# E1.5d Greek and Anatolian oromediterranean siliceous dry grassland

## Summary

These are closed grasslands of deeper soils on high mountain slopes and hollows in Greece and Anatolia where snow accumulates and provides springtime irrigation with melt-water. Species-richness is high but the dominance and associates vary from place to place.  The vegetation can provide valuable summer grazing and decline of traditional pastoralism threatens change but loss of extent and quality appear low. The habitat needs protection and some local restoration activities, such as re-instatement and regulation of the grazing regime in high mountain pastures.

## Synthesis

The habitat type is assessed as Least Concern since it has an extent of occurrence (EOO) of 61,350 km$^2$, an area of occupancy (AOO) of 155, and the habitat is stable in quantity and quality in the EU 28. In the EU 28+ region, the habitat is slightly decreasing in quantity and quality (between 5 and 10%), but not enough to qualify for a threatened category.

| Overall Category & Criteria | | | |
|---|---|---|---|
| EU 28 | | EU 28+ | |
| Red List Category | Red List Criteria | Red List Category | Red List Criteria |
| Least Concern | - | Least Concern | - |

## Sub-habitat types that may require further examination

No sub-habitats have been distinguished for further analysis.

## Habitat Type

### Code and name

E1.5d Greek and Anatolian oromediterranean siliceous dry grassland

Oromdediterrane grassland in an altitude above 1800 m on Mount Killini, the Peloponnisos, Greece (Photo:  Panayotis Dimopoulos).

### Habitat description

This habitat is formed by dense, closed, usually unsculptured, oromediterranean chionophilous grasslands of acid and often deep soils over siliceous or calcareous substrates, as well as the closed, dry or mesophilous perennial *Nardus* spp. grasslands (mat-grass swards) occupying siliceous soils in the mountains of central and southern Greece, and north-western Anatolia (transitional region between the Mediterranean and the Euro-Siberian floristic region). The various vegetation communities of this unit

occur on the high mountains of the southern Balkan peninsula under Mediterranean climate influence, including southern Albania, the Former Yuguslav Republic of Macedonia (FYROM), northwestern Turkey, the southern Pelagonides (Vermion), the Pindus mountain range (Tymfi, Peristeri, Karava, Smolikas), the high Thessalian mountains (Olimbos, Ossa), the Sterea Ellas (Giona, Iti) and the Peloponnesus mountains (Chelmos, Killini, Erimanthos, Taygetos); they develop on decalcified colluviums, on damp soils of seeps or poorly drained areas, and in depressions and other sites where snow lingers. These grassland communities or grassy meadows ("pelouses rases") above the treeline are mainly found at altitudes from 1,800 to 2,400 m Asl, and are mainly associated with late snow cover (>150 days) and irrigation from melt water in shallow depressions or in more or less flat ground with accumulated fine-grained soil.

Indicators of quality:

- Vegetation cover > 80%
- Species rich communities
- High grass species presence
- Absence of strong erosion indication
- Soil without significant disturbances
- Absence or very low cover of weed species
- Absence of indications of secondary succession (e.g. invasion by tall herbs and the establishment of trees and shrubs on grassland areas)
- Controlled grazing regime

Characteristic species:

Flora: Vascular plants: *Alopecurus gerardii*, *Poa pumila*, *Anthoxanthum alpinum*, *Phleum alpinum*, *Nardus stricta*, *Bellardiochloa violacea* (*Poa violacea*), *Trisetum flavescens*, *Trifolium pallescens*, *Trifolium parnassi*, *Trifolium heldreichianum*, *Trifolium alpestre*, *Trifolium ottonis*, *Omalotheca supina*, *Omalotheca hoppeana*, *Herniaria parnassica*, *Ranunculus sartorianus*, *Lotus corniculatus*, *Thesium parnassi*, *Plantago lanceolata*, *Plantago atrata*, *Plantago holosteum*, *Scleranthus perennis*, *Rorippa thracica*, *Erigeron epiroticus*, *Acinos alpinus*, *Luzula pindica*, *Crocus veluchensis*, *Scilla nivalis*, *Corydalis densiflora*, *Corydalis parnassica*, *Beta nana*, *Trinia guicciardii*, *Botrychium lunaria.*

## Classification

This habitat may be equivalent to, or broader than, or narrower than the habitats or ecosystems in the following typologies.

EUNIS:

E4.3 Acid alpine and subalpine grassland (according to Hill M.O., Moss D. & Davies C.E. (2004a), the Trifolion parnassi is related to this habitat);

E4.35 (in the 4th level of the EUNIS classification under the title: Oro-Hellenic closed grassland, the Trifolion parnassi is included);

EuroVegChecklist:

*Trifolion parnassi* Quézel 1964;

*Poion violaceae* Horvat 1937;

Annex I:

6230 *Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe);*

Emerald:

E4.3 Acid alpine and subalpine grassland

MAES:

Grassland

IUCN:

4. Grasslands (4.4 Temperate).

**Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?**
Yes

Regions
Mediterranean

Justification
The habitat is representative for the climatic, geomorphological, altitudinal and biotic conditions in the Oromediterranean zone of eastern Mediterranean regions. It is restricted to the high mountains in the southern part of the Balkan Peninsula and Anatolian Peninsulas.

