



JABAL MOUSSA

The Biodiversity of the Reserve



FOREWORD

Biodiversity has become a popular term on the lips of environmentalists and the public in general. But how many of us **really** know what it means? The word “biodiversity” can be divided into two parts: “bio” which means “life”, and “diversity”. Hence the term describes the **Diversity of Life** itself!

Humans are one species out of the millions identified species that constitute the diversity of life on Earth. The increasing pressures on the environment and loss of biodiversity over the last centuries lead to a worldwide strategy to conserve the few remaining pristine natural habitats through the creation of Protected Areas. Biosphere Reserves are one type of Protected Areas created by UNESCO's International Man and Biosphere program since 1973.

The **Jabal Moussa Biosphere Reserve** is one of these pristine areas of Lebanon designated in 2009. Your journey into discovering some of the 1000 species of fauna and flora that inhabit this reserve is just about to begin! Before you enter the hiking trail, we would like to share with you this small album of species that gives you a flavor of the existing plants and animals. You can expect to see some of these species during your hike, depending on the season, weather, time, among other factors.

Keep this booklet with you as an accompanying guide and have a great hike!

ABOUT THIS BOOKLET

The Association for the Protection of Jabal Moussa (APJM), a not-for-profit and non-governmental organization, has been dedicating its efforts to conserve the biodiversity and cultural heritage of Jabal Moussa since its creation in 2007. Since 2009, several projects funded by different donors have been carried out. One of the latest, the **Biodiversity Assessment and Monitoring in the Jabal Moussa Biosphere Reserve** (BIOM) project, was initiated in 2011 and aimed at assessing and documenting the richness of the mountain's flora and fauna.

This Booklet is one outcome of the BIOM project and was developed thanks to the support of the Spanish Government and UNESCO MAB Secretariat (Paris). We hope to spark your interest to see and experience the biodiversity of Jabal Moussa and to get a better feeling and understanding of why it is so important to preserve it!

The generous contributions collected from this booklet will support the conservation efforts of APJM.

Thank you for your contribution!



PLANTS

pages 4 – 14

There are over 700 wooden and herbal plant species found within the Jabal Moussa Biosphere Reserve, which constitute more than one third of Lebanon's terrestrial plant species. Some of these species have a wide range throughout the Mediterranean (a declared biodiversity hotspot) or the Middle East. On the other hand, there are also plants with a very limited range that does not exceed the borders of the country – 26 species in total. Through its status as a Biosphere Reserve, Jabal Moussa is a shelter for these so-called endemics and other plants that are generally rare or endangered in other sites of Lebanon.

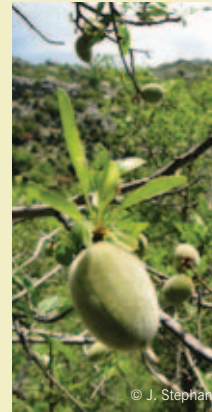
The presence of plants with specific needs, and the agglomeration of plant associations that develop out of similar ecology allow us to categorize sites and to determine the appropriate management method. This shows how important it is to leave land surface in some important conservation zones completely free of human activities, like agriculture, grazing, and other ways of exploitation or construction, in order to enable plants and plant associations to develop appropriately. The Jabal Moussa Biosphere Reserve aims to serve this function. Out of the wide range of the reserve's plants, the following section contains a selection of interesting species, telling you also where and during which months of the year they can be found flowering.



Acer syriacum
Syrian Maple
Érable de Syrie
قيقب سوري

The Syrian Maple is endemic to this region and parts of the Mediterranean. It is typical for the mountainous garrigue and forests. It can be seen around the Jabal Moussa mountain and Chouwan. Especially its pink, wing-shaped seeds, called samara, are eye-catching.

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Amygdalus orientalis
Oriental Almond
Amandier d'Orient
لوز شرقي

The Oriental Almond is a shrub or small tree that is endemic to the region of the Middle East. After its floescence from February till March, it develops its fruits, which are very similar to those of the better known Common Almond. The Oriental Almond grows in Jabal Moussa, mostly in degraded woodland.

© J. Stephan



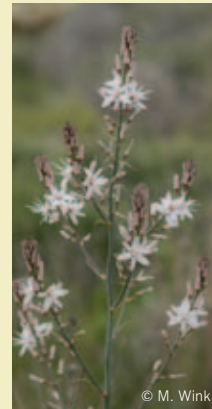
Acer tauricum
Taurus Maple
Érable du Taurus
قيقب طوروس

This other Maple species is also found around Jabal Moussa. Like the Syrian Maple, it is endemic to the region. The shape of its leaves reminds of the leaves of the fig tree, which makes it easier to differentiate between these two maple species found in Jabal Moussa.

