intrinsic value of un-spoilt nature and realization that the planet's biodiversity is being lost at unprecedented rates.

It is clear that a terminology confusion exists between "ecotourism" and "nature tourism". Since the 1992 Earth Summit in Rio ecotourism has become a quite fashionable term and concept increasingly proposed by bilateral donors and cooperation agencies as a mean for promoting nature conservation in developing countries while improving the welfare of local people. It is an approach also favoured by international lending agencies such as the World Bank and the International Monetary Fund (IMF).

On one hand, nature tourism is a type of tourism focusing on showing natural assets with no major concern about conservation of biodiversity and associated local communities. The same as mainstream tourism, nature tourism is mainly controlled by market forces. In fact, at present most of the so labeled "ecotourism" operations around the world better qualify as nature tourism.

On the other hand, ecotourism is defined by the IUCN (The World Conservation Union) and the Nature Conservancy: "environmentally responsible travel to natural areas, in order to enjoy and appreciate nature (and accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples".

Ecotourism is small scale but ensure that most revenues go to the local community, while revenues from nature tourism usually and easily remains outside the local level. Ecotourism should provide local economic benefits, conserve the environment, allow local participation in planning and management and be developed in a socially and culturally sensitive manner.

Objective

To describe the known sites key from a biodiversity and natural point of view, lying within the study area, and to make specific and clear recommendations on how to best value and protect them for the enjoyment of Syrian present and future generations and for the sake of ecotourism and nature tourism development.

Methodology

Information on which present report is based were opportunistically collected during period 2001-08 through several reconnaissance surveys and expeditions and also through more informal visits. In January-March 2004 a Syria Wetland Expedition (SWE) took place, involving 12 people of different nationalities, including Syrians (Murdoch *et al.* 2004; 2005), supported by the Ornithological Society for the Middle East (OSME) and BirdLife International. A number of other trips were carried out on a personal initiative by the author of present report and by several other foreign birdwatchers and nature lovers. Several of these "trip reports" are available on-line at the web site of OSME (<u>www.osme.org</u>). A special tribute should go to Dave Murdoch, Remco Hofland and Anssi Kullberg, who made several expeditions and surveys in the country and were kindly ready to make their very valuable recorded observations available. The author had also had the chance to personally survey the biodiversity of the Fir-cedar PA in 2004, while involved as an expert in the GEF/World Bank project titled "Conservation of biodiversity and protected areas management project (SY-GE-57109)".

An important preliminary survey was conducted by BirdLife International in Syria in the early 1990s (Evans 1994) whose outcome was a list of so-called "Important Bird Areas" (IBA), relatively to Syria, which were then included in the global inventory of IBAs run by BirdLife International (<u>http://www.fao.org/GTOS/doc/BRIM-BirdLife.pdf</u>). IBAs are defined as "sites of international importance for the conservation of birds, and associated fauna and flora communities, identified against a set of globally standardized scientific criteria".

The main target of above mentioned expeditions and surveys was avifauna, although typically any kind of fauna was recorded. Birds are actually the most obvious kind of wildlife seenable during a quick diurnal survey, due to their mostly diurnal habits and to their use of our same perceptive and communication channels (visual and acoustic). For instance, detection of mammals is comparatively much more complicated and time consuming as they are mostly nocturnal and heavily rely on olfactory clues as a main communication channel.

There is consensus that birds are suitable and sensitive ecological indicators for rapid assessments of the naturalistic value of a given area. In heavily degraded landscapes, such those in several parts of western Syria, any potentially resident fauna survived to their natural habitats' destruction and to human persecution could be found only where some natural vegetation still occurs. Nonetheless, western Syria is blessed with migratory birds, which can use for stop-overing also sites almost devoid of any vegetation, such as the overgrazed steppe, artificial reservoirs and seasonal salt lakes (sabkhat), and barren ridges of mountains.

The study area considered by the present report is that including the provinces of Damascus, Homs, Hama, Halep, Tartous and Latakia. A <u>very preliminary</u> list of 10 sites surveyed during past years and found of high interest from a natural point of view is presented in the next section (Findings). These sites are ranked according to criteria of <u>natural heritage potential and value</u> ("Natural interest", with marks ranging 1-5; where 1 is the lowest and 5 the highest) and of <u>degree of current threats of destruction</u> ("Threats", with marks 1-5). For each site the following standardized information is given, across the two next sections (Findings and Recommendations):

- Geographic coordinates
- Location and description
- Natural interest
- Threats
- Conservation status
- Source
- Recommendations.