## Geographic occurrence and trends

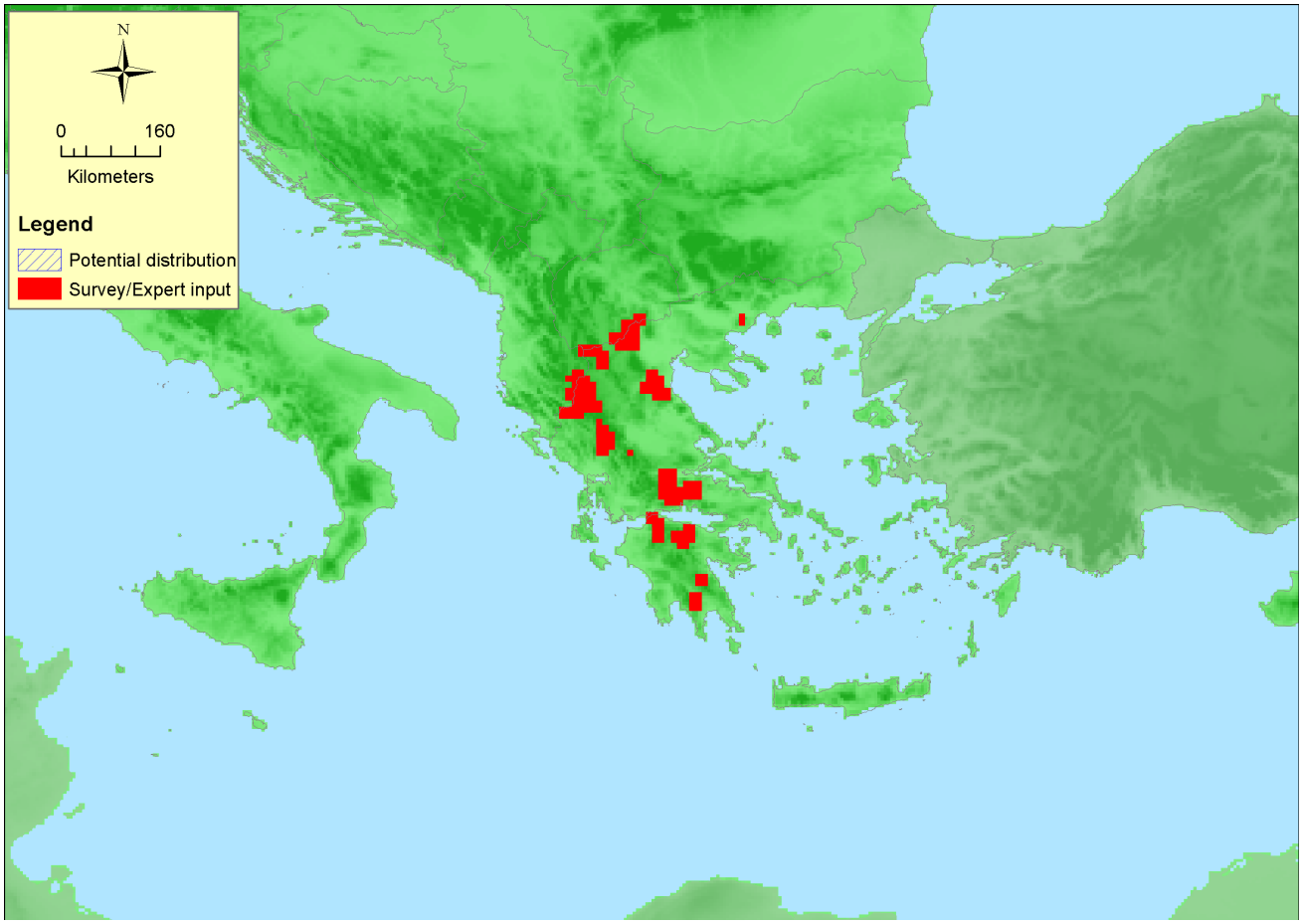
| EU 28 | Present or Presence Uncertain | Current area of habitat | Recent trend in quantity (last 50 yrs) | Recent trend in quality (last 50 yrs) |
|---|---|---|---|---|
| *Greece* | Crete: Present<br>East Aegean: Uncertain<br>Greece (mainland and other islands): Present | 150.2 $Km^2$ | Stable | Stable |

| EU 28 + | Present or Presence Uncertain | Current area of habitat | Recent trend in quantity (last 50 yrs) | Recent trend in quality (last 50 yrs) |
|---|---|---|---|---|
| *Albania* | Present | Unknown $Km^2$ | Unknown | Unknown |
| *Former Yugoslavian Republic of Macedonia (FYROM)* | Present | 800 $Km^2$ | Decreasing | Decreasing |

### Extent of Occurrence, Area of Occupancy and habitat area

| | Extent of Occurrence (EOO) | Area of Occupancy (AOO) | Current estimated Total Area | Comment |
|---|---|---|---|---|
| *EU 28* | 90750 $Km^2$ | 159 | 152 $Km^2$ | |
| *EU 28+* | 91300 $Km^2$ | 168 | 800 $Km^2$ | |

### Distribution map




The map is more or less complete for Greece, but lacks data from Macedonia and Albania. Data sources: Art17.