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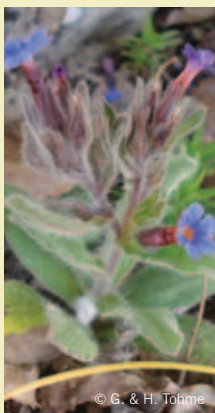
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Asphodelus microcarpus
Common Asphodel
Asphodèle commun
اشراس

The Asphodel is a widespread species and can also be found flowering in Jabal Moussa from January to June. This species is appreciated as a medicinal plant. On the other hand, its presence indicates degraded surfaces of woodland.

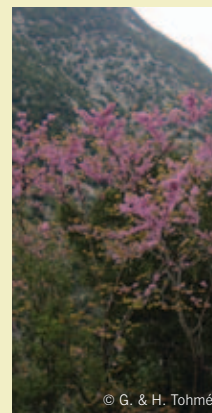
© M. Wink



Alkanna leiocarpa
Smooth-fruited Alkanet
Orcanette à fruits lisses
شنجار أملس

The Smooth-fruited Alkanet can be found flowering near Chahtoul, along Nahr El-Dahab and on Jabal Moussa itself from March till June. It is a rare species endemic to Lebanon, but about to disappear.

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Cercis siliquastrum
Judas Tree
Arbre de Judée
زمزريق

The Judas tree is a small tree that is typically found on high altitudes, and flowers between February and April. Since the leaf flush shortly follows the appearance of flowers, the trees found in Jabal Moussa and down at Nahr El-Dahab are fully covered by pink color in the beginning of their floescence. The distribution of the Judas tree extends all over the south of Europe and the Middle-East.

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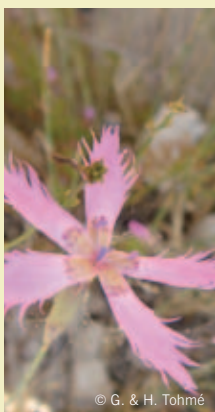
Crataegus monogyna
White Hawthorn
Aubépine fruit rougeâtre
زعرور احادي القلم

The White Hawthorn is a shrub or small tree found in Europe, the Mediterranean and the Middle East and occurs on locations that are exposed to sunlight, preferably on calcareous sites. Therefore, it is a common species in Jabal Moussa where it is especially apparent from March to May, when it bears its white flowers. The Hawthorn is an economically important species due to its medicinal value.



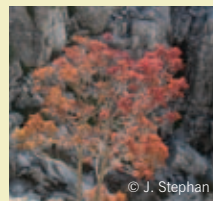
Cyclamen libanoticum
Lebanon Cyclamen
Cyclamen du Liban
بخور مريم لبناني

This species is a rare and endangered endemic plant of Lebanon. The characteristically shaped flower with its purple-whitish color can typically be seen around rocky terrain from February till March, especially down at Nahr El-Dahab, around Chouwan and Aabri.



Dianthus orientalis brachyodontus
Short-toothed Oriental Pink
Oeillet d'Orient à dents courtes
قرنفل النثرق

The Short-toothed Oriental Pink appears in clusters of leaves and stems bearing its pink flowers. These "bouquets" of flowers can be seen during the flowering season from July to November on various sites of Jabal Moussa. Its range extends over the region of the Eastern Mediterranean where it usually sprouts in woodland and on rocky terrain, as it is found in Jabal Moussa.



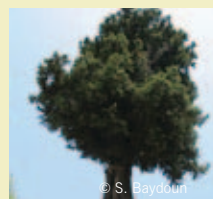
Fraxinus ornus
Manna Ash
Frêne à fleurs
مران زهري

The Manna Ash is a small deciduous tree with its origin in the Eastern Mediterranean. It is economically used, including in some southern European countries where it was introduced. It is found all over Jabal Moussa forest.



Juniperus drupacea
Drupe-bearing Juniper
Genévrier à fruits charnus
دفران

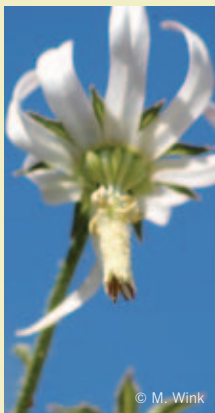
This juniper species is endemic to the region and typical for heights like Jabal Moussa. It represents one of the tallest juniper species. This species is dioecious, which means it bears either exclusively male or female flowers. The fruit-like cones are edible and the plant is of medicinal value. The local human population also appreciates it, as the wood is useful for carpentry and as timber.



