

Flora and Fauna of Milos

MILOS



MINING
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Orchid

When **S&B Industrial Minerals S.A.** began, many years ago, its reclamation efforts in the Milos extraction sites, the first piece of information that nature itself provided was that, in order for this effort to succeed, native plant species had to be used.

The native plant species have been adapted to the difficult soil and climate conditions of the island. Therefore, only these species would be able to survive the hard conditions prevailing during the first years in the rehabilitated mines.

In an attempt to reproduce local varieties, S&B established its own nursery specifically for this purpose. This continuous involvement and contact with the native species has built expert knowledge and, in parallel, an emotional relationship with these species, as well as with the whole Milos ecosystem. The present leaflet is an outcome of this endeavor and contains information about the flora and fauna of Milos.

The Flora of Milos

The flora of Milos belongs to the Eumediterranean vegetation zone. Its vegetation, in other words, has been adapted to the characteristically Mediterranean climate prevailing in the area.

The biggest native species on the island of Milos is the **Italian cypress** (*Cupressus sempervirens*). In the past, this must have been widely spread throughout the island. However, continuous logging and land clearing in order to create farms and grazing lands, has restricted its presence in a gully, where it still forms beautiful stands of trees, up to 20 m. high, with a remarkable regeneration.

The **kermes oak** (*Quercus coccifera*), typical species of the Eumediterranean vegetation zone, has been restricted to secluded areas, because of logging, land-clearing through fires and overgrazing, and it rarely forms dense clumps. Its height reaches 10 m. in some sites.



Kermes oak



Phoenicean juniper

Few rainfalls, unequally distributed within the year, characterize this climate. According to the National Meteorological Service data (N.M.S.), the mean annual rain is 404.5 mm, of which 357.1 mm fall from October to March, and 47.4 mm fall from April to September. Consequently, the vegetation on Milos is characterized by plant species that have developed mechanisms to withstand the long-lasting droughts of summer months.

Other conifer species include the **phoenicean juniper** (*Juniperus phoenicea*) and the **Juniperus macrocarpa** appearing in the form of shrubs or small trees up to 10, and rarely 12 m. high. At many sites, they form dense clumps. Large populations of all the above-mentioned arboraceous species are found in western, central and southern Milos, while smaller populations grow in northern and eastern Milos. We should mention here the unusual fact that there are not any self-sown pines (*Pinus sp.*) on the Cyclades Islands at all, and consequently neither on Milos.

Phillyrea latifolia, also a typical Mediterranean species, forms extended stands, mixed with **olive** (*Olea europaea var sylvestris*), **carob tree** (*Ceratonia siliqua*), **phoenicean juniper** (*Juniperus phoenicea*), **almond-leaved pear** (*Pyrus amygdaliformis*), especially on the northern part of Chalakas mountain. However, these stands have also been heavily degraded by continuous logging, overgrazing and fires.

Strawberry tree (*Arbutus unedo*) grows in the more moist sites. It forms dense stands and, in certain locations, it reaches 12 m. in height. In such moist sites, we come across the following shrubs, either in stands or not: **oleander** (*Nerium oleander*), **common myrtle** (*Myrtus communis*) and **chaste tree** (*Vitex agnus-castus*). The most widely spread and typical plant species on the island of Milos is the **mastic tree** (*Pistacia lentiscus*).

On practically all the beaches of the island one comes across the **shrubby orache** (*Atriplex halimus*), a very characteristic bush with blue-green leaves, as well as the common **rock samphire** (*Crithmum maritimum*)².

On some maritime rocks one may also come across some rare species such as **Dianthus fruticosus** and **Convolvulus oleifolius**.

We shall now refer to two categories of plants, characteristic of the island's flora. The first one consists of plants that grow on cliffs and hung downwards. These are the **caper** (*Capparis spinosa*) and the **Ephedra foeminea**. The second category consists of claspers such as the **common smilax** (*Smilax aspera*), the **etruscan honeysuckle** (*Lonicera etrusca*) and the **virgin's bower** (*Clematis cirrhosa*).



Etruscan honeysuckle



Dianthus fruticosus

It grows everywhere, either forming short bushes creeping on the eroded soil, or forming small trees, up to 3 m. high. It also grows under all the above-mentioned plant species, as a kind of understorey vegetation¹.

The plants growing in areas strongly influenced by the sea, are those that can withstand salinity.

Tamarisk (*Tamarix gallica*) is such a species, a small tree which can reach 7 m. in height.