### How much of the current distribution of the habitat type lies within the EU 28?

Probably not more than 20% of the habitat type lies within the EU 28, but the exact percentage is unknown. The habitat also occurs in FYR Macedonia, Albania and Turkey.

### Trends in quantity

The habitat is stable in Greece - the only EU 28 country inside its range. There has been a decrease in quantity in FYR Macedonia of about 7% (between 5 and 10%) during the last 50 years, mostly due to the abandonment of mountain livestock breeding. In the future, the quantity of the habitat in Greece will probably remain stable, but in FYR Macedonia it is expected to continue declining.

- Average current trend in quantity (extent)
  EU 28: Stable
  EU 28+: Decreasing
- Does the habitat type have a small natural range following regression?
  No
  *Justification*
  The habitat is distributed on the tops of the highest mountains on the southern parts of Balkan Peninsula. They have not changed drastically during the last decades.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  *Justification*
  The habitat areas are restricted to the highest parts of the mountains in the southern Balkan Peninsula, but the pastures are widespread in these mountains.

### Trends in quality

The habitat is stable in Greece – the only EU 28 country inside its range. There is a decrease in quality in FYR Macedonia of about 7% (between 5 and 10%) during the last 50 years mostly because of the abandonment of mountain livestock breeding. This abandonment of traditional grazing practices leads to the invasion of tall nitrophilous herbs and the establishment of heathlands and shrubs on grassland areas. The severity of the degradation is slight. In the future, the quality of this habitat in Greece will probably remain stable, but in FYR Macedonia it is expected to continue declining.

- Average current trend in quality
  EU 28: Stable
  EU 28+: Decreasing

## Pressures and threats

The biggest threats for this habitat are changes in the grazing regime (overgrazing or abandonment of grazing), expansion of forest plantations and some natural processes like successions of heathlands and shrubs.

### List of pressures and threats

**Agriculture**

Grazing
Intensive grazing
Non intensive grazing
Fertilisation

**Sylviculture, forestry**

Forest planting on open ground

**Natural biotic and abiotic processes (without catastrophes)**

Biocenotic evolution, succession

## Conservation and management

There is a need for the establishment of protected areas/sites to ensure this habitat remains unthreatened. Projects for the restoration and regulation of grazing regime would also benefit this habitat.

### List of conservation and management needs

**Measures related to agriculture and open habitats**

Maintaining grasslands and other open habitats

**Measures related to spatial planning**

Establish protected areas/sites
Legal protection of habitats and species
Manage landscape features

### Conservation status

Annex I:

6230: CS: Range Area S&F FP Overall MED (only Greece): 6230 FV

### When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

The habitat has the capacity to recover naturally and through intervention. Intervention would imply the restoration and regulation of different grazing activities.

### Effort required

| 10 years | 50+ years |
|---|---|
| Through intervention | Naturally |

## Red List Assessment

### Criterion A: Reduction in quantity

| Criterion A | A1 | A2a | A2b | A3 |
|---|---|---|---|---|
| *EU 28* | 0 % | Unknown % | Unknown % | Unknown % |
| *EU 28+* | -7 % | Unknown % | Unknown % | Unknown % |

In the past 50 years, the habitat has been stable in Greece, and has declined slightly in FYR Macedonia. This habitat is therefore assessed as Least Concern under Criterion A. There is no information on longer historical trends. In the future, a small further decline is expected in FYR Macedonia, and in Greece it is expected to stay stable, but quantitative data is not available.

### Criterion B: Restricted geographic distribution

| Criterion B | B1 | | | | B2 | | | | B3 |
|---|---|---|---|---|---|---|---|---|---|
| | EOO | a | b | c | AOO | a | b | c | |
| *EU 28* | 61,350 $Km^2$ | No | No | Unknown | 155 | No | No | Unknown | Unknown |
| *EU 28+* | 61,900 $Km^2$ | Yes | Yes | Unknown | 164 | Yes | Yes | Unknown | Unknown |

This habitat has a large geographic distribution with large EOO and AOO values. There is only a slight continuing decline in quantity and quality at the EU 28+ level, and no decline at the EU 28 level, due to modifications in the grazing regime; either overgrazing or abandonment of grazing. This habitat is therefore assessed as Least Concern under Criterion A.

### Criterion C and D: Reduction in abiotic and/or biotic quality

| Criteria C/D | C/D1 | | C/D2 | | C/D3 | |
|---|---|---|---|---|---|---|
| | Extent affected | Relative severity | Extent affected | Relative severity | Extent affected | Relative severity |
| *EU 28* | 0 % | 0 % | Unknown % | Unknown % | Unknown % | Unknown % |
| