ERASMUS PLUS PROGRAM

BIODIVERSITY IN TROODOS GEOPARK

- **KOZAKOU MARIA,**
- **CHRISTOU MARIA,**
- **KALLINAKIS ALEXANDROS**
- **Lyceum of Agios Ioannis, Limassol, Cyprus**
- **3rd meeting of partners – seminar of Students about Geoparks**
- **Varna – Bulgaria**
- **June 2019**

Context

- Type of Forests
  - Pine Forests
  - Ripanian Forests
  - *Golden Oak Shrubland*
  - *Juniper Woodlands*
  - *Cyprus Cedar Forests*
  - *Troodos Serpentinophilous Grasslands*
  - *Troodos Peat Grasslands*
- FLORA OF TROODOS GEOPARK
- Fauna of the area

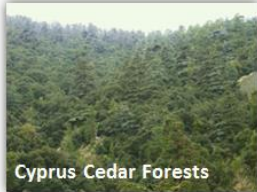# DENSE FORESTS AND UNEXPLORED VEGETATION

Pine Forest
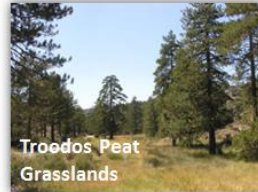
Juniper Woodlands

Troodos Serpentinophilous Grasslands

Golden Oak Shrubland

Cyprus Cedar Forests

Troodos Peat Grasslands

The major part of the Geopark is covered by forests and dense natural vegetation. It is no accident that the area contains the island's most noteworthy forests, including the Adelphi and Papoutsa Forests, the Troodos National Forest Park and the largest part of the Paphos Forest. It is state-owned land for the most part but there are significant privately-owned wooded areas which alternate with cultivated farmland and residential areas, thus creating unique sites of exquisite beauty and high ecological value.

ΓΕΩΠΑΡΚΟ ΤΡΟΟΔΟΥΣ TROODOS GEOPARK

UNESCO
United Nations · Troodos
Educational, Scientific and · UNESCO
Cultural Organization · Global Geopark

Pine Forests

Natural forests with a rich biodiversity, consisting mainly of East Mediterranean pines (Pinus brutia) that form a natural habitat. In the highest parts of Troodos, over 1,100 metres above sea level, we find the black pine (Pinus nigra subsp. pallasiana) which forms natural evergreen forests and which, in turn, are priority habitats (i.e. in danger of disappearing on an EU level).

Riparian Forests

These are natural forests adjacent to rivers and streams, in areas with a slight incline and at altitudes of up to 1,600 metres. Since Troodos includes the largest streams in Cyprus, its riparian forests are the most notable ones, containing species such as the oriental plane tree (Platanus orientalis), the oriental alder (Alnus orientalis), the white willow (Salix alba), the bay laurel (Laurus nobilis), the nerium oleander (Nerium oleander), Tamarisk (Tamarix spp.) and more.

GOLDEN OAK SHRUBLAND

The area contains the largest and most representative Golden Oak (Quercus alnifolia) forests, which form priority habitats across an altitude band ranging from 500-700-1,650 metres.

Juniper Woodlands

In the areas of Papoutsa, Madari, Troodos and the Paphos Forest, unique woodlands have been formed at medium and high altitudes (1,000-1,952 metres) containing various species of juniper, creating different habitats: woodlands with Juniperus excelsa and Juniperus foetidissima, clumps of Juniperus foetidissima and woodlands with Juniperus oxycedrus.

Cyprus Cedar Forests

In the Tripylos area of the Paphos Forest, the world's only forest of the endemic cedar (*Cedrus brevifolia*) is to be found. It has been recognised as a priority habitat and is protected as such.

TROODOS SERPENTINOPHILOUS GRASSLANDS

A natural priority habitat, similar to those of Akamas and the Limassol Forest, is formed in open spaces at an altitude of 1,600-1,900 metres, on the Troodos serpentinophilous grasslands. In essence this is a botanist's paradise, hosting a huge variety of rare, endangered and endemic plants which are found only in this particular habitat and have adapted fully to the particular ecological conditions of the geological substrate.

TROODOS PEAT GRASSLANDS

This natural habitat is extremely rare and in danger of disappearing on a European level. Located in two adjacent areas of the Troodos Natural Forest Park, where depressions are formed and the ground stays moist for most of the year, it contains endangered endemic and other important plant species. At the same time, the peat grasslands are of great scientific value since in them lies the history of the development of every type of vegetation in the Troodos area, a history that remains to a great extent unresearched.

PRICELESS FLORA

- There is no denying that the flora of the Geopark is the richest in Cyprus and, for this reason, the Troodos mountain range is considered one of the most important mountain habitats for plants in the whole of Europe. This rich biodiversity is due to the great variety of habitats that are formed because of the differences of altitude, particular geology, the presence of water and the local terrain.

SERPENTINPHILOUS ENDEMICS OF TROODOS

- The most representative examples of the influence of geology are the serpentinphilous endemics of Troodos, such as *Onosma troodi*, *Acinos troodi*, *Cynoglossum troodi* and *Alyssum troodi* as well as many plants that are only found in igneous rocks, such as *Silene laevigata* and *Rosa chionistrae*, and those that are found in the transitional zone of limestone and ophiolite rocks such as *Silene gemmata* and plants on outcrops of igneous rocks (chasmophytic *vegetation)* such as *Sedum cyprium* and *Sedum microstachyum*.

ENDEMIC PLANTS

Endemic Plants

A/A	ENDEMIC PLANT	A/A	END...
1.	Acinos exiguous	47	Nepe...
2.	Acinos troodi*	48	Odo...
3.	Allium autumnale	49	Onol...
4	Allium cupani subsp. cyprium	50	Onop...
5	Allium cyprium	51	Onos...
6	Allium marathasicum*	52	Ophr...
7	Allium marathasicum*	53	Orch...
8	Allium willeanum	54	Orig...
9	Alyssum troodi*	55	Orig...
10	Anthemis plutonia	56	Orni...
11	Anthemis tricolor	57	Orob...
12	Arabis kennedyae*	58	Papa...
13	Arabis purpurea	59	Petr...
14	Arenaria rhodia subsp. cypria	60	Phlo...
15	Asperula cypria	61	Phlo...
16	Astragalus cyprius	62	Pter...
17	Astragalus echinus subsp. chionistrae*	63	Ptilo...
18	Brachypodium firmifolium*	64	Quer...
19	Bupleurum sintenisii	65	Ranu...
20	Carlina involucrata subsp. cyprica	66	Ranunculus kykkoensis*
21	Carlina pygmaea	67	Rosa chionistrae*
22	Cedrus brevifolia*	68	Rubia laurae

Across the whole area of the Geopark, 92 different endemic plants of Cyprus have been recorded from a total of 143 on the island, i.e. about 64% in an area that represents only 12% of its territory. Of these, 37 are found exclusively in the Geopark and nowhere else in Cyprus or indeed in the world. It is also worth noting that 87 endangered species have been recorded out of 238 mentioned in the *Red Data Book of the Flora of Cyprus*. Equally important is the fact that the percentage of endangered species is low compared to the total number of species and this is the result of conservation measures and the relatively mild human intervention in the broader area.

IMPORTAND ENDEMIC PLANTS

- The enormous importance of the Geopark's flora is indicated by another significant fact: it is home to 10 of the 19 plant species included in Annex 1 (http://www.troodos-geo.org/cgibin/hweb?-A=187&-V=troodos) of the Habitats Directive. But over and above these impressive facts, thanks to its plant wealth, the Geopark is attracting more and more special interest tourists who visit Cyprus mainly to study and get more closely acquainted with its flora.

THE FAUNA OF THE AREA

The recently-discovered endemic species:

- the mouse (Mus cypriacus), is found in certain areas of the park.
- the hare (Lepus europaeus) and the fox (Vulpes vulpes indutus) are found in the habitats of Troodos
- species of bat

Plecotus Kolobatovici

Acomys Nessiotes

Hemiechinus Auritus Dorotheae

THE FAUNA OF THE AREA

- One of the most popular and also one of the most important is the aforementioned cyprus moufflon (ovis gmelini ophion), which lives in the paphos forest and travels as far as the borders of the troodos national forest park.

Ovis Gmelini Ophion

THE FAUNA OF THE AREA

This area also possesses great ornithological value.

The most important species that reside there are:

- the Europe-wide endangered Bonelli's eagle
- the highly endangered griffon vulture
- various other birds of prey including the northern goshawk, the long-legged buzzard and many others.

Aquila Fasciata

Parus Ater Cypriotes

Gyps Fulvus

THE FAUNA OF THE AREA

- Not to forget the reptilians , an important place among them belongs to the endemic species of Cyprus snake (Coluber cypriensis), the endangered watersnake (Natrix natrix)
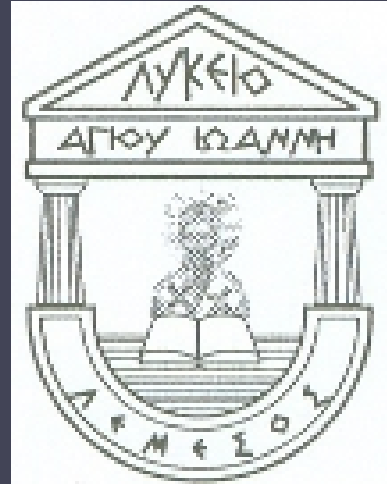

Hierophys Cypriensis

Eumeces Schneiderii

Hyla Savignyi

THANK YOU FOR YOUR ATTENTION

More information's to the webpage of the Geopark

http://www.troodos-geo.org/cgibin/hweb?-V=troodos&_FCATEGORY=102002&_FLANGUAGE=en&-dtroodos.html&-b=20&-Sr&_VSECTION=1020&_VLANGUAGE=en&_VCATEGORY=102002