

# The Phrygana



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# The Phrygana

Definition

Characteristics

Degradation und regeneration

History of vegetation

Plant communities

# Definition

Low dwarf shrubland communities in the Mediterranean regions.

## **Gar(r)igue**

In western Mediterranean regions, with many different species and a dense vegetation cover.

## **Phrygana**

In eastern Mediterranean regions, with less different species and many gaps in the vegetation.

Species composition varies by 80 %.



Garrigue [01].



Phrygana [02].

# Characteristics

In different literature the height varies between 30 cm and 1 m.

Mostly there are 1 or 2 species who dominate the area.

Phrygas are very different and often on nutrient-poor soils like costal or stony areas.

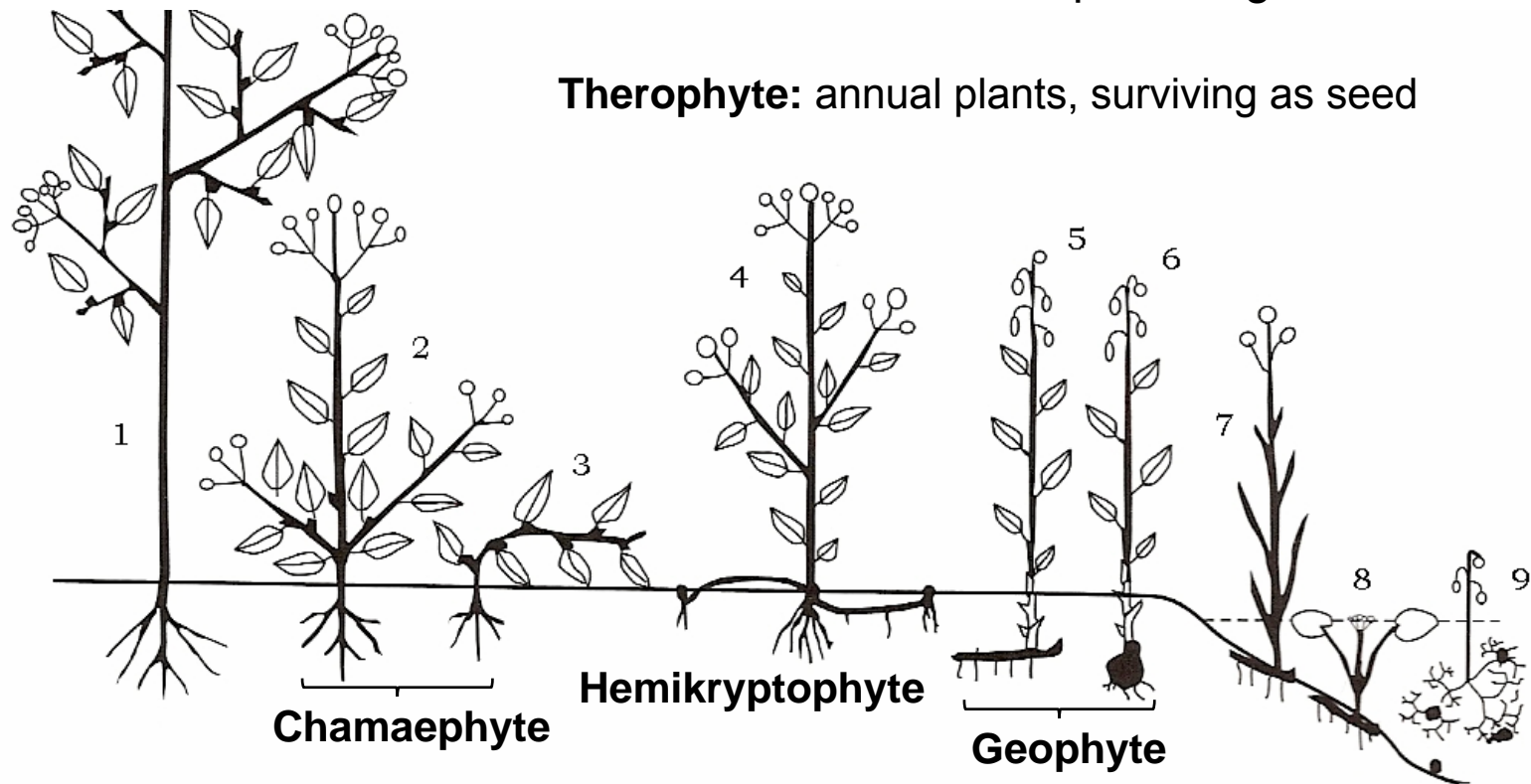
There are often dwarf trees and ball shaped shrubs, to keep the temperature and moist.



Typical phrygana  
in spring flower [03].