Each site is identified with a number - in parenthesis, beside the title of each paragraph - that can be easily found in the below reported general reference map. Being based on an opportunistic surveying approach rather than on a systematic approach - and on good will and passion rather than on properly funded efforts - the list presented should be considered only as a preliminary and tentative one. It surely presents very valuable and unique sites in the country, on which protection and conservation efforts should certainly focus as a matter of urgency. But, surely, more surveying would be needed in the future - before it is too late - in order to identify additional naturalistically valuable sites.



General reference map showing the study area and the sites mentioned in the text.

Findings

Fronloq Protected Area (1)

Geographic coordinates: 35.8612, 36.0142

Location and description. This protected area, 4500 ha. of total surface, is located on the northern section of the Alawite coastal mountain range, beside the road Latakia-Kassab, 47 Km north of Latakia and 5 Km south-east of Kassab, at an altitude of about 600 m asl. The road itself is the western border of the protected area while the border with Turkey is the northern limit of it.

Natural interest (4). The protected area is covered in deciduous and coniferous forests, with a rich plant diversity. Oak and pine are the dominant trees. Despite the pretty limited size, this forest is one of the last few remaining in Syria of this kind, offering refuge to a number of interesting forest fauna which spills from Turkish forests. The natural interest is surely represented by the need to save at least



one sample – although very small – of all ecosystems once present in Syria, for the knowledge and benefit of present and future generations.

Threats (3). Fires, tree logging for firewood, livestock uncontrolled grazing. Possibly, ineffective management of PA.

Conservation status: protected.

Source: UNDP/GEF project SYR/05/010, Biodiversity Conservation and Protected Area Management.

Latakia Coast (2)

Geographic coordinates: 35.9302, 35.9156 (Point A); 35.4181, 35.9129 (Point B)



the world, already considered extinct since the 1980-90s from Syria (IUCN 2007). The rare occurrence of these highly charismatic vertebrate sea animals makes this stretch of Mediterranean coast unique and extremely important regionally and internationally.

Threats **(5**). Uncontrolled infrastructure development, uncontrolled and illegal fishing, disturbance, waste and sewage human mismanagement, water pollution.

Conservation status: Um al Toyour, Ras el Bassit, Fanar Ibn Hani are the only (very limited) protected sites of the mentioned coast.



Location and description. The northernmost section of Syria coastline, for a total of about 90 Km, starting from about 15 Km south of Latakia to the border with Turkey.

Natural interest (5). As shown by recent surveys (Rees et al. 2008), the sandy beaches located in this 90-Km stretch of Syrian coast are key nesting sites for two sea turtle species: the Loggerhead and the Green turtle, both species being listed as "Endangered" on a global scale by the IUCN's Red List (IUCN 2007). Moreover, recently, it has also emerged that the northern part of the mentioned coastline, from Ibn Hani to the border, is most likely important for the "Critically Endangered" (IUCN 2007) Mediterranean Monk seal (Gucu et al. 2003), one of the rarest mammal - if not the rarest - of the Mediterranean basin and of



Monk seal Monachus monachus

Source: Rees et al. 2008; Gucu et al. 2003

Loggerhead turtle Caretta caretta

Fir-cedar Protected Area (3)

Geographic coordinates: 35.5534, 36.2294

Location and description. The Alawite coastal mountain range is a continuation to the north of the Anti-Lebanon mountains range, which stretches from the north to the south, parallel to the Mediterranean coast, and the Al-Arab mountains in the south. The Fir-cedar protected area is located in the vicinity of the mountain resort of Slenfe, 60 Km east of Latakia and 20 north-west of



Apamea.

Natural interest (4). Despite the very limited surface area (few tens of Km²) the Fir-cedar PA is an important protected area as it contains on its eastern slope the very last stand of cedars still surviving in Syria, for a total of (only) 2 Km² in surface. In addition, there are appreciable patches of fir woods on the western slope for a total of 9.8 Km². The fir and cedar forests are situated in the upper zone of the northern part of the coastal mountains on the western and eastern exposures of Nabi Matta mountain, between 900 and 1562 m asl. To the east the Al Ghab plains are located, once a system of wetlands, nowadays all reclaimed to agriculture.

A total of 5 globally threatened fauna species (IUCN 2007) were detected in 2004 in the Fircedar PA: 2 "Vulnerable" species (Greek Tortoise, Lebanon Viper), 3 "Low Risk – Near Threatened" species (Pallid Harrier, Striped Hyaena, Persian Squirrel). Several regionally threatened or decreasing species were also detected such as the Egyptian Vulture, Saker Falcon and the Wolf.

