

This field guide aims at giving comprehensive information about the key species endangered, vulnerable or critically endangered in Lebanese and Jordanian protected areas of the MEET project.

The Mediterranean Experience of Ecotourism (MEET) project develops an ecotourism model for Mediterranean Protected Areas based on the "European Charter for Sustainable Tourism" to promote a better seasonal distribution of tourism flows.

The MEET catalogue fosters authentic and active exchange between visitors, local people, and Protected Areas, resulting in conservation of natural and cultural resources and revitalization of less developed communities.



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# A Field Guide

## Key Species in Lebanon & Jordan

**Key Species from the IUCN REDLIST**



Project funded by the  
EUROPEAN UNION



CROSS-BORDER COOPERATION  
IN THE MEDITERRANEAN

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\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

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\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## Mediterranean Experience of Ecotourism

# The MEET PROJECT

## ENPI – CBC MED Program framework

The 2007-2013 ENPI CBC Mediterranean Sea Basin Programme is a multi-lateral Cross-Border Cooperation initiative funded by the European Neighbourhood and Partnership Instrument (ENPI). The Programme objective is to promote the sustainable and harmonious cooperation process at the Mediterranean Basin level by dealing with the common challenges and enhancing its endogenous potential. It finances cooperation projects as a contribution to the economic, social, environmental and cultural development of the Mediterranean region. Official Programme languages are Arabic, English and French.

[www.enpicbcm.eu](http://www.enpicbcm.eu)  
[ec.europa.eu](http://ec.europa.eu)

## The project in brief

According to the World Tourism Organization, ecotourism is a major trend with a growing demand for consumers for packages which offer responsible travel to natural areas, conservation of the environment, and improvement of the well-being of local people. The Mediterranean area is one of the most interesting regions in the world in terms of ecotourism potential. The high diversity of landscapes and ecosystems together with the unique socio-economic and cultural mosaic provide suitable conditions for the development of ecotourism.

In order to foster the diversification of tourism offered and a better seasonal distribution of tourism flows, the Mediterranean Experience of Ecotourism (MEET) project aims to improve the sustainability and the rationalization in distribution of the tourism sector in the Mediterranean region. In the framework of cross-border cooperation within the European Neighborhood Policy Instrument (ENPI Med), under the strategic line "Promoting the sustainable tourism for the socio-economic development and enhancement of territories", this strategic project involves 10 countries of the Mediterranean: Italy, France, Spain, Jordan, Lebanon, Malta, Cyprus, Greece and Tunisia.

## Goal

Develop an ecotourism model for Mediterranean Protected Areas (PAs) based on the "European Charter for Sustainable Tourism" to promote a better seasonal distribution of tourism flows.

## Expected Results

- Functional guidelines for ecotourism planning in the Mediterranean region.
- Better international cooperation in the field of ecotourism across the Mediterranean region.
- A MEET ecotourism catalogue with ecotourism packages from about 20 Mediterranean Protected Areas to selected international markets from USA, Canada, Australia and Japan.
- A MEET network of PAs involved in managing the catalogue and capitalizing on project results, supported by a Secretariat located in Malaga (Spain).
- At least six partnerships of local small and medium enterprises that develop ecotourism products.

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# Lebanon

## Al Shouf Biosphere Reserve:

The Shouf Biosphere Reserve is the largest nature reserve in Lebanon covering extensive areas of Mount Lebanon. It is also the home to a dedicated group of men and women who protect and manage an area of outstanding natural beauty.

The Al-Shouf Cedar Nature Reserve was established on 1996. In 2005 UNESCO declared the reserve and its surrounding 22 villages as the "Shouf Biosphere Reserve" in recognition of its success in sharing the management and rewards of conservation with the local community.

The Shouf Biosphere Reserve is divided into three zones: The Core zone (93sq Km) consists of the protected areas and private lands. The Buffer zone (86sq Km) consists of municipal lands incorporated into the reserve and private lands.

The development zone (320sq Km) consists mostly of private lands, municipal lands, and religious trusts.



Hiking



Gastronomy





(c) Zeynel Cebeci

Class : PINOPSIDA  
Order : PINALES  
Family : PINACEAE

## Cedar of Lebanon *Cedrus libani* (VU, Vulnerable)

### Description:

Lebanon Cedar (*Cedrus libani*) is native to the eastern Mediterranean region, including Turkey, Lebanon, and Syria (Choukas-Bradley 1987; Bird 1994; Kurt *et al.* 2008). It is more widely planted as a highly regarded ornamental (Dirr 1998). Lebanon Cedars have a thick, massive trunk and very wide-spreading branches, the lower ones sweeping the ground. The dark green, densely packed leaves are borne in horizontal tiers. Young trees are slender pyramids, but become flat-topped as they mature. A typical 10-year-old specimen would be around 6 meters tall; after 40 to 70 years, it might reach 12 to 18 meters, but these trees can grow to a maximum size of about 23 to 37 meters in height with a 24 to 30 meter spread. (Bird 1994; Dirr 1998).

### Habitat and Ecology:

Usually occurs on north and westerly-facing slopes at elevations between 1,300 and 3,000 m, but in Turkey it can occur as low as 500 m (Atalay and Recep 2010). Soils are well drained and usually calcareous although in Lebanon trees do occur on sandstone formations (Talhouk 2001). The climate is of cool and moist winters with abundant snow at higher elevations. In Cyprus, Turkey and Lebanon it can occur in pure stands, but more often it is associated with the conifers *Abies cilicica*, *Juniperus excelsa* and *J. oxycedrus*. At lower elevations it is associated with *Pinus nigra* and *Pinus brutia*. Commonly associated broadleaved species include: *Quercus cerris*, *Sorbus torminalis* and *Prunus ursina* (Talhouk 2001). In Syria it occurs in a degraded mixed forest with oak, pine and fir (Khouzami 1994). In Cyprus it is often associated with *Pinus brutia* and *Quercus alnifolia* and mixed forest with *Platanus orientalis*. In Cyprus, good seed crops are typically produced once every five to seven years and there is a 50-60 % seed viability.