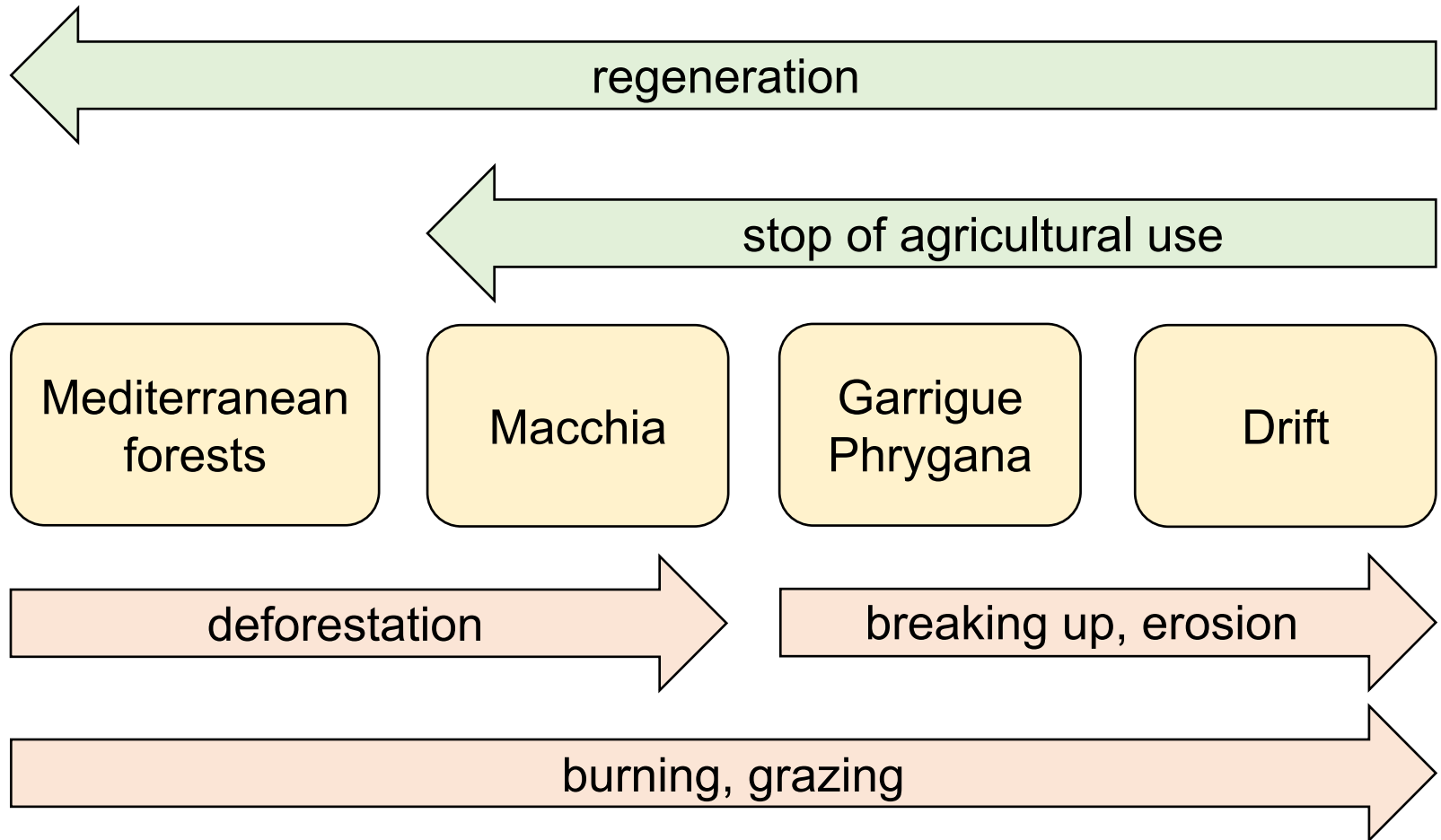
# Characteristics

**Life forms:** Based on the place of the plant's growth-point during season with bad conditions for example drought.



Raunkiaer's plant life forms. Type 2 to 6 are usual in a phrygana [04].

# Degradation and regeneration



# History of vegetation

It is guessed that before human impact the mediterranean region was dominated by the mediterranean forest.

Today the forests are rare because of forestry and agriculture.

The results are shrub formations like phrygana/garrigue or the higher Macchia.

Natural phryganas have most of the time a higher biodiversity than anthropogenic ones.



For comparison, a macchia with much higher vegetation [05].

# Typical plant communities

Phrygana regions are often dominated by one species.

In addition to this dominating species, there are many trace species like annuals or geophytes.

Especially in spring is a high biodiversity visible.

**Important phrygana plant communities are**

***Sarcopoterium spinosum* community**

**Lamiaceae community e.g. with *Thymbra capitata***

***Cistus* community**

and others (e.g. with *Juniperus* or Ericaceae)



# Typical plant communities

## *Sarcopoterium spinosum* community



Branches and berrys of *Sarcopoterium spinosum* [06].