The mountain ridge of the Fir-cedar PA is a suitable watchpoint for detecting important

numbers of birds during autumn migration. Most common migrating bird species are: White Stork, Black Stork, Black Kite (eastern variant), Honey Buzzard, Common Buzzard, Steppe Buzzard, Lesser Spotted Eagle, Steppe Eagle, Booted Eagle, Levant Sparrowhawk.

The potential for eco-tourism in the Fir-cedar PA is high, due to the proximity to key tourist coastal resort of Latakia. Most ecotourists will visit the area to experience the sight of cedar and fir forests. There are at least 18 charismatic fauna species in total that could be of interest for ecotourists, on top of the soaring migratory birds passing in autumn: Fire Salamander, Long-legged Buzzard, Short-toed Eagle, Hoopoe, Syrian Woodpecker, Nightingale, Mistle Thrush, Lesser Whitethroat, Coal Tit, Greek Tortoise, Sling-tailed Agama, Lebanon Viper, Wolf, Striped Hyaena, Wild Cat, Roe Deer, Persian Squirrel, Indian Crested Porcupine. Finally, at least 8 breeding bird species are of importance for birdwatching: Spectacled Bulbul, Rufous Bush Robin, White-throated Robin, Orphean Warbler, Long-tailed Tit, Masked Shrike, Jay, Cretzschmar's Bunting.

Threats (3). Woodland habitat degradation and/or destruction due to uncontrolled logging and fires; uncontrolled hunting and livestock over-grazing; uncontrolled mass tourism development; possibly, insufficient PA management. The last stand of cedar trees of Syria were already highly threatened in 2004, due to insufficient protection.

Conservation status: protected; probably needs investment and focus on improving the protected area management and on better integrate local community's with conservation needs.

Source: G. Serra (GEF/World Bank project "Conservation of biodiversity and protected areas management project SY-GE-57109", 2004).

Abu Qubeis Protected Area (4)

Geographic coordinates: 35.2088, 36.3032

Location and description. Abu Qubeis PA is located on the Alawite coastal mountain range, 45 Km south of the Fir-Cedar PA and about 50 Km north-west of Hama.

Natural interest (4). Despite the very limited size (few tens of Km²) the PA is important due to occurrence of a rich Mediterranean maquis and of a Mediterranean oak woodland still in a good



condition, holding remarkable numbers of woodland bird species. Tree cover is both evergreen and deciduous.

Threats (4). Tree logging, fires, possibly goat over-grazing and possibly insufficient management and protection.

Conservation status: protected.

Source: UNDP/GEF project SYR/05/010, Biodiversity Conservation and Protected Area Management.

Lake Qattine (5)

Geographic coordinates: 34.6416, 36.5659

Location and description. An ancient reservoir 15 km south-west of Homs; the extent of open water

is reported to vary from 3000 ha in summer to 5300 ha in winter, with a water depth of 4-8 m.

Natural interest (4). More than 20,000 waterfowl were counted during the International Water Count survey of January 1993 (Scott 1996) at Lake Qattine. The Important Bird Area Inventory stated that Lake Qattine was believed to be the most significant wintering site Syria for the "Critically in White-headed Endangered"



Duck, with counts of 100 in 1977 (MacFarlane 1978) and 30 in 1993 (Evans 1994). In February 2004 hundred of thousand of waterfowl were found wintering in the middle of the lake, but very few White-headed Ducks. Due to the remarkable extension of the lake, waterfowl, when in the middle of the lake, is able to escape hunting. A freshwater turtle was detected in February 2004 by the author along a stream running down to the western shore of the lake: this rare reptile is certainly a very good ecological indicator, showing that at least on the western shore the natural habitat was still alive in 2004.

Threats (5). The major threat to the lake is certainly the fertilizer factory located near the village of



Qattine, on the eastern shore, which is known to heavily pollute the water of the lake. Being a closed water basin, the sewage and organic matters streaming from villages and agricultural fields is also concentrating in the lake creating a problem of eutro-phication. Uncontrolled hunting and fishing is also threatening the fish and the migratory and wintering birds.

Conservation status: unprotected.

Source: MacFarlane (1978), Evans (1994), Scott (1996), Murdoch *et al.* (2004; 2005).