Malus trilobata
Three-lobed Apple
Pommier trilobé
تفاح بري

The regional apple species is called the Three-lobed Apple because of its leaves' shape. It flowers from May to June and has white bunches of flowers. It occurs typically in higher altitudes, but in Jabal Moussa it is rarely found. This wild apple species is endemic to Lebanon, but is about to disappear, hence the increased importance of conserving it in the reserve of Jabal Moussa.





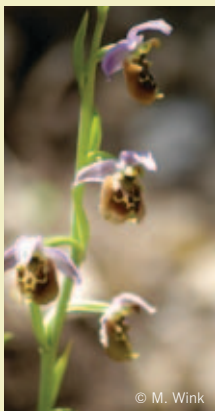
Michauxia campanuloides
Rough-leaved Michauxia
Michauxie fausse-campanule
مشكسية جريسبية

The Rough-leaved Michauxia belongs to the so-called hapaxanth plants. It might live for several years, during which it develops a higher stem than most herbaceous plants, but flowers only once in its life-time from May to August. It is a common plant, but is only native in the region of the Eastern Mediterranean. The rocky terrain in Jabal Moussa offers this species sites where it typically occurs.



Origanum libanoticum
Lebanon Marjoram
Origan du Liban
زعر لبنان

The Lebanon Marjoram is an economically important plant because of its medicinal usage. It is an endemic plant of Lebanon, but a common species at the same time. The plant flowers from March to September and can be found in the woodland of Jabal Moussa.



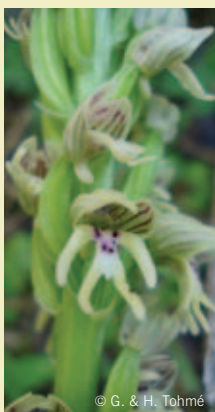
Ophrys fuciflora
Drone Ophrys
Ophrys frelon
حاجبية الزنبور

The flowers of this plant appear in the shape and colors of a bumble-bee and also imitate a pheromone that attracts these insects for both pollination and pollen uptake. The Drone Ophrys is widespread and ranges over parts of Europe and the Mediterranean, but is about to disappear in Lebanon. It occurs in the woodlands of Jabal Moussa and can only be seen flowering from April to June.



Ornithogalum libanoticum
Lebanon Star-of-Bethlehem
Ornithogale du Liban
صاصل لبناني

Lebanon Star-of-Bethlehem is a small herbal plant with a star-shaped white flower. It can be found on Jabal Moussa, typically on rocky ground, and has a flowering season from April to May. It belongs to the endemic plants of Lebanon.



Orchis punctulata galilaea
Galilean Orchid
Orchis de Galilée
سحلب الجليل

The Galilean Orchid is a subspecies of the Small-dotted Orchid, a species with a wide range, exceeding the Middle Eastern region. The Galilean Orchid, however, is endemic to Lebanon and Palestine. It is typically part of the ground vegetation in pine forests. The interesting shape of its flowers can be seen from March to April. Like many orchid species, it is a threatened plant in this region.



Ostrya carpinifolia
Hop-Hornbeam
Charme Houblon
مران

The name of this tree species originates from the similarity of its fruits' shape and arrangement with the buds of the hop plant. These fruits can be seen after the flowering season from March to April. It is associated with the Manna Ash and typical for heights like on Jabal Moussa. Its wider distribution range extends from parts of Southern Europe and the Mediterranean, to Anatolia and Lebanon.





Paeonia kesrouanensis

Kesrouan Peony

Pivoine du Kesrouan

ودح كسروان

This flower is named after the area of Kesrouan in Lebanon, which refers to the fact that it was first found there. It is endemic to the region, including parts of Turkey, but is about to disappear in Lebanon. The species can be found in woodlands and flowers from March to April. In the Jabal Moussa Biosphere Reserve it can be seen above Chahtoul and near Nahr El-Dahab.

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Pentapera sicula libanotica

Lebanese Pentapera

Pentapère du Liban

خلنج لبنان

The Lebanese Pentapera is one of Lebanon's rare and threatened endemic plant species that are found in Jabal Moussa. It typically occurs as small shrubs on calcareous cliffs, and in the Jabal Moussa Biosphere Reserve it can especially be seen along Nahr Ibrahim during its long flowering season from December to June.