At this point it is worth mentioning the **sea lily** (*Pancratium maritimum*), an attractive species flowering in August. In the past, it was present in all sandy beaches of Milos. The rapid growth of tourism however, has caused it to become almost extinct nowadays. It is one of the most threatened plant species of Milos, as well as of the whole Mediterranean Basin.

Milos was first inhabited some 12.000 years ago and human presence on the island has been constant ever since. Nature has suffered under pressure from intense illegal woodcutting, frequent fires and from the erosion that usually follows such phenomena.

On rocky areas where the soil has been washed away, nothing could grow but phrygic species or brushwood, a type of hardy bush, made to prosper in such hostile environment (very little or no soil at all in combination with prolonged droughts).

Phrygana formations are characterized by their dominant species. On Milos, the most common types of brushwood is the **cistus** (*Cistus creticus*, *Cistus salvifolius*), the **thorny burnet** (*Sarcopoterium spinosum*), **Erica manipuliflora** and the **thyme** (*Coridothymus capitatus*). These plants are always found together with other plants, such as **Genista acanthoclada**, or the **hairy thorny broom** (*Calycotome villosa*), **Rhamnus lycioides**,

Among the brushwood one can see small attractive **bulbous plants**. Some of them flower in autumn, after the first rainfalls, while others flower in spring, adding beautiful brushstrokes of color to the landscape of Milos. Such plants are *Narcissus serotinus*, *Crocus tournefortii*, *Gynandrisis sisyrrinchium*, the **field gladiolus** (*Gladiolus*

Meadows and abandoned fields have an especially rich flora: **Common poppies** (*Papaver rhoeas*), **corn daisies** and **corn marigold** (*Chrysanthemum coronarium* and *Chrysanthemum segetum*), the **spanish oyster plant** (*Scolymus hispanicus*), windflowers like the **crown anemone** (*Anemone coronaria*), the **salsify** (*Tragopogon porrifolius*) and many others. Finally, the **cape sorrel** (*Oxalis pes-caprae*), arrived to Milos



Cistus

Centaurea spinosa, the **aromatic satureia** (*Satureja thymbra*), the **French lavender** (*Lavandula stoechas*), the **three-leaved sage** (*Salvia triloba*), the **jerusalem sage** (*Phlomis fruticosa*), the **wormwood** (*Artemisia absinthium*) and many others.

italicus) and a large variety of **orchid species** (*Ophrys sp.*, *Orchis sp.*, *Serapias sp.*, etc.).

There are also numerous annual **grasses**, such as *Aegilops comosa*, the **winter wild oat** (*Avena sterilis*), *Brachypodium sp.*, *Briza media* and various **legumes**, such as the **vetches** (*Vicia sp.*), **peas** (*Lathyrus sp.*), the **medicks** (*Medicago sp.*), **clovers** (*Trifolium sp.*), and the **sainfoins** (*Onobrychis sp.*).

from South Africa at the beginning of the last century, is well adapted to the local environmental conditions and it is considered as an indigenous species by the local people.

Notes

- 1 Understorey vegetation is the term used to describe low - lying vegetation under 3-4 meters high.
- 2 Other species are the *Otanthus maritimus*, the *Matthiola sinuata*, the *Limonium sinuatum* and the *Eryngium maritimum*.

The Fauna of Milos

A. Mammals

Nowadays, there aren't any large animals in the fauna of the island as a result of human activities.

The largest mammal is the **brown hare** (*Lepus europaeus*), in danger of becoming

Other species that have been recorded include the **eastern hedgehog** (*Erinaceus concolor*), various species of rats and mice, the **black rat** and **house mice** (*Rattus rattus* and *Mus domesticus*), a **bat** species, the **pipistrelle** (*Pipistrellus sp.*) and the **pygmy horseshoe bat** (*Suncus etruscus*).

The total absence of predatory mammals is also due to human activities.

Other birds of prey that one can come across on the island of Milos are the **Bonelli's eagle** (*Hieraeetus fasciatus*), in danger of becoming extinct on account of hunting, the **buzzard** (*Buteo buteo*) and the **kestrel** (*Falco tinnunculus*), a small falcon.



Lizard

Photo: Chloe Adamopoulou, Zoology Museum, National University of Athens

extinct, not on account of excessive hunting, but because of the rabbits released in nature by man which are very competitive and threaten to oust the hare from its natural habitat.

B. Bird fauna

Contrary to the mammals which are so scarce on Milos, the bird fauna is still very rich.

Milos is home to one of the most rare birds of prey, the **Eleonora's falcon** (*Falco eleonora*) which lives and reproduces in the Aegean islands and on Crete.