Wadi Manshura (6)

Geographic coordinates: 33.7878, 36.1769

Location and description. A highaltitude wadi (2000-2200 m asl) one hour drive from Damascus, 4-5 Km south from the Lebanese border, 3 Km south-east from the village of Sargheia and 7 Km North-east of Bludane.

Natural interest (3-4). High pastures with flowers and abundance of butterflies. The mountain ridge is a suitable watchpoint for detecting important numbers of birds during autumn migration. Most common



migrating bird species are: White Stork, Black Stork, Black Kite (eastern variant), Honey Buzzard, Common Buzzard, Steppe Buzzard, Lesser Spotted Eagle, Steppe Eagle, Booted Eagle, Levant Sparrowhawk. Good hiking, mountain biking and climbing potentials. Overall, recreational potential is considerable due to the short distance from both Bludane and Damascus.



Apollo species are high-altitude butterflies.

Threats (?). Uncontrolled hunting and grazing?

Conservation status: most probably unprotected.

Source: G. Serra

Yarmuk (7)

Geographic coordinates: 32.7419, 35.9084



Location and description. The Yarmuk river runs along a quite steep valley - a kind of canyon - at the border between Syria, Jordan and Palestine. The site visited in 2004 was about 20-23 Km northwest of the city of Dara'a.

Natural interest (4). The canyon scenery is overwhelming. This site is one of the only 2 in Syria where the last surviving majestic Griffon vultures can be seen soaring in the

sky - the other site is in the vicinity of Palmyra.

Other interesting fauna occur at this site: noteworthy is the occurrence of birds such as the Palestine Sunbird, Long-billed Pipit, White-breasted Kingfisher, which cannot be seen anywhere else in Syria; the same applies to the Cape hyrax which can be heard or seen on the rocky slopes. The occurrence of crabs in a side tributary stream of the Yarmuk river in 2004 suggested a relatively clean and lively riverine ecosystem.







Cape Hyrax Procavia capensis.

Threats (?). Unknown

Conservation status: probably unprotected, but de facto seemed protected due to the vicinity to the border and the Golan heights, and the consequent presence of military.

Source: G. Serra (visited the area in June 2004)

Jebel Sys (8)

Geographic coordinates: 33.3098, 37.3590

Location and description. A volcanic hilly desertic area, about 100 Km north-east of Sweida and 100 Km east of Damascus, covered with black basaltic rocks. The hills appear to be old eroded volcanoes. An interesting archaeological site is found beside the so-called Jebel Sys.

Natural interest (5). This



area, differently from the rest of the Syrian desert, cannot be driven off road easily by vehicles due to the sharp basaltic rocks scattered everywhere. Only few tracks driveable by vehicles cross this area. This mere fact might have likely remarkable implications in terms of fauna occurrence: in fact, hunting activities might be very limited in this area, making it a haven for rare fauna already



Houbara Bustard Chlamydotis undulata.

Concernation status: (legally) upprotected?

disappeared from the rest of Syria. The detection of a very rare Houbara Bustard in April 2007 seems to well support and confirm this hypothesis. Wild Sand gazelles might still be found in this area. Recreational potential for this area is regarded as remarkable due to the relatively short distance from Damascus.

Threats (4). The area seems for the time being naturally protected, at uncontrolled least from hunting. Threats be infrastructure could development (for instance of construction roads. resorts. industrial plants etc.) and dumping of dangerous wastes.

Conservation status: (legally) unprotected?

Source: Serra and Bruschini (2007)

Jebel Kohla and Wadi Al Basira (9)

Geographic coordinates: 34.0705, 37.4863

Location and description. Jebel Kohla and Wadi al Basira are located almost mid way on the road between Damascus (140 Km) and Palmyra (100 Km).

Natural interest (5). The high-altitude Wadi Basira (975 m asl) is arguably the most scenic stretch of desert on the road between Damascus and Palmyra. Jebel Kohla is an outstanding relief,



reaching 1400 m asl. with a distinctive flat with top and geological horizontal layers of different colours, making it resembling a kind of "cake": unique а pattern in the whole Syrian desert. It was probably named Kohla by nomads due to its kind of "make-up" appearance. Being mid way between Damascus and

Palmyra this is the ideal place for a stop over to drink a tea or coffee while enjoying the beauty and the peace of the surroundings. For this reason the first "Baghdad Café" was built in early 2000 (very well designed, with traditional architecture, and nicely harmonized with the environment) 3 – after the first one another 2 or 3 were established.