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*



(c) Mickey Samuni

Class : REPTILIA  
Order : SQUAMATA  
Family : VIPERIDAE

## **Lebanon Viper** ***Montivipera bornmuelleri*** **(EN,Endangered)**

### **Description:**

This species has been recorded from high mountain regions in Lebanon and Syria from about 1,000 to around 2,200 m asl. It is present on the Mount Lebanon Range, the Anti-Lebanon Range and Mount Hermon and is also present on Jabel Al Arab (Druz), Syria.\*

### **Habitat and Ecology:**

It is found in cedar forests, alpine grasslands and amongst cushion-type vegetation and rocks. This species gives birth to between 2 and 18 young.\*

The Lebanon viper is likely to have aspects in common with other members of the viper family (Viperidae). Vipers are generally ambush predators, striking their prey with long, hollow fangs which they use to inject venom. The fangs are hinged, and are folded back against the roof of the mouth when not in use. Vipers may also strike in self-defence.

\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

Mousa Disi, A.M., Hraoui-Bloquet, S., Sadek, R. & Werner, Y. 2006. *Montivipera bornmuelleri*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 August 2015.





(c) AL Shouf

**Class : MAGNOLIOPSIDA**  
**Order : LAMIALES**  
**Family : LABIATAE**

## **Ehrenberg's Marjoram** ***Origanum ehrenbergii*** **(VU,Vulnerable)**

### **Origanum**

is a genus of herbaceous perennials and subshrubs in the family Lamiaceae, native to Europe, North Africa, and much of temperate Asia, where they are found in open or mountainous habitats. A few species also naturalized in scattered locations in North America and other regions.<sup>[2][3][4][5]</sup>

The plants have strongly aromatic leaves and abundant tubular flowers with long-lasting coloured bracts. The genus includes the important group of culinary herbs: marjoram and oregano.<sup>[6][7]</sup>

*Origanum* species are used as food plants by the larvae of some Lepidoptera species, including *Coleophora albitarsella*.\*\*

*Origanum ehrenbergii* is a perennial chamaephyte (subshrub) growing primarily on sandy soils in grassland and under pine forest (*Pinus pinea* L.) between zero to 2,000 m asl on the western slopes of Mount Lebanon and South Lebanon Governorates in Lebanon, where it is endemic (Mouterde 1983, Post 1933, Tohme and Tohme 2007, GEF-UNDP-LARI 2013b). The observed fragmented distribution of this species suggests both a naturally patchy distribution of suitable habitat and loss of suitable habitat caused by industrial, agricultural, and urban development (Talhouk *et al.* 2005, UNEP-Ministry of Environment 2013). White flowers, appearing June-October, are likely insect-pollinated, and produce hybrids with *O. syriacum* (Tohme and Tohme 2007)\*

### **Habitat and Ecology:**

*Origanum ehrenbergii* is a perennial chamaephyte (subshrub) growing primarily on sandy soils in grassland and under pine forest (*Pinus pinea* L.) between zero to 2,000 m asl on the western slopes of Mount Lebanon and South Lebanon Governorates in Lebanon, where it is endemic (Mouterde 1983, Post 1933, Tohme and Tohme 2007, GEF-UNDP-LARI 2013b). The observed fragmented distribution of this species suggests both a naturally patchy distribution of suitable habitat and loss of suitable habitat caused by industrial, agricultural, and urban development (Talhouk *et al.* 2005, UNEP-Ministry of Environment 2013). White flowers, appearing June-October, are likely insect-pollinated, and produce hybrids with *O. syriacum* (Tohme and Tohme 2007).\*year and there is a 50-60 % seed viability.

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\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.

Leaman, D.J. 2015. *Origanum ehrenbergii*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 August 2015.



(c) AL Shouf

Class : REPTILIA  
Order : SQUAMATA  
Family : LACERTIDAE

This species is also found in the Dana  
Biosphere Reserve in Jordan

## **Lacerta kulzeri** ***Phoenicolacerta kulzeri*** **(EN, Endangered)**

### **Description:**

This species has a fragmented range in the Levant region. It is known from Mount Hermon (on the border of Lebanon and Syria), from the Lebanon and Anti-Lebanon Mountains (in Lebanon, crossing into Syria on the Anti-Lebanon), from Jabal Al Arab (Druz) in southern Syria, and from western Jordan (from Al Karak in the north to Petra in the south). It is found from 1,350 up to at least 2,000 m asl. On Mount Hermon it occurs above 1,500 m. The total area of occupancy of this species is estimated to be below 500 km<sup>2</sup> \*

### **Habitat and Ecology:**

This species is very restricted to the fragmented rocky areas in cedar and oak forests. Animals are found on boulders and amongst rocks, and can be found on abandoned buildings and similar modified habitats (although there is generally little human habitation in the range). It is an egg-laying species.\*

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*



(c) Andevard Auijen

Class : AVES  
Order : PASSERIFORMES  
Family : FRINGILLIDAE

This species is also found in the Tyre Coast Nature Reserve in Lebanon and also found in the Dana Biosphere Reserve in Jordan

## Syrian Serin *Serinus syriacus* (VU, Vulnerable)

### Description:

This canary feeds on the seeds of low grasses and herbs, and visits water pools daily to drink \*\*. It is found in groups in the non-breeding season, but becomes monogamous and territorial once at the breeding grounds. Males court females with a song display and captive birds have been seen feeding each other as part of the courtship process. Each pair builds a nest in a tree once the snow has begun to melt in mid-April to May. Four pale blue, glossy eggs are laid in May and June and the female incubates these for 12 – 14 days. The young fledge after just 14 – 16 days and the parents then move up to around 1,750 meters in July and August to produce a second clutch. When conditions are favorable the pair may have three broods \*\*

### Habitat and Ecology:

It breeds in rocky tracts of open or semi-arid Mediterranean woodland, usually dominated by conifers such as *Cedrus*, *Pinus*, *Abies* and *Juniperus* (Evans 1994, Baumgart 1995, Khoury 1998, Ramadan-Jaradi and Ramadan-Jaradi 1999). It is a tree-nester that feeds on the seeds of low annual and perennial grasses and herbs and requires daily access to drinking water (Khoury 1998).\*

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*



# Lebanon

## Jabal Moussa Biosphere Reserve

Jabal Moussa is an outstanding Biosphere Reserve located in Keserwan-Jbeil area, Lebanon. It covers an area of 6500 ha at an altitude ranging between 350 m and 1700 m; and extends to 500 m beyond the rivers of Nahr Ibrahim to the north and Nahr El Dahab to the south.