### ***Sarcopoterium spinosum***

(L.) Spach

Rosaceae

The maximum height is about 75 cm.

There are branches with hairy leaves and branches with thorns.

The small flower is unremarkable. The fruit of *S. spinosum* is firstly white and ripe bright red.

# Typical plant communities

## *Sarcopoterium spinosum* community



### *Sarcopoterium spinosum*

The shrub has the typical ball shaped habitus.

This plant is one of the few wind-pollinated species.

In the arabic region, it is a traditional medicine for diabetics.

Seasonal leaf dimorphism means spring and autumn leaves.

Habitus of *Sarcopoterium spinosum* [07].

# Typical plant communities

## *Sarcopoterium spinosum* community



Branch of *Salvia fruticosa* [08].

### ***Salvia fruticosa* Mill.**

Lamiaceae

A fully with hairs cover shrub.

The short leaves are white on the undersides and dark green on the top.

The pinkish flowers sitting in the axils.

The plant contains essential oils and is used for medicine.

*S. fruticosa* grows often in *S. spinosum* communities but it is also sometimes the dominant species in Lamiaceae communities.

# Typical plant communities

## *Sarcopoterium spinosum* community



*Phlomis fruticosa* [09].

### *Phlomis fruticosa* L.

Lamiaceae

The species has aromatic leaves with white undersides.

All over the plant are star-shaped hairs.

Typical yellow flowers grow in whorls.

*P. fruticosa* is found in Lamiaceae communities, too or together with *Juniperus* in coastal communities.

# Typical plant communities

## Labiatae (Lamiaceae) community

***Thymbra capitata*** (L.) Cav.

Lamiaceae

This species with its aromatic scent and the essential oils often grows in ball shape.

The typical *T. capitata* dominated phrygana is relatively low.

The normal height is about 20-50 cm.

It is only spread over the frost-free areas.

Typical are the narrow, fleshy leaves and the different shades of purple of the flowers.



*Thymbra capitata* [10].

# Typical plant communities

## Labiatae (Lamiaceae) community



***Tetraena alba*** (L.f.) Beier & Thulin  
Zygophyllaceae

This species is a very branched shrub with paired obovoid and fleshy leaves.

The small flowers are in the axils of the leaves.

The plant is salt tolerant. *T. alba* concentrates salt in the leaves and sheds them if needed.

*Tetraena alba* [11].

# Typical plant communities

## Cistaceae community

### *Cistus* species

These perennial shrubs are very common in the Mediterranean region. The species of the family Cistaceae differs in shape, size and colour of the evergreen leaves and flowers.



***Cistus salviifolius* L.**  
with leaves like *Salvia* [13].



***Cistus creticus* L.**  
is used in the folk medicine [14].



***Cistus parviflorus* Lam.**  
with small blossoms [12].

# Typical plant communities

## Cistaceae community



***Tuberaria guttata* (L.) Fourr.**

with dark red spots near the yellow flower bases [15].



***Helianthemum obtusifolium* Dunal**

is endemic in Cyprus, the flower buds are hairy [16].



# Typical plant communities

## *Juniperus* community

*Juniperus phoenicea* L. Cupressaceae

is mostly a shrub and in some areas a tree, often in communities with *Sarcopoterium* or *Cistus* species. It is the only Cupressaceae which is monoecious. In some areas it is used as folk medicine.



*Juniperus phoenicea* as a tree [17].



*Juniperus phoenicea* as a shrub in coastal communities [18].

# Typical plant communities

## Companion species widespread in phrygana communities



### *Ranunculus asiaticus* L.

Ranunculaceae

*R. asiaticus* is a perennial plant which stores in the rhizome as a geophyte.

The colour of the flower varies a lot depending on the area of growth, in Cyprus mostly yellow.

This species is a common ornamental plant. There are filled flowers in pink, yellow, red, and white with stamens in brownish and blackish colours.

*Ranunculus asiaticus* L. [19]

# Typical plant communities

## Companion species widespread in phrygana communities



*Asphodelus ramosus* [20].

### *Asphodelus ramosus* L.

Xanthorrhoeaceae

The branched asphodel, with its typical highly branched stem is a geophyte. The storage area is the rhizome.

This rhizome is edible and was roasted eaten in hunger crisis.

This plant goes up to 1.5 m height, which is very high for a phrygana flora.

It is typical for anthropogenic areas, because the farm animals like goat, sheep and donkey do not graze this plant.

# Typical plant communities

## Orchidaceae species widespread in phrygana communities



***Ophrys kotschyi*** H. Fleischm. & Soó  
Orchidaceae

It is a geophytic plant which stores in a bulb under the earth. Therefore the plant is perennial.

Sexual deception: The flowers scent and the appearance is like a female insect. A cheated male pollinates.

The Inflorescence have up to 10 blossoms.

*Ophrys kotschyi*  
in a *Sarcopoterium* community [21].

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