The desert in this area seems quite wild and naturalistically unexplored: the naturalistic potential of this area seems likely high, both in terms of fauna and flora. Locals reported to the author that only 30 years ago this desert area was a favourite one for gazelles.

Threats (5). According to what stated by the locals running the cafes, a large cement plan is going to be built just in front of Jebel Kohla, very close to the road, as evidenced by a large red panel set at the side of the road and by the quard's buildings already erected nearby. This infrastructure will destroy irreversibly the beauty and fine desert scenery of the area - not to mention the peace and quietness. It is surprising that this site was selected for the purpose, when there are so many other less attractive sites within the 300 Km between Damascus and Palmyra.



Conservation status: unprotected?

Source: G. Serra (2008).



Jebel Kohla (photo by G. Serra, taken from the road Palmyra-Damascus).



Jebel Kohla, and the red panel indicating that a cement plant will be build (photo by G. Serra, taken from Baghdad cafe).

Sabkhat al Jabbul (10)

Geographic coordinates: 36.0455, 37.5661



Sabkhat Jabbul, northern shore, February 2004 (photo by G. Serra).

Location and description. Sabkhat al Jabbul is a large wetland, 30 Km southeast of Halep, lying between the fertile cultivated areas around Aleppo, the Euphrates basin and the Syrian steppe. In the last 20 years, it has been modified from a typical seasonal saline lake (sabkhat) to a complex wetland eco-system with three separate water bodies that vary from saline to brackish.

The maximum water surface is currently 270 km². The major causes of these changes are the construction of dykes and the expansion of irrigation schemes that use the sabkhat as an outlet for irrigation drainage water. Some shores have recently developed

large reedbeds.

Natural interest (5). Ornithological records are limited, but there is already good evidence that this is the most important wetland in Syria and one of the most important of the whole Middle East, with large numbers of wintering and migrant waterbirds and substantial breeding populations. Sabkhat al Jabbul nowadays seems to support more than 1% of the world population of a range of waterbirds, including Greater Flamingo, the globally threatened White-headed Duck, possibly also Greater White-fronted Goose, globally threatened Marbled Duck and the near-threatened Ferruginous Duck.

About 15 thousand flamingos have been counted in Sabkhat al Jabbul repeatedly during period 2004-06. Its geographical position makes it of great importance for a wide range of migrant species. It was designated as a Ramsar site in 1998 (i.e. enlisted in a global inventory of wetlands of international importance) and listed as an Important Bird Area (BirdLife International 2000).

Threats (5). Sabkhat al Jabbul seems still seriously threatened by uncontrolled water pollution, fluctuating water and salinity levels, degradation of shore vegetation and by uncontrolled hunting. One of the key underlying causes has been identified in the limited coordination of planning and management between the relevant governmental institutions. Recently, the uncontrolled and destructive development of fisheries inside the sabkhat, promoted by urban investors, has emerged as the major key threat for this wetland.

Conservation status: partially protected.

Source: Serra et al. (2006).



Greater Flamingo Phoenicopter ruber.

Recommendations

A general recommendation applicable for the whole Syrian western territory - for the whole Syria territory as a matter of facts - is that of promoting a <u>change of mentality and attitude relatively to</u> <u>what is left from the national natural heritage</u>. Ensuring the survival of the last remaining patches of natural and healthy ecosystems in Syria is not an optional – it is a bitter lesson learnt everywhere else in the world. Ecosystems are key for the quality of life of local communities, they usually have a key economic value (for instance the forests, the pastures and the sea resources) and they deliver vital ecological services (clean water and air, protection from floods and from hydrogeological instabilities, fertile soils, climate stability, absorption of pollution, medicinal plants etc.).

It should be explained and promoted widely, starting from schools, that protecting the last surviving patches of natural environments in Syria is <u>in the national interest</u> and is <u>not against the socio-</u> <u>economic development</u>. To the contrary: for instance, the UN Millennium Development Goal n. 7 proclaims "Ensuring the environmental sustainability".

In general terms, in western Syria, as in the whole country, it is recommended to invest more in the following environmental measures (in addition to awareness raising and education):

- providing sewage plant systems for all urban centres of a certain size
- reducing the use of pesticides and fertilizers employed in agriculture start promoting more organic and healthy farming
- controlling chemical wastes from industries
- controlling hunting and fishing, grazing, tree logging and forest fires
- controlling infrastructure buildings, especially along the coast, on mountain resorts and in the desert
- managing the waste and especially the plastic waste; start cleaning up (liberate!) the country from plastic wastes
- turning protected areas from "paper" to operation, invest on training, equipment and sound management
- introducing rural communities with the concepts and ideas of family planning
- controlling and managing the masses of visitors and tourists at the most popular sites.