Jabal Moussa, which overlooks the Mediterranean Sea to the west, reflects a true mosaic of ecological systems. These systems broadly represent the biogeography region of the evergreen sclerophyllic shrubs and forests within Mediterranean biomes. A dominant feature of the biosphere reserve is its pristine world of steep, verdant mountainsides rising from a river lined with cool aromatic sycamore trees, to reach summits of statue-like karstic rocks.

The Biosphere Reserve is divided into a core area mainly dedicated to expert visits and research, a buffer zone where more ecotourism activities take place, and a transition zone that involves human activities and human use of land. The transition zone covers around half of the biosphere reserve's area, and its predominant land uses include: forest management, charcoal production, traditional agricultural activities, fruit trees plantation, grazing, and seasonal recreation. It has a great diversity in fauna, flora and cultural heritage.



Hiking



Culture



History



(c) Royal Botanical Garden

Class : MAGNOLIOPSIDA  
Order : SAPINDALES  
Family : ANACARDIACEAE

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## **Sicilian sumac (VU, Vulnerable)**

### **Description:**

This species has a restricted distribution, and the population is severely fragmented and declining as a result of overgrazing in some areas. Consequently it qualifies as Vulnerable. It has a limited and fragmented distribution.

Caution should be used about consuming sumac . The fruit has a sour taste; dried and crushed, it is a popular spice in the Middle East. Immature fruits and seeds are also eaten.

The leaves and the bark were traditionally used in tanning and contain tannic acid.

Dyes of various colours, red, yellow, black, and brown, can be made from different parts of the plant.

Oil extracted from the seeds can be used to make candles.[2]

Participants of the FFI/IUCN SSC Central Asian regional tree Red Listing workshop, Bishkek, Kyrgyzstan (11-13 July 2006) 2007. *Rhus coriaria*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 August 2015.





(c) Cristiano Crolle

Class : AVES  
Order : ANSERIFORMES  
Family : ANATIDAE

## Marbled Teal, Marbled Duck *Marmaronetta angustirostris* (VU, Vulnerable)

An elegant teal, the marbled duck suits its name, having a brown body speckled with cream. Its dark eye-patch blends into a broad stripe from the eye to the nape, including a slight crest on the back of the head. With its low, slow flight and noticeably long neck and wings, this duck is identifiable in flight. Displaying males give a squeaking 'jeep', but this species is otherwise quiet \*\*

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## Habitat and Ecology:

**Behaviour** This species is dispersive and partially migratory (del Hoyo *et al.* 1992). It shows variable, nomadic movements and is capable of dispersal in search of suitable habitat at any time of year as changing conditions require (Scott and Rose 1996) (Kear 2005, del Hoyo *et al.* 1992). There is a general tendency for a more southerly distribution during the non-breeding season and a more northerly distribution during the breeding season. It is highly gregarious post-breeding and during the non-breeding season when it occurs in large monospecific flocks (Kear 2005) of up to 2000 individuals (del Hoyo *et al.* 1992, Green *et al.* 2002). During the breeding season it is more dispersive, although paired birds often mix with conspecifics (Kear 2005). Nests are sometimes built in close proximity to one another, although they become increasingly spaced out as population density declines (Kear 2005, Green 2007). Nesting has been recorded from mid April to late June, and broods from mid-April to mid-September (Kear 2005). The species exhibits drastic population fluctuations, partly in response to annual variations in rainfall.

**Habitat Breeding** It is adapted to temporary, unpredictable, Mediterranean-type wetlands (Green 2000, 2007) and breeds in fairly dry, steppe-like areas on shallow freshwater, brackish or alkaline ponds with well vegetated shorelines (Green 1993), and rich emergent and submergent vegetation (Kear 2005). It also breeds on delta marshes where receding waters leave behind large areas of shallow water with abundant sedges and bulrushes (Johnsgard 1978). In addition it may use slow rivers and saline coastal lagoons, and man-made wetlands including fish-rearing ponds and small reservoirs (Green 1993). Although it favours brackish wetlands, it tends to avoid waters of high salinity. Microhabitat requirements are strongly influenced by diet. *Non-breeding* It uses similar habitat during the non-breeding season.

**Diet** varies considerably between seasons and sites and additionally with age. Diptera are an important component of the diet, especially before and during the breeding season. Small seeds become increasingly important after the breeding season with faeces of post-breeding birds in Turkey composed of 95% dry weight *Scirpus* seeds (Green and Sánchez 2003, Fuentes *et al.* 2004, Green and Selva 2000). Newly hatched chicks are highly dependent on emerging chironomids (Green 2000).

**Breeding site** Nests are usually constructed on the ground at the water's edge, beneath a covering of vegetation (Kear 2005, Green 1993). They may also occur above water in *Typha* stands (Kear 2005) and are reported to have been found in the roofs of reed huts (Hawkes 1970, Kear 2005). Mean clutch size was recorded in Spain to be 11.8 (Green 1998).\*





(c) Shimi Eni

Class : AVES  
Order : ACCIPITRIFORMES  
Family : ACCIPITRIDAE

## Greater Spotted Eagle, Spotted Eagle *Clanga clanga* (VU, Vulnerable)

### Description:

Large platforms of sticks are constructed in trees, on rock faces, and even on the ground in early May, and these nests may be sparsely lined with dried grass and assorted plant stems. In mid-May, between one and three eggs are laid, hatching 42 to 44 days later in mid to late June. Both parents care for the chick, providing it with food until it fledges in August. Frogs constitute the majority of the diet in some areas, but the greater spotted eagle is also known to consume small mammals, water birds and snakes. It will eat carrion and may force black kites (*Milvus migrans*) to surrender prey. The migratory movements of the greater spotted eagle are not well understood, but it seems the majority of the birds move from the main breeding areas in northeast Asia between late September and October to wintering grounds in southern China and south and Southeast Asia, returning to the breeding grounds in mid-April \*\*

### Habitat and Ecology:

It occurs in lowland forests near wetlands, nesting in different types of (generally tall) trees, depending on local conditions. It feeds on un-retrieved quarry, small mammals, waterbirds, frogs and snakes, hunting over swamps, wet meadows and, in Europe, over extensively managed agricultural land (A. Löhms in litt. 1999); birds soar to c.100 m high when hunting. It is a migratory species, with birds leaving their breeding grounds in October and November to winter in southern Europe, southern Asia and north-east Africa (del Hoyo *et al.* 1994). They tend to return in February and March. Birds migrate on a broad front, tending to pass in singles, twos and threes with the occasional larger group (Ferguson-Lees and Christie 2001). They do not concentrate at bottleneck sites to the extent of many other raptors such as *Clanga pomarina* (del Hoyo *et al.* 1994). \*

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

BirdLife International 2013. *Clanga clanga*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 August 2015.