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Pinus brutia

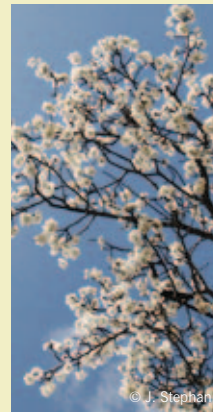
Calabrian Pine

Pin de Calabre

صنوبر بري

The Calabrian Pine is a pine species native to the Eastern Mediterranean and Middle East. Unlike the Umbrella Pine, its seeds are not edible. In Lebanon, the altitudes of its occurrence range from sea level up to 1,700 meters, therefore it is also found in Jabal Moussa, mainly in Aabri.

© J. Stephan



Prunus ursina

Bear Plum

Prunier des ours

خوخ الدب

This is a relative of the Almond with similar habitus and white flowers. After the flowering period from March to May, it develops its yellowish fruits, which are edible, but could contain high amounts of toxic hydrogen cyanide. The Bear Plum occurs in Turkey and the Eastern Mediterranean, just like in Jabal Moussa.

© J. Stephan



Pyrus syriaca

Syrian Pear

Poirier de Syrie

جُاص بري

The Syrian Pear flowers from February till May and occurs on dry and sunny slopes of Jabal Moussa and on sites along Nahr Ibrahim. It is endemic to the region covering Lebanon and Syria where it is generally typical for heights. It is an economically important plant for local human populations.

© Ch. Dereix



© Ch. Dereix



Quercus calliprinos

Kermes Oak

Chene Vêrt

سندبان

This oak species is common in Jabal Moussa and can be found on sites all over the mountain and down at Nahr Ibrahim. In other parts of the Mediterranean it is more common in the form of smaller shrubs. Unlike other oaks, this kind is evergreen and keeps its foliage during the cold season, and is therefore part of the remaining greenery on the mountain in winter, just like the coniferous species.

© J. Stephan



© J. Stephan



Quercus cerris pseudocerris

Turkey Oak

Chêne chevelu

عزر

Unlike other oaks, the Turkey Oak is rare in Lebanon. In addition, this subspecies of the Turkey Oak is endemic to the Eastern Mediterranean region. It occurs in association with the Manna Ash and the Hop-Hornbeam on the calcareous soil of dry slopes, and is typically found in higher altitudes.

© J. Stephan



Quercus infectoria

Cyprus Oak

Chêne tinctorial

ملول

The Cyprus Oak is another oak species that is typical for the Eastern Mediterranean region. It grows in the form of shrubs or small trees in altitudes ranging between 500 and 1,600 meters, similar to the altitude range of Jabal Moussa.

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© J. Stephan



Rhododendron ponticum brachycarpum

Short-fruit Rhododendron

Rhododendron à fruits courts

البقيل

The Short-fruit Rhododendron is a shrub covered with purple and whitish flowers from May to June. These flowers make it popular as an ornamental plant. It is one of the wooden plants that are threatened with decline, which is even more severe regarding the fact that it is an endemic species of Lebanon. As a species that is typical for heights, it occurs in Jabal Moussa on several sites.

© M. Wink



Rosularia kesrouanensis

Kesrouan Rosularia

Rosulaire du Kesrouan

وردية كسروان

This rare plant is endemic to Lebanon, but about to disappear. It can be seen on the mountain during its flowering season from May to June. The Kesrouan Rosularia is another example of plants that are typically found in heights like in Jabal Moussa.

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Salvia fruticosa libanotica

Shrubby Sage

Sauge ligneuse du Liban

قصعين لبنان

This subspecies of the Shrubby Sage flowers from January till July. In order to observe it, it is recommended to visit the area of Mchati village and the Nahr Ibrahim riverside. Besides being endemic to Lebanon, the Shrubby Sage is one of the traditionally used medicinal plants of the country and is therefore of high economic value.

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Salvia peyronii

Peyron's Sage

Sauge de Peyron

قويسة بيرون

This endemic salvia species was discovered in the 19th century by the French botanist Peyron. In the last century it was declared as extinct due to the fact that it was untraceable on further surveys. It was rediscovered in Jabal Moussa during a flora assessment conducted between 2010 and 2011. Nevertheless, the Peyron's Sage remains rare and endangered.

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Spartium junceum

Spanish Broom

Genêt d'Espagne

وزال

Due to rapid growth, this plant is widespread in Lebanon and throughout the Mediterranean, and occurs especially in degraded woodland. The name emerges from its shrubby appearance after the fall of its leaves. The Spanish Broom flowers from March to June and is found on various sites in Jabal Moussa. The leaves are poisonous, but were previously used as medicine (e.g. as emetic) when applied in small dose.



Styrax officinalis

Storax

Aliboufier officinal

حوز

The Storax is a shrubby plant that bears its white flowers from March to May. The resin of this small tree that is endemic to the Eastern Mediterranean region was originally used for the production of incense before it was replaced by other species' resins. Another important use was common in folk medicine where it was applied for a number of serious diseases.



Vicia narbonensis libani

Lebanese Vetch

Vesce de Narbonne

بيقية لبنان

The Lebanese Vetch is endemic to Lebanon, and can be found flowering in Jabal Moussa from February till April. It is a subspecies of the Narbonne Vetch, a Mediterranean plant named after the French city Narbonne, which can serve as a medicinal plant. Its legume can also be used as food for humans and animals.



REPTILES & AMPHIBIANS

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Jabal Moussa hosts a range of 24 reptile species of which 20 are of high conservation value. Amphibians in the reserve of Jabal Moussa count 6 out of 7 species, all of which are regionally endangered. The threats are diverse, but are basically due to habitat loss through human activities, road kills, poisoning and pesticides. Direct persecution by humans out of fear of actual poisonous species – or of species that are wrongly perceived as poisonous – has a negative impact on the health of populations as well. The maintenance of a reserve offering adequate habitats for both amphibian and reptile species, as well as raising awareness about the real danger and how to avoid harmful incidents, are important to preserve these vulnerable species.

Attempts to discover and watch reptiles and amphibians on hikes through the Jabal Moussa Biosphere Reserve have to be made during the warm season, since the poikilothermal species (an organism whose internal temperature varies considerably) of these groups are hidden at places where they can hibernate during winter. While amphibians are generally more likely to be found in damp or even wet microclimates, most reptiles prefer sunny sites with rocky underground that absorbs the energy of the sun and provides a warm and dry environment



Bufo bufo
Common Toad
Crapaud commun
الضفدع

This amphibian is a rare and threatened species in Lebanon despite its wide distribution from Europe to the Middle East. Toads feed on a range of small animals and prefer habitats, which are damp and covered by vegetation, and also provide water expanses for reproduction. Therefore, this species is not found in the Jabal Moussa forest itself, but around the villages in vicinity of the rivers Nahr El-Dahab and Nahr Ibrahim out of its need for water sources.



© S. Hraoui-Bloquet

Bufo viridis
Green Toad
Crapaud vert
الضفدع الأخضر

The Green Toad is also widespread in Lebanon, even though declining in the region. This is partly due to the persecution by humans. Living in forests, scrubland and grassland like in Jabal Moussa, but also depending on the presence of water ecosystems, or at least minor water expanses, it is most likely to be found near the old houses and wells.



© S. Hraoui-Bloquet

Chamaeleo chamaeleon
recticrista
Common Chameleon
Caméléon commun
الحرباية

The Common Chameleon is well-known because of its ability to change its color and to move its eyes separately. This reptile is a globally threatened species, which also applies for Lebanon, even though it is widespread here. This is partly due to persecution by the local human population and the use of pesticides in the cultivation of fruit trees which serve the chameleon as habitat since it partly feeds on fruits.



© R. Sadek

Daboia palaestinae
Palestine Viper
Vipère de Palestine
أفعى عقد الجوز

The Palestine Viper generally occurs in the countries of the Middle East. Even though widespread in Lebanon, this species is endangered nationally and in other areas within its range. As a viper, it is a poisonous and dangerous snake, and therefore persecuted by the local human population. Active at night, it hunts rodents in scrubland, around buildings and on agricultural land, and is therefore contributing to the regulation of these potential pests.



© R. Sadek



Natrix tessellata
Dice Snake
 Couleuvre tessellée
 ثعبان الماء

Even though the Dice Snake is not poisonous, the local human population tends to hunt and diminish its population. It is associated with water expanses and feeds on frogs, toads and fish. In Jabal Moussa, the Dice Snake is typically found in vicinity of the old houses and wells.



© S. Hraoui-Bloquet

Hierophis jugularis
asianus
Large Whip Snake
 Serpent fouet
 الحنش الأسود

The Large Whip Snake dwells mainly in dry lowland mountain areas. The rocky terrain and scrubland in Jabal Moussa is a suitable habitat. As a non-poisonous snake, it hunts small animals during the day and kills its prey through strangling. Like the other snake species here, it is widespread but declining in the region. Again, this is due to persecution by humans.



© S. Hraoui-Bloquet

Laudakia stellio stellio
Roughtail Rock Agama
 Stellion commun
 الحردون

The Agama is a lizard which is widespread in Lebanon and the whole region. Unfortunately it is hunted by the local human population and often victim of the use of pesticides in cultivation and on plantations. As many lizards it is most likely to be found around rocky terrain, feeding on different kinds of smaller animals.



© G. Ramadan-Jaradi

Ophisops elegans
Snake-eyed Lizard
 Ophisops élégant
 ثعبانية العين

This lizard was named Snake-eyed Lizard due to the fact that it does not possess eyelids, but a transparent layer of skin like snakes. It is another example of a widespread but declining species that is affected by pesticides used in agriculture. In Jabal Moussa, it is typical to be seen on dolomite rocks, since it prefers clearings in woods and sandy or rocky surfaces as habitat. Its preferred preys are invertebrate animals.



© G. Ramadan-Jaradi



© T.E.R.R.E

REPTILES AND AMPHIBIANS

Salamandra infraimmaculata
infraimmaculata
Fire Salamander
Salamandre du Proche-Orient
عروسة الماء

The Fire Salamander dwells damp forestland on lower mountains. In the area of Jabal Moussa it is most likely to be found along the rivers Nahr El-Dahab and Nahr Ibrahim, and around water sources nearby the villages. It can be seen during rainy days, even though it hunts its invertebrate prey at night and hides during the day.



Trachylepis vittata
Bridled Mabuya
Scinque vif
السقنقور الجبوي

This species is widespread and especially common in Lebanon, as well as in Jabal Moussa. It prefers sandy and rocky underground. The Bridled Mabuya feeds on insects, which makes the vicinity of water expanses beneficial for its habitat.



MAMMALS

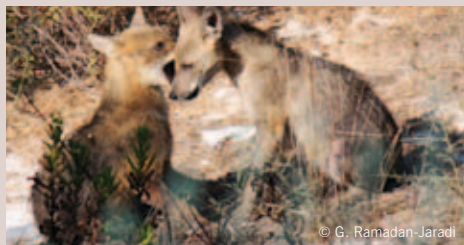
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The Jabal Moussa Biosphere Reserve constitutes shelter for a range of mammals that are otherwise and elsewhere threatened. Certain species found here have disappeared in most other parts of the country or even Middle Eastern region. Therefore, their presence in the reserve is a sign of hope that, in future, these animals might still appear or re-appear in more remote areas of Lebanon. Other species on the other hand, are actually very well-adapted to coexist with humans and to deal with the impact of their activities on the environment. This adaptation out of their specific ecology even renders them to makes them be perceived as pests in regions where the balance between predators and their prey is disturbed. This is the case in many areas, affecting human livelihood, other species' population and even the natural regeneration of forests and woodlands. However, it has been shown that the balance between species within the Jabal Moussa Biosphere Reserve is more intact than in other areas of Lebanon. The species presented in the following pages were captured by camera traps installed in the reserve. For a clearer and more detailed impression of the animals' appearance, pictures of individuals that can be seen in a local Educational Center for Wildlife Conservation are illustrated next to those that were actually taken in the Jabal Moussa Biosphere Reserve.



Canis aureus syriacus
Jackal
Chacal
ابن أوى

The Jackal belongs to the same family is a close relative of the Wolf, but slightly smaller and slimmer. It shows similar howling behavior and lives in groups. Jackals are nocturnal omnivores that can also feed on domestic waste. This might contribute to the fact that the Jackal is generally common in Lebanon, even though rare in Jabal Moussa. Their usually preferred habitats are forests or caves in lower altitudes.



Erinaceus concolor
Hedgehog
Herisson
ككبكاب الشوك

The Hedgehog is a primarily insectivore and nocturnal species, hiding in self-built nests during the day. Dense quills serve as protection against predators, but cannot prevent all those road kills and poisonings through pesticides which constitute a permanent threat to this endangered species. Luckily, the habitat can vary from urban areas, to agricultural land and to woodlands where it serves the important ecological function of regulating pests. In the Jabal Moussa Biosphere Reserve it was mostly seen in the forest of Qehmez and above the cross below the mountain's peak.