Finally, among nocturnal predatory birds we can list the **little owl** (*Athene noctua*) and the **barn owl** (*Tyto alba*).

Other birds living permanently on Milos are the **chucar** (*Alectoris chukar*), the **rock dove** (*Columba livia*), the **collared dove** (*Streptopelia decaocto*) and various small species of sparrow such as the **crested lark** (*Galerida cristata*), the **skylark** (*Alauda arvensis*), the **wren** (*Troglodytes troglodytes*), the **house sparrow** (*Passer domesticus*), the **hooded crow** (*Corvus corone cornix*) and the **raven** (*Corvus corax*).

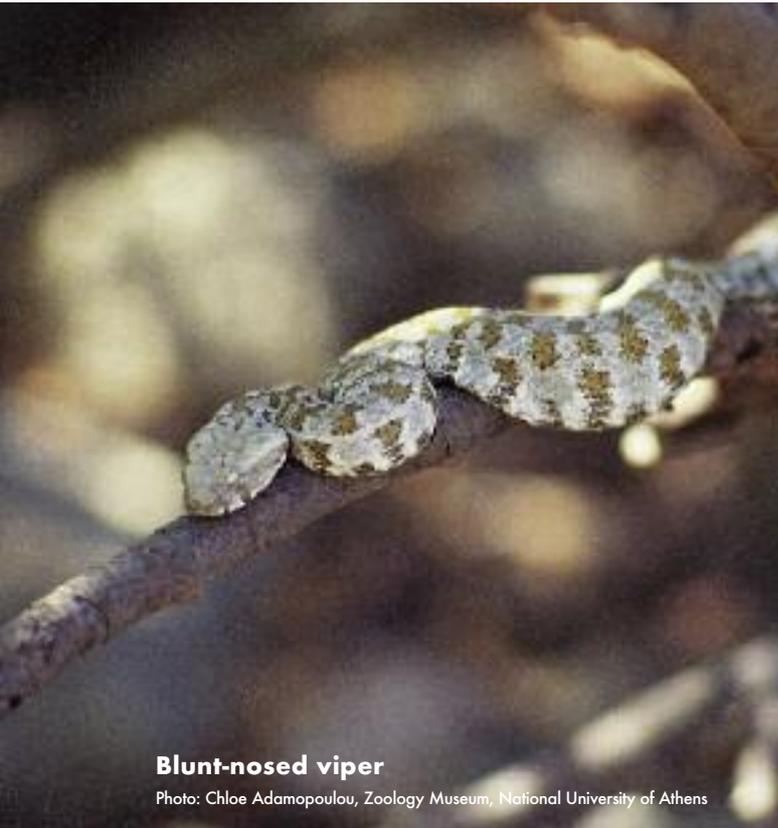
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C. Reptilian fauna

Among sea-birds, the two most common ones are the **herring gull** (*Larus cacchianus*) and the **shag** (*Phalacrocorax aristotelis*). Milos' small wetlands are vital to migratory birds, as they are used by them as rest places in their long trip. Bird watching has recorded a host of both rare and more common species of birds that go through the island in spring and in autumn, while migrating.

The reptilian fauna is both rich and rare. Fresh water springs in two areas of the island, the airport and Saint John Siderianos, are natural habitats for the **Rana ridibunda** frogs throughout the year. There are also two kinds of lizard, the **balkan green lizard** (*Lacerta trilineata*) and the **Milos wall lizard** (*Podarcis milensis*). The latter is endemic and can be found only on Milos, Kimolos, Polyegos, and Antimilos.

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Blunt-nosed viper

Photo: Chloe Adamopoulou, Zoology Museum, National University of Athens



Red Blunt nosed viper

Photo: M. Dimaki

Some of the species worth noting here are the very rare **short-toed eagle** (*Circaetus gallicus*), the **golden eagle** (*Aquila chrysaetus*), enough of the **harriers** (*Circus*) species, most of the **Hérons** species (*Ardeidae*), the **swans**, the **flamingo** (*Phoenicopterus ruber*), many riparian species, and also **woodcocks** (*Scolopax rusticola*), **doves**, **thrushes** (*Turdus*), **shrikes** and many others.

Milos is rich in snakes, another form of reptilian fauna that can be found, the most known being the **blunt-nosed viper** (*Macrovipera schweizeri*), also endemic to the island. Other snakes are the **cat snake** (*Telescopus fallax*), the **grass snake** (*Natrix natrix*) and the **leopard snake** (*Elaphe situla*).

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