(c) AngMoKio

Class : AVES  
Order : ACCIPITRIFORMES  
Family : ACCIPITRIDAE

## Eastern Imperial Eagle, Imperial Eagle, Asian Imperial Eagle *Aquila heliaca* (VU, Vulnerable)

The Imperial Eagle is the second largest eagle to reside in Europe. It can grow to a length of about 0.92 meters. It can have a wingspan approaching 2.14 meters and have a mass of about 3.6 kilograms.

Adults are black-brown in color. They have a pale golden crown and nape, and a grey base that extends to the tail. They also have very apparent white "braces" on their scapulars.

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

Juveniles are paler and more variegated than the adults. They are yellow-brown with rump, wing, and tail patterns similar to the patterns of the Lesser Spotted, pale Spotted, Tawny and Steppe eagles. They are distinguished from these eagles, however, by the bolder streaks on their under-wings and body, the lack of a pale band under the wing-coverts, and their larger and more majestic build. Both the juveniles and adults have noticeably protruding head and long, parallel-edged wings. Like other eagles, they have strong legs and feet. Their feet include long, curved talons that they use to seize, kill and carry their prey. They also have large eyes that are located slightly to the side of the head. These eyes provide them with extremely keen eyesight, allowing them to spot prey from high in the air. (Peterson 1993, Wyss 1997, Eagle 1988) \*\*

## Habitat and Ecology:

This is a lowland species that has been pushed to higher altitudes by persecution and habitat loss in Europe. In central and eastern Europe, it breeds in forests up to 1,000 m and also in steppe and agricultural areas with large trees, and nowadays also on electricity pylons. In the Caucasus, it occurs in steppe, lowland and riverine forests and semi-deserts. Eastern populations breed in natural steppe and agricultural habitats. Both adults and immatures of the eastern populations are migratory, wintering in the Middle East, East Africa south to Tanzania, the Arabian peninsula, the Indian Subcontinent and south and east Asia; wintering birds have also been reported in Hong Kong (China). These birds make their southward migration between September and November, returning between February and May (Ferguson-Lees and Christie 2001). Wetlands are apparently preferred on the wintering grounds. Birds are usually seen singly or in pairs, with small groups sometimes forming on migration or at sources of food or water (Ferguson-Lees and Christie 2001). In exceptional cases large groups of up to 200 have been known to form on autumn migration (Snow and Perrins 1998). Adults in central Europe, the Balkan peninsula, Turkey and the Caucasus are usually residents, whilst most immatures move south. Non-territorial birds often associate with other large eagles such as *A. clanga* and *Haliaeetus albicilla* on wintering and temporary settlement areas. \*rope, the Balkan peninsula, Turkey and the Caucasus are usually residents, whilst most immatures move south. Non-territorial birds often associate with other large eagles such as *A. clanga* and *Haliaeetus albicilla* on wintering and temporary settlement areas. \*

# Lebanon

## Tyre Coast Nature Reserve

The lands constituting TCNR, amount to an area of 380 ha divided into three zones; Tourism zone, Agricultural and Archeological zone and Conservation zone.

TCNR strives to achieve conservation and sustainable use through allowing use of the resources in an environmentally friendly and sustainable manner.

Tyre Coast Nature Reserve (TCNR) is located immediately south of city of Tyre. The Reserve is the biggest and most beautiful remaining sandy beach in Lebanon. It is characterized by its ecological, marine and coastal ecosystem. In addition, it is an important nesting site for migratory birds and the threatened sea turtles.

The natural reserve contains fresh water estuaries and springs that out-flow to the sea thus creating a fresh/ marine water interface. Both visitors and scientists recognize it as one of the most beautiful and scenic beaches in Lebanon, with the widest biodiversity.



Hiking Marine Activities





(c) Theodore Mattas

Class : AVES  
Order : PELECANIFORMES  
Family : PELECANIDAE

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## Dalmatian Pelican *Pelecanus crispus* (VU, Vulnerable)

Foraging close to roosting grounds, the dalmatian pelican fishes in the morning and late afternoon. It may feed alone, or in cooperative groups, sweeping the bill underwater for eels, mullet, gobies, shrimps, worms, beetles, prawns, catfish and other small fish. Whilst swimming, this pelican plunges its head beneath the surface to check for prey. Famous for the large pouch on the throat under the lower half of the bill, the pelican does not always eat as it fishes, instead filling the pouch for later consumption. Breeding begins in March and April in the western part of the range, but varies geographically. Nest sites are found in areas with plentiful fish and vegetation, and nests are constructed from reeds, grass, and sticks, fastened together with droppings. Between two and four eggs are laid and incubated for 31 days. The young pelicans gather in 'pods' after six weeks, and fledge at 75 to 85 days of age. They are sexually mature at three to four years. \*\*

### Habitat and ecology:

It occurs mainly at inland, freshwater wetlands but also at coastal lagoons, river deltas and estuaries (Crivelli *et al.* 1997; Mix and Bräunlich 2000; Peja *et al.* 1996; del Hoyo *et al.* 1992). **Breeding** It breeds on small islands in freshwater lakes (del Hoyo *et al.* 1992) or in dense aquatic vegetation (del Hoyo *et al.* 1992) such as reedbeds of *Typha* and *Phragmites* (Crivelli 1994; Peja *et al.* 1996; Pyrovetsi 1997; del Hoyo *et al.* 1992), often in hilly terrain (Nelson 2005). A few breed in Mediterranean coastal lagoons (Peja *et al.* 1996; Nelson 2005). The species makes use of habitats surrounding its breeding sites, including nearby islands and wetlands (Nelson 2005). **Non-breeding** On migration, large lakes form important stop-over sites (Nelson 2005). It typically winters on jheels and lagoons in India, and ice-free lakes in Europe (del Hoyo *et al.* 1992). It sometimes fishes inshore along sheltered coasts (del Hoyo *et al.* 1992).