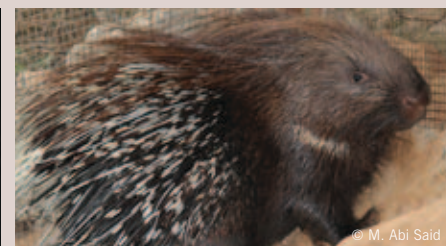
Canis lupus pallipes
Wolf
Loup
الذئب

The Wolf is a species that chooses primarily remote areas as its habitat. These include forests and scrubland like in Jabal Moussa where it can hunt and scavenge during the night. Its presence here depends on the availability of prey, a factor that makes wolves descend from higher altitudes in the cold season. This predator has an important ecological role for the balance of species within the ecosystem. In Lebanon it is highly endangered, partly because of competing with humans for livestock, which resulted in persecution and extinction in most areas.



Hystrix indica indica
Porcupine
Porc-épic
النيص

The Porcupine is another mammal wearing quills for protection, but unlike the Hedgehog it is member of the rodent family and exclusively feeding on plant bulbs, acorns and vegetables during the night. Due to this fact, it is even considered as a pest for agriculture in overpopulated areas. In JMBR they are found all over the reserve and in good population size. Crevices and holes in the rocky terrain within oak forests provide shelter during the day.





Felis silvestris tristrami
Wild Cat
 Chat sauvage
 الهر البري

It is the wild type of all those domestic breeds that are kept by humans as pet cats. The fact that they constitute one single species allows cross-breeding between the Wild Cat and the domesticated breeds. This results in hybrid offspring and a decline of the wild type. At night, the Wild Cat hunts mainly rodents and birds, which it is capable to catch.



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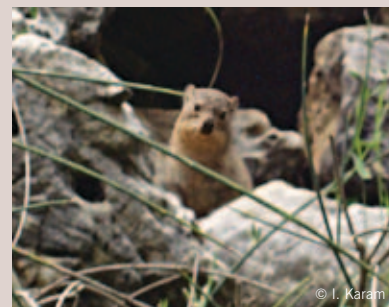
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Procavia capensis syriaca
Rock Hyrax
 Daman
 الطيسون

The Hyrax is endangered due to habitat loss in most parts of Lebanon. The rock formations on the slopes of Jabal Moussa offer this far relative of the elephant shelter in crevices and are therefore a suitable habitat. Living together in social groups, the herbivores are capable of alarming each other in case of danger during their search for food. Strong populations were found above Nahr El-Dahab and Mchati, and also besides El-Berki.



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© I. Karam

Hyaena hyaena syriaca
Striped Hyena
 Hyène
 الضبع

The Striped Hyena is a nocturnal and mostly solitary carnivore with an important ecological function. As a scavenger, it contributes to the decomposition of dead animals instead of hunting living prey, and therefore plays a major role in controlling diseases and for the well being of the reserve. The hyena is a shy animal and common in Jabal Moussa throughout the year. Still, hyenas are unpopular and misconceived as dangerous despite their harmless nature, and therefore persecuted.



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Spalax leucodon
Mole Rat
 Rat-taupe
 الخلد

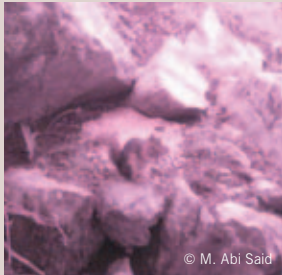
Like the better known Mole, this rodent is blind and lives in self-burrowed tunnels in the underground. It is hardly possible to be seen, and the only apparent trace of this common species in Jabal Moussa, is the little soil hills that indicate the tunnels' courses. The Mole Rat mainly feeds on insects, plant roots and bulbs. These feeding habits make it be both potentially harmful to crops and helpful by regulating plant pests and aerating the soil.



© P. Doumet

Sciurus anomalus syriacus This well-known rodent inhabits forests, where it finds shelter in trees and can feed on large seeds, like acorns and pine seeds. It also helps with the distribution by hoarding its food for winter, enabling uneaten seeds to germinate over longer distances than their size would allow otherwise. In many areas of the country it is endangered due to persecution and habitat loss. But since the Squirrel is very common in Jabal Moussa and mainly active during the day, it is more likely to be seen than other mammals living on the mountain.

Persian Squirrel
Écureuil
السنجاب



© M. Abi Said



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Vulpes vulpes palaestina The Red Fox is very common in Jabal Moussa, in Lebanon and throughout its range. It is well-adapted to changes of its habitat and its nature of being an opportunistic omnivore enables the Fox to live also in urban areas. Mostly at night, the Red Fox is searching for prey and fruits, helping seed dispersal and regulating populations of insects and rodents that are harmful for wild plants and crops. Ground-breeding birds on the other hand, can be threatened if the population of Red Foxes boosts.

