

Skyros: a very “dry grassland” Greek island

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The article introduces the most important natural elements of Skyros, an island of the Northern Sporades (Greece). Moreover, it emphasizes grazing activity as the major factor that shapes biotic elements and it presents preliminary results of a study, conducted in the framework of a LIFE-Nature project (LIFE09NAT/GR/000323 “Demonstration of the Biodiversity Action Planning approach, to benefit local biodiversity on an Aegean island, Skyros”), concerning the regulation of the intensified livestock husbandry.

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Sculpturing Quercus coccifera. Photo: M. Vrahnakis

Skyros is a small island (20,700 ha, 2500 inhab.) of the Northern Sporades assemblage in the northwest Aegean sea, Greece. It is located some 30 km away from Kymi, the eastern port of Evia island, and some 100 km at the south-eastern end of the well known island of Skiathos. The bedrock is dominated by limestone, metamorphic rocks and alluvial deposits in the middle. The climate is Mediterranean sub-humid (a total of 800 mm of rain in annual basis) with a xerothermic period lasting from April till August.

The vegetation of the island of Skyros is affected by climate, as well as anthropogenic influences like overgrazing, wood overharvesting, man-made fires and wildfires. The vegetation setting of Skyros is characterized by a) chasmophytic, b) high maquis, c) plant communities between maquis and phrygana, d) phrygana, e) pseudomaquis of *Quercus coccifera*, f) maquis of *Oleo-Ceratonion*, assemblages of g) *Quercus ilex* or h) *Acer sempervirens*, i) alepo pine forest, j) fruit-bearing

and olive orchards. It is believed that *Pinus halepensis* was favoured over *Quercus ithaburensis* for wood exploiting purposes. Phrygana is the dominant vegetation type of the south part of the island with *Sarcopoterium spinosum*, *Euphorbia acanthothamnus*, *Genista acanthoclados*, *Thymus capitatus*, *Calicotome villosa* dominating in higher elevations and *Euphorbia dendroides* at the lowest.

Skyros has an exceptional flora of Mediterranean elements and a significant percentage of sub-Mediterranean and pure east-Mediterranean taxa. More than the 20 of the 60 local and Greek endemic plant taxa from the flora of Northern Sporades are found in Skyros, and its adjacent islet of Skyropoula. More than 10 taxa are mentioned by IUCN and Red Data Book. Some of them, like *Aethionema retsina* and *Scorzonera scyria* are

local endemics, while others are also present on a small number of other Aegean islands (like *Campanula merxmülleri* in Psara island).

The majority of the floristic elements of Skyros are directly or indirectly affected by grazing conditions and practices. On the one hand, negative impacts include trampling (e.g. *Aubrieta scyria* which is adapted in roadside habitats where sheep and goats are passing), grazing inside forests of *Quercus coccifera* or *Acer sempervirens* where *Galanthus ikariae* subsp. *snogerupii* grows, or goat grazing in steep rocky slopes where plants of rare species, like *Aethionema retsina* and *Scorzonera scyria*, are found. On the other hand, decreasing grazing activity may result in the encroachment of woody plants (scrub, phrygana) and displacement of weak competitors. In addition severe environmental degradation (soil denudation and erosion, habitat loss and degradation, and a genetic erosion of local endemic, critically endangered wild pony - *Equus caballus* subsp. *skyriano* – population of about 150 individuals) is due to overgrazing.

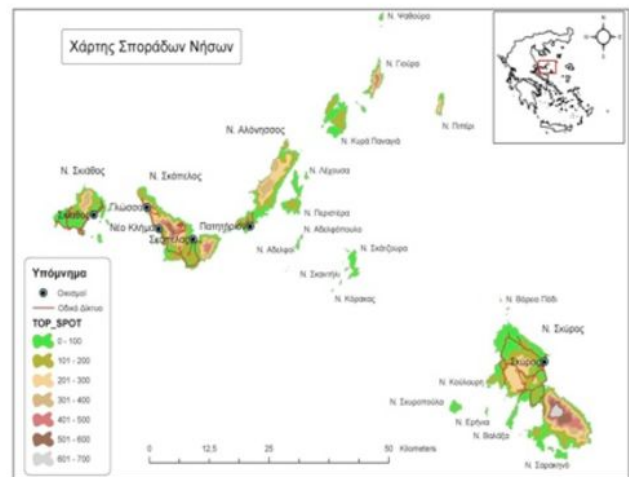


A herd of the famous local endemic wild ponies (*Equus caballus subsp. skyriano*) of Skyros. Photo: K. Intzes

The 4 year project LIFE09NAT/GR/000323 “Demonstration of the Biodiversity Action Planning approach, to benefit local biodiversity on an Aegean island, Skyros» aims to demonstrate integrated planning methods and management measures in order to enhance the biodiversity on the island of Skyros, fulfilling the demand of the local community for an environment rich in biodiversity, compatible with a sustainable economical and social development. One of its specific foci is the demonstration of the feasibility of the revitalization of the traditional island land use model. In this sense the temporal and spatial adjustment of grazing is the highest priority.

The forthcoming Action Plan for grazing adjustment revealed that a reduction of the number of animals (sheep and goats) by 10,000 (from 35,000 to 25,000) is necessary to prevent further degradation. Maintaining this lower stocking density for 30 years would alleviate the negative effects of overgrazing, and support a sustainable rural economy based on local development. Additionally, a series of measures are proposed, including (i) mechanical cleaning (light ploughing) of approx. 500 Ha of phrygana, located on ground of less than 10% slope, satisfying the annual feeding demands of 2600 small animal units, (ii) revitalization of the abandoned terraces on fertile soils and reseeding them with local varieties of wild grasses and legumes, supporting an additional 4800 animals, (iii) the adoption of a system of animal movement throughout the year, starting from the high rocky grasslands early in spring down to phrygana and shrubs in summer, which is expected to benefit the system by adding 480 more small animal units. Other measures such as the adoption of refined grazing systems and the establishment of Kermes oak nuclei in rocky grasslands (important to provide shed and fresh grasses and herbs for pony herds) will improve the grazing situation. In addition, institutional measures like the registration of the south Skyros, where two Natura 2000 sites are located, as a High Nature Value area, the revitalization of a local herders cooperative and the registration of organic farming units and PDO (protected designation of origin, EC 1898/2006) products, and most importantly the implementation of a thorough grazing

management study specialized in the determination of an environmental-friendly grazing activity will produce further added value to traditional livestock husbandry.



North Sporades islands, Skyros is located in the south-eastern corner.



Vegetation gems: phrygana, *Quercus coccifera* and rocky grasslands in Skyros island. Photo: M. Vrahnakis



Clicking natural sounds in Skyros island. Photo: M. Vrahnakis