**Diet** It feeds almost entirely on fish, especially carp *Cyprinus carpio*, perch *Perca fluviatilis*, rudd *scardinius erythrophthalmus*, roach *Rutilus rutilus*, and pike *Esox lucius* in freshwater wetlands (del Hoyo *et al.* 1992), and eels, mullet, gobies and shrimps in brackish waters (Crivelli 1994; Peja *et al.* 1996). In its winter quarters on the Nile it takes mostly Siluridae (Nelson 2005). In the Mikri Prespa breeding colony in Greece it feeds predominantly on the endemic fish species *Chalcaburnus belvica* (Pyrovetsi and Economidis (1998). \*



(c) T Puma

Class : AVES  
Order : PROCELLARIIFORMES  
Family : PROCELLARIIDAE

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## Yelkouan Shearwater *Puffinus yelkouan* (VU, Vulnerable)

*Puffinus yelkouan* is endemic to the Mediterranean basin, but its precise distribution is not well known and numbers are disputed (Bourgeois and Vidal 2008). The main breeding colonies are concentrated in the central and eastern basin of the Mediterranean, from Corsica and Sardinia through the central Mediterranean, the Adriatic and the Aegean (Borg *et al.* 2010). The species is known to breed in **France** (662-1,109 pairs), **Italy** (9,000-20,000 pairs), **Malta** (1,190 - 1,680 pairs), **Algeria** (8-10 pairs), **Tunisia** (176-200 pairs), **Croatia** (300-500 pairs), **Albania** (1-10 pairs), **Greece** (4,000-7,000 pairs) and **Bulgaria** (0-10 pairs), giving a global estimate of 15,300-30,500 pairs (Derhé 2012). Breeding is assumed in **Turkey** on offshore islands or mainland cliffs in the Aegean and Mediterranean, but there is very little data on this. A small population may also breed on the eastern Balearic Islands in **Spain**, although the existence of the species here is somewhat controversial, given the taxonomic uncertainty of the birds breeding in Menorca (Arcos 2011, Curé *et al.* 2010). Population trends in Albania, Algeria, Bulgaria, Turkey and Tunisia are currently unknown, but declines are suspected in Croatia and Greece. The population is estimated to be declining rapidly in Italy (N. Baccetti *in litt.* 2011), France (Oppel *et al.* 2011) and Malta (Borg and Sultana 2002, Raine *et al.* 2009, Sultana *et al.* 2011), representing around three-quarters of the global population. Nine colonies have gone extinct over the last 60 years (Bourgeois and Vidal 2008) and since 2009, one breeding colony off Sardinia (San Pietro Island) has been reported as absent, possibly extinct (N. Baccetti *in litt.* 2011). Most worryingly, breeding success at many colonies appears to be extremely low and adult survival probabilities across the western Mediterranean have been reported as too low to maintain stable populations (Oppel *et al.* 2011).\*

### Habitat and ecology:

It breeds on rocky coastal and offshore islets, and on the mainland. In the non-breeding season it disperses widely within the Mediterranean and Black Seas, often congregating in large flocks (Snow and Perrins 1998).\*

\*\*\*Syrian Serin- *Serinus syriacus* (VU, Vulnerable) (See page 14)

BirdLife International 2012. *Puffinus yelkouan*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 August 2015.



(c) Mert Gokalp

Class : REPTILIA  
Order : TESTUDINES  
Family : CHELONIIDAE

## Loggerhead *Caretta caretta* (EN, Endangered)

*Caretta caretta* has a distinctive large, yellow-orange head (hence its name), which is extremely broad posteriorly. It has dark brown eyes, a parrot-like beak and extremely powerful yellow jaws. The flippers are proportionately small, and the body length is up to 1.5 m; 0.3-0.5 m in juveniles. Both the carapace and flippers are reddish-brown in colour. The underside of the body is yellow. It commonly weighs up to 180 kg. This species is almost entirely carnivorous using their powerful jaw to crack open crustaceans and shellfish, as

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.

well as feeding on sponges, jellyfish and occasionally algae (Bustard, 1972). Sexual maturity can be reached as late as 37 years old. Females nest 3 - 5 times in one breeding season, returning to breed every couple of years. The female lays her eggs high up on specific tropical beaches. This can lead to predation from native species as well as humans. Hatchlings follow the light of the moon to the ocean. Light pollution from land can confuse the hatchlings diverting them away from the ocean resulting in desiccation, increased risk of predation and, hence, death. The hatchlings and small juveniles are pelagic, drifting amongst rafts of sargassum (brown algae) and flotsam of the open ocean before migrating to shallower coastal waters. Juveniles have small spikes along the spine of the shell.\*\*

### Habitat and ecology:

#### Terrestrial nest sites\*

Loggerhead sea turtles spend most of their lives in the open ocean and in shallow coastal waters. They rarely come ashore, except for the females' brief visits to construct nests and deposit eggs. Hatchling loggerhead turtles live in floating mats of Sargassum algae. Adults and juveniles live along the continental shelf, as well as in shallow coastal estuaries. In the northwestern Atlantic Ocean, age plays a factor in habitat preference. Juveniles are more frequently found in shallow estuarine habitats with limited ocean access compared to non-nesting adults. Loggerheads occupy waters with surface temperatures ranging from 13.3-28.0°C (56-82°F) during non-nesting season. Temperatures from 27-28°C are most suitable for nesting females.

Juvenile loggerheads share the Sargassum habitat with a variety of other organisms. The mats of Sargassum contain as many as 100 different species of animals on which the juveniles feed. Some of the prey, such as ants, flies, aphids, leafhoppers, and beetles, are carried by the wind to these areas. Endemic prey of the mats include barnacles, small crab larvae, fish eggs, and hydrozoan colonies. Marine mammals and commercial fish, such as tuna, dolphin fish, and amberjacks, also inhabit the mats.





(c) Brocken Inaglory

Class : REPTILIA  
Order : TESTUDINES  
Family : CHELONIIDAE

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## Green Turtle *Chelonia mydas* (EN, Endangered)

### Description:

A large marine turtle, reaching up to 1,200 mm in carapace length; largest Egyptian specimen is 1,190 mm. Carapace depressed, rounded, smooth; scutes juxtaposed; posterior edge without indentations; 4 coastal scutes; first marginal scute in contact with first vertebral scute. Head relatively small with a single pair of prefrontals. *C. mydas* differs from all other marine turtles in possessing serrations on the lower jaw, which facilitate grazing on marine grasses. Forelimbs and hind limbs have a single claw each. Males smaller, with longer tails and larger claws. Color of carapace light brown with dark streaks radiating out from a point at the posterior margin of each scute. Dorsal sides of limbs and head brown, each scale edged yellowish. All ventral sides whitish yellow.\*\*

### Habitat and ecology:

Like most sea turtles, green turtles are highly migratory and use a wide range of broadly separated localities and habitats during their lifetimes (for review see Hirth 1997). Upon leaving the nesting beach, it has been hypothesized that hatchlings begin an oceanic phase (Carr 1987), perhaps floating passively in major current systems (gyres) that serve as open-ocean developmental grounds (Carr and Meylan 1980, Witham 1991). After a number of years in the oceanic zone, these turtles recruit to neritic developmental areas rich in seagrass and/or marine algae where they forage and grow until maturity (Musick and Limpus 1997). Upon attaining sexual maturity green turtles commence breeding migrations between foraging grounds and nesting areas that are undertaken every few years (Hirth 1997). Migrations are carried out by both males and females and may traverse oceanic zones, often spanning thousands of kilometers (Carr 1986, Mortimer and Portier 1989). During non-breeding periods adults reside at coastal neritic feeding areas that sometimes coincide with juvenile developmental habitats (e.g., Limpus *et al.* 1994, Seminoff *et al.* 2003).\*

Seminoff, J.A. (Southwest Fisheries Science Center, U.S.) 2004. *Chelonia mydas*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 04 August 2015.



(c) Aviad Bar

Class : REPTILIA  
Order : SQUAMATA  
Family : LACERTIDAE

## Schreiber's Fringe-fingered Lizard *Acanthodactylus schreiberi* (EN, Endangered)

### Description:

This species is known from certain coastal areas in the Eastern Mediterranean. It is found in the following places: in coastal areas and riverbeds, but not high mountains in Cyprus; southern Turkey (two coastal records from one site in the Hatay Province); is fragmented range in coastal southern Lebanon (near Sidon and Tyrosin) and was also known from Beirut (although it is possibly extirpated from this site); and a narrow, fragmented coastal strip in Israel. The species might also occur in Egypt, although this requires confirmation.\*

### Habitat and ecology:

It is found on coastal sand dunes (where there are no competing *Acanthodactylus*) or light soil close to the dunes. It can be found in newly created cultivated areas with sandy soil close to sand dune habitat. In many areas, it cannot tolerate disturbance. In Israel it can be found in open orchards with a suitable substrate. The females have a maximum clutch of four eggs.\*

\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*



# Jordan

## Ajloun Forest Reserve

Located in the Ajloun Highlands in the north of Jordan, this beautiful nature reserve consists of 13 km<sup>2</sup> of rolling hill country dominated by open woodlands that are home to a diverse collection of plant and animal species. The rich greenery makes Ajloun a popular spot for picnickers and hikers, especially in the spring, when the reserve is coated in a wide variety of wildflowers.

Ajloun Forest Reserve was established in 1987 to help conserve the important evergreen Oak forest ecosystem. Its trees account for a significant part of Jordan's forested area, which covers only about 1% of the country.

After the reserve establishment, RSCN initiated a captive breeding program aiming to reintroduce the locally extinct Roe Deer in 1988. RSCN has managed to release a number of Roe Deer into the reserve, where they have continued to grow within their natural habitat.



Hiking



Fauna





(c) Mert Gokalp

Class : MAMMALIA  
Order : CETARTIODACTYLA  
Family : BOVIDAE

## Arabian Oryx, White Oryx *Oryx leucoryx* (VU, Vulnerable)

### Description:

The Arabian Oryx (*Oryx leucoryx*) is the only native oryx species outside Africa. It is one of two oryx species that went extinct in the wild (the other being the Scimitar-horned Oryx, *Oryx dammah*). Both sexes have long, slender horns pointed upward and slightly back that are narrower at the base than those of other oryx species. Although this species was extinct in the wild by 1972, since then free-ranging populations have been established in Israel,

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.

Oman, and Saudi Arabia. Arabian Oryx were formerly present throughout the Arabian Peninsula, extending north to Israel, Jordan, Kuwait, Iraq, Syria, and Sinai. Poaching and overhunting in Oman eliminated the last wild individuals. Fortunately, captive breeding efforts had begun in the 1950s and reintroduction efforts began in the early 1980s and are ongoing. The world captive population is around 6,000 to 7,000, but the re-introduced free-ranging populations include only around 250 mature individuals.\*\*

### Habitat and ecology:

Inhabits sandy and stony deserts.\*

The diets of the Arabian oryx consist mainly of grasses, but they will eat a large variety of vegetation, include trees, buds, herbs, fruit, tubers and roots. Herds of Arabian oryx follow infrequent rains to eat the new plants that grow afterward. They can go several weeks without water. Research in Oman has found grasses of the genus *Stipagrostis* are primarily taken; flowers from *Stipagrostis* plants appeared highest in crude protein and water, while leaves seemed a better food source with other vegetation.

### Behavioral ecology.

When the oryx is not wandering its habitat or eating, it digs shallow depressions in soft ground under shrubs or trees for resting. They are able to detect rainfall from a distance and follow in the direction of fresh plant growth. The number of individuals in herd can vary greatly (up to 100 have been reported occasionally), but the average is 10 or fewer individuals. Bachelor herds do not occur, and single territorial males are rare. Herds establish a straightforward hierarchy that involves all females and males above the age of about seven months. Arabian oryx tend to maintain visual contact with other herd members, subordinate males taking positions between the main body of the herd and the outlying females. If separated, males will search areas where the herd last visited, settling into a solitary existence until the herd's return. Where water and grazing conditions permit, male oryx establish territories. Bachelor males are solitary. A dominance hierarchy is created within the herd by posturing displays which avoid the danger of serious injury their long, sharp horns could potentially inflict. Males and females use their horns to defend the sparse territorial resources against interlopers.



(c) Rennett Stowe CN

**Class : MAMMALIA**  
**Order : CETARTIODACTYLA**  
**Family : BOVIDAE**

This species is also found in the Mujib Biosphere Reserve in Jordan

## **Nubian Ibex** ***Capra nubiana* (VU, Vulnerable)**

Nubian ibex reside in single sex herds of up to 20, with offspring remaining with their maternal herd for their first three years. Mating occurs during the late summer months, especially October, when the strongest males fight and compete for the right to breed by pushing against each other with their horns. Gestation lasts about five months and the majority of young are born in March. A litter size of one is usual, but twins and, very rarely, triplets occur. Sexual maturity is reached at two to three years, and offspring then leave their natal herd. Individuals can live up to 17 years. This diurnal species is active during the day and rests by night. The light, shiny coat is thought to help reflect incoming solar radiation, which allows the animal to remain active throughout the day, even during hot summer afternoons. The Nubian ibex is extremely agile, often maneuvering down steep, precipitous terrain to graze on grasses and leaves during the day, and later returning to the cliffs at night. The main predators of the ibex are leopards, eagles and bearded vultures. When threatened, individuals will rise up on their very strong hind legs and point their powerful-looking horns towards their predator. \*\*

### **Habitat and ecology:**

Nubian Ibex occur in rocky, desert mountains with steep slopes and hills (which provide vital escape routes), and associated plateaus, canyons and wadis. They consume a wide array of herbaceous and woody plants. Nubian ibexes stand around 65–75 cm (2.1–2.6 ft) tall at the shoulder and weigh around 50 kilograms (110 lb). Nubian ibexes are a light tan color, with a white underbelly, in males there is also a dark brown stripe down the back. Nubian ibexes have long thin horns which extend up and then backwards and down. In males these reach around a metre in length while in females they are much smaller (around 30 cm or 12 in). Nubian ibexes live in rough dry mountainous terrain where they eat mainly grasses and leaves and are preyed upon by leopards, eagles and bearded vultures. Nubian ibexes live in herds composed solely of males or females. They are diurnal, meaning they are active during the day and rest during the night. On 16 March 1959, the British established the Yob Wildlife Reserve in northern Eritrea specifically to protect significant populations of Nubian ibex in the area.

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

Alkon, P.U., Harding, L., Jdeidi, T., Masseti, M., Nader, I., de Smet, K., Cuzin, F. & Saltz, D. 2008. *Capra nubiana*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 05 August 2015.



(c) RSCN

Class : AVES  
Order : OTIDIFORMES  
Family : OTIDIDAE

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## **African Houbara, African Houbara Bustard *Chlamydotis undulata* (VU, Vulnerable)**

### **Description:**

A striking bird resembling a turkey in shape, the houbara bustard is at its most magnificent during the courtship display. It is a slender bird, with a tuft of hairs in the centre of the crown, and long plumes of feathers drooping over the neck, the uppermost feathers being black while the lower ones are white with black tips [2]. The body is pale sandy-buff in colour, with darker brown lines and mottling, while the underside is white [2]. Large areas of black and brown occur on the flight feathers and the long, square tail is sandy-chestnut and patterned with four distinct blue-black bars [2]. Male houbara bustards are slightly larger than females [2]. Source: Arkive

### **Habitat and ecology:**

It inhabits sandy and stony semi-desert and is specialised to arid conditions where trees are absent and both shrub cover and herb layer are sparse (Collar 1979, Goriup 1997, Snow and Perrins 1998, Marti and del Moral 2003). It feeds on invertebrates, small vertebrates and green shoots, and typically lays 2-4 eggs in a scrape on the ground. Eggs and young are susceptible to ground predators. North African populations may be sedentary or partially migratory, moving relatively short distances to find recent plant growth (Snow and Perrins 1998).

Males attract their mates with an extravagant courtship display which they perform at the same site each year. The display begins with a period of strutting and culminates with the male retracting his head within an ornamental shield of erected neck feathers and then running at speed in either a straight or curved line. The display is often accompanied by a series of subsonic booming calls (Gaucher *et al.* 1996).\*





(c) Michael Gabler

Class : AVES  
Order : FALCONIFORMES  
Family : FALCONIDAE

## Saker Falcon, Saker *Falco cherrug* (EN, Endangered)

As the breeding season commences in spring, males begin to perform spectacular aerial displays as a form of courtship ritual to attract females, calling loudly as they soar over their territories. Saker falcons are generally two to three years old before they begin to breed, after which one brood of two to six eggs will be produced annually by the female. Chicks are able to fly after 45 to 50 days, but remain dependant on their parents for food for at least another 30 to 45 days, during which time they stay within the nesting territory.

The saker falcon can be both highly agile and extremely fast as it hunts close to the ground <sup>[6]</sup>, capable of diving for prey at 200 miles per hour. Prey consists largely of mid-sized mammals such as ground squirrels, voles, gerbils, jerboas, stoats and hares. At other times, and particularly near water, ground-dwelling and aerial birds such as pheasants, oriental honey-buzzards, quail, ducks, owls, thrushes, larks and songbirds form a significant proportion of the diet. The saker falcon is a ferocious hunter and frequently attacks prey larger than itself. (source:arkive)

### Habitat and ecology:

It is physically adapted to hunting close to the ground in open terrain, combining rapid acceleration with high manoeuvrability, thus specialising on mid-sized diurnal terrestrial rodents (especially ground squirrels *Citellus*) of open grassy landscapes such as desert edge, semi-desert, steppes and arid montane areas; in some areas, particularly near water, it switches to birds as key prey, and has recently substituted domestic pigeons for rodents in parts of Europe (Baumgart 1991, Snow and Perrins 1998). It uses copses or cliffs for nest sites (sometimes even the ground), occupying the old nests of other birds (Baumgart 1991, Snow and Perrins 1998). Clutch size varies from two to six, with means from 3.2-3.9 in different circumstances (Baumgart 1991, Snow and Perrins 1998). Breeding success varies with year (especially in areas where rodents cycle) (Baumgart 1991, Snow and Perrins 1998). The species usually occurs singly or in pairs (Ferguson-Lees and Christie 2001). Birds are sedentary, part-migratory or fully migratory, largely depending on the extent to which food supply in breeding areas disappears in winter (Baumgart 1991, Snow and Perrins 1998). Migrant birds winter in East Africa, southern Europe and southern Asia, and generally leave their breeding grounds in September and October, returning between February and May (del Hoyo *et al.* 1994).\*

\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.