Red Fox
Renard
الثعلب



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BIRDS

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In total, there are 137 bird species recorded in the Jabal Moussa Biosphere Reserve, a number that constitutes 34.5% of the species found in Lebanon. Therefore, birds are the largest group of vertebrate fauna species within the reserve. Out of this number and besides resident breeders (80% of Lebanon's breeding species), there are numerous bird species migrating from northern countries of Europe and Central Asia for wintering in this region, as well as passing by during their migration further south. Lebanon constitutes a bottleneck area for these migrating birds, providing an opportunity for resting, sheltering and feeding. However, staying and passing through the region also constitutes a severe threat due to the human population's common passion for bird hunting. A reserve like Jabal Moussa, where bird hunting is banned, allows migratory birds to make it to their wintering destination and provides resident species with shelter and breeding habitats.

The importance of a reserve like Jabal Moussa for birds becomes apparent, considering that a high percentage of the recorded species is endangered in the region. The selection of birds presented in the following part shows species of different status and abundance within the reserve and Lebanon.



Buteo rufinus
Long-Legged Buzzard
 Buse féroce
 عقيب طويل الساق

The long-legged buzzard is recorded to be a resident breeder in Jabal Moussa. However, migrating individuals of populations from northern regions also pass by or stay for the winter season on their route further south. The bird's hunting of small animals takes place in open land, whereas elevated locations like shrubs and trees serve as shelter for breeding. This buzzard species is threatened in Lebanon and regionally.



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Falco tinnunculus
Common Kestrel
 Faucon crécerelle
 العوسق

Besides individuals of this kind of bird of prey coming from temperate regions of Eurasia and passing over Lebanon during their migration or staying during winter, there are also resident breeding Kestrels in the area of Jabal Moussa. The Common Kestrel hunts preferably small rodents, which it tries to spot while waiting on tree branches or hovering in the air. The breeding takes place in rocky terrain or in trees.



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Emberiza cia
Rock Bunting
 Bruant fou
 درسة الصخور

The Rock Bunting is a common resident breeder in Lebanon. Slopes like those around Jabal Moussa, covered with rocks, trees and shrubs, are a suitable habitat for this shy species, since it prefers to breed between rocks. It feeds on small seeds and partially on small insects.



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Lanius nubicus
Masked Shrike
 Pie-grièche masquée
 درب مقنع

Like other shrike species, Masked Shrikes can be seen on the mountain during summer when they breed in the area. The Masked Shrike is common during the time of its presence, and during the migration towards Africa, also shrikes breeding in northern regions can be seen on their way passing over Jabal Moussa. Sitting on trees, these birds are looking for prey, preferably insects.



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Pelecanus onocrotalus
Great White Pelican
 Pélican blanc
 البجع الأبيض

This pelican species can be seen twice on its migration over Lebanon towards the south when escaping from winter in colder northern countries and towards the north when returning to breed. There are isolated and widespread populations in Africa, South-West Europe, and in West and Central-Asia. With its scoop-like lower bill, the pelican is able to catch fish out of the water in both freshwater and marine habitats.



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Pycnonotus xanthopygus
Yellow-vented Bulbul
 Bulbul commun
 البلبيل

Bulbuls are certainly well-known as very active singing birds. Out of their trusting behavior towards humans, they can be held as pets. The Yellow-vented Bulbul is a regional species of this group and occurs from Turkey down to the Arabian Peninsula. Unfortunately its population is declining within the whole region. However, it is a resident breeder in Jabal Moussa up to about 1,100 m asl. where scrubs serve as breeding habitat and small fruits as food source.



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Prinia gracilis
Graceful Prinia
 Prinia gracile
 هارجة رشيفة

This bird is found in areas of the Middle East, where shrubs and grassland occur, and is therefore also common in Lebanon and especially in Jabal Moussa. The dense vegetation provides hideouts for the nesting of this resident breeding and lively bird.



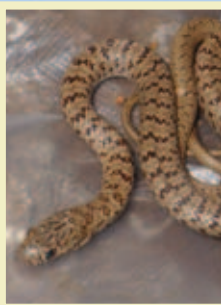
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Sylvia atricapilla
Eurasian Blackcap
 Fauvette à tête noire
 الخوري والشماس (التيان)

Birds of this species occur in Jabal Moussa during the breeding season in summer, but can also be seen during their migration, when populations from further northern countries move to warmer regions or on their return. Some even choose this area for their visits during winter. Therefore, it is likely to see the Eurasian Blackcap in Jabal Moussa throughout the year.



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