Sea turtle sanctuary

There is certainly scope for proposing a "Marine Sanctuary" comprising the whole mentioned coast from Latakia to Kassab (2) and a section of the sea offshore. Given the explained high regional and international value of this stretch of coast the already established protected areas of Um al Toyour, Ras el Bassit and Fanar Ibn Hani seem largely insufficient – although surely a good starting point. A protected area, carefully compromising the development needs and expectations with nature conservation, would certainly enhance and diversify the quality of the tourist market for the Latakia coast.

It would be the first of this kind in the Middle East and would held remarkable chances of increasing and promoting quality tourism and eco-tourism on the Syrian coast, especially thanks to the fact that the resort city of Latakia would be included in it. A sea turtle sanctuary would also be very important for raising much needed environmental awareness (especially about key issues such as the need for waste management, for controlling water pollution and fishing), taking advantage that Latakia is a university town. As shown by Turkish south-western sea resorts, combining sustainable tourism with sea turtle conservation is not impossible. It needs a clear and effective management and protection plan, trained staff and volunteers, and funds.

The Syrian Govt. has already established more than 20 protected areas across the country over the past 10 years and the real challenge is to turn them into operative protected areas according to international standards. Establishing new protected areas is risky in these regards. In particular, a sea turtle sanctuary will need to become operative quickly otherwise the risk that its establishment does more harm than producing benefits to turtles is a real possibility.

In fact, there are instances in the Gulf where establishing turtle protected areas have created problems to the turtle instead of helping them to survive. This has happened because before the PA had been established very few people knew about the actual turtle nesting sites, and local community was somehow exploiting this resource sustainably and at the same time protecting it. When the nesting sites became known on a wider scale, without proper protection and rules enforcement, the exploitation pressure and disturbance on the turtles increased dramatically.

The same apply, with even higher emphasis, for the monk seal, being a species at the brink of extinction. It is therefore highly recommended to consider carefully this idea taking into account that the legal establishment alone will not work: it will need significant investment aimed at establishing effective management and proper protection. Sound management of the coast in the areas around Latakia will be surely challenging given the high interests of "heavy" development. The guiding principle should be sustainable development trading off between short term and long term profits.

Sites with excellent natural potential under imminent threat

Sabkhat al Jabbul is most likely one of the most important wetland survived in the Middle East and it is under current exceptional threats of being irreversibly degraded by the establishment of uncontrolled fishery businesses and by heavy pollution rates. It is highly recommended to grant full protection to this internationally important wetland through a participatory process and to invest on it before it is too late.

Jebel Kohla is a site of stunning desert beauty with high recreational and educational potentials which is in imminent threat of destruction due to the building of a cement plant. It is highly recommended to save this site especially taking into account the Govt. plans to turn Palmyra into a quality tourist destination. Jebel Kohla is part of the jibal tadmorii and is a key stop-over place for tourist on their way to Palmyra.

This area would be ideal for the establishment of a protected area for mere recreational and educational purposes and also for reintroduction of gazelles. In fact locals reported that only 30 years ago this desert area was a favourite one for gazelles. Al Talila reserve in Palmyra is presently over-stocked with gazelles and could be the source for reintroducing them in a protected area around Jebel Kohla. The locals, once trained, should be responsible for protecting the gazelles from poaching.

From the Bagdad Café visitors could engage in short hikes by foot or by camel or mountain bike, escorted by a local (trained) eco-guides, and admire wild roaming gazelles in their natural environment. This would become a unique and awe-inspiring experience of this kind in Syria and in the region.

Rehabilitating Lake Qattine

Despite already quite degraded there are still remarkable hopes to save this valuable freshwater ecosystem especially taken into account the reported plan of moving soon the fertilizer plant elsewhere. It is therefore recommended to invest in the future in starting to rehabilitate, manage and protect properly this lake due to the remarkable recreational and educational potential. It is still a key site for wintering of waterfowl and it could be rehabilitated in its full ecological functionality over the course of a period of 5-10 years.

Protected areas of Fronloq, Fir-cedar and Abu Qubeis

It is recommended to invest in turning these protected areas into operative protected areas

according to international standards.

Wadi Manshura, Jebel Sys and Yarmuk

It is recommended to consider granting legal protection to these 3 sites which appear to hold high biodiversity, naturalistic and scenic values.

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