# Jordan

## Dana Biosphere Reserve

Spanning three climate zones ranging from the forested Mediterranean to the hottest Sudanian penetration , Dana Biosphere Reserve is home to hundreds of species living within diverse ecosystems and habitats. Yet animals are not the only ones to find Dana's natural resources important . For centuries, foreign empires - especially the Roman and Byzantine-coveted the region for its expensive copper and other mineral deposits. Established in 1993, Dana Biosphere Reserve is Jordan's largest biosphere reserve ,covering 291 km2 of some of the most diverse landscape in Jordan. In 1994, the Royal Society for the Conservation of Nature (RSCN) instituted the first protected area management plan in Jordan here at Dana ,creating an internationally -recognized model for the integration for the conservation with socio- economic development. RSCN has made great strides in the Dana Biosphere Reserve, including the integrated conservation and socio-economic development program ,building rehabilitation , and the creation of Jordan's first heritage village.



Hiking



Activities



Culture



Natural





(c) Mickey Samuni-Blank

Class : REPTILIA  
Order : SQUAMATA  
Family : COLUBRIDAE

## Hoogstraal's cat snake *Telescopus hoogstraali* (EN, Endangered)

### Description:

A medium-sized, fairly slender snake. Largest Egyptian specimen has a total length of 1,021 mm. Tail short, tail / total length = 0.09-0.15; nostril in a partly divided nasal; loreal elongate, entering the eye below a preocular; 7-9 supralabials, third, fourth and fifth enter the eye; eye rather small, iris dark, pupil vertical; 214-223 ventrals, 51-59 paired subcaudals, dorsals smooth, 19 scale rows around mid-body, anal divided (based on 3 Egyptian specimens). Dorsum gray, with about 40 thin, blackish, transverse bands (between neck and vent); head and neck black, both dorsally and ventrally, with fine white and gray specks. Venter lighter gray covered with a wide, longitudinal, blackish band. The dorsal bars become reduced and indistinct in adult animals.\*\*

### Habitat and ecology:

The species is found in desert steppe areas, with between 100 and 150 mm annual precipitation. It generally inhabits rocky hills and sandstone cliffs. It is an egg-laying species.\*

*T. hoogstraali* is found around the Sinai region, in Egypt and the Palestinian territories, as well as Jordan.

In Egypt, it is found in Santa Catarina and Gebel Maghara of northern Sinai Peninsula. It is also known from one city in Jordan, Petra.

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).\*

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

Disi, M., A.M., Werner, Y. & El Din, S.B. 2006. *Telescopus hoogstraali*. The IUCN Red List of Threatened Species. Version 2015.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 05 August 2015.



# Jordan

## Mujib Biosphere Reserve

Archaeologists have identified Wadi Mujib as a human habitation site since the Copper Age (4500-3200 BCE). During biblical times, the Mujib River served as a major geographical and political boundary between the kingdoms of Moab and Ammon. Once a busy commercial area for salt and oil, villagers now depend on farming for their livelihoods. Established in 1985, the Mujib Biosphere Reserve covers an area of 212 km<sup>2</sup> bordering the Dead Sea at lower than 416 meters below sea level, which makes it the lowest reserve on earth. It serves as an internationally-organized staging ground for migratory birds such as white storks and Levant Sparrows.

At least nine species of birds of prey are known to breed in the reserve, including the little Owl and Long-legged Buzzard.

The Mujib Biosphere Reserve is also the national home of the Nubian Ibex, a large mountain goat that was a symbol of the moon god during the reign of the Queen of Sheba. Once on the brink of extinction in the kingdom, the Ibex captive breeding program was initiated by the Royal Society for the Conservation of Nature in 1989 and over 90 Ibex live in the Reserve today.



Hiking



Activities



(c) Ragoorao

Class : AVES  
Order : ACCIPITRIFORMES  
Family : ACCIPITRIDAE

\*\*The IUCN Red List of Threatened Species. Version 2015.2 [www.iucnredlist.org](http://www.iucnredlist.org).

\*\*\*Encyclopedia of Life. Available from <http://www.eol.org>. Accessed 15 Jan 2014.\*

## **Egyptian Vulture** ***Neophron percnopterus* (EN)**

### **Description:**

Small vulture with a very large range, the Egyptian vulture has an unmistakable appearance. Adults have largely white to pale grey plumage, which contrasts markedly with the black flight-feathers and the bold yellow bare skin on the face (del Hoyo, 1994). The long, narrow bill has a yellow base and terminates with a black tip (del Hoyo, 1994) (Clark, 1999). The tail is short and wedge-shaped. The legs may be greyish-white, pink or pale yellow. Two sub-species of the Egyptian vulture are recognised; *Neophron percnopterus ginglymianus* is slightly smaller than *Neophron percnopterus* and has an entirely yellow bill. Juveniles have much darker plumage than the adults (del Hoyo, 1994), and may be grey-brown, brown or blackish-brown (Clark, 1999).\*\*

### **Habitat and ecology:**

Typically nests on ledges or in caves on cliffs (Sarà and Di Vittorio 2003), crags and rocky outcrops, but occasionally also in large trees, buildings (mainly in India), electricity pylons (Naoroji 2006) and exceptionally on the ground (Gangoso and Palacios 2005). Forages in lowland and montane regions over open, often arid, country. Also scavenges at human settlements. Broad diet including carrion, tortoises, organic waste, insects, young vertebrates, eggs and even faeces. Usually solitary, but will congregate at feeding sites, such as rubbish tips, or vulture restaurants (i.e. supplementary feeding stations), and forms roosts of non-breeding birds (Ceballos & Donazar 1990). Performs an energetic display flight with mate. Several resident island populations show genetic isolation. Northern breeders conduct long-distance intercontinental migrations, flying over land and often utilising the narrowest part of the Strait of Gibraltar on their way to Africa (García-Ripollés *et al.* 2010). The species exhibits high site fidelity, particularly in males (Elorriaga *et al.* 2009; García-Ripollés *et al.* 2010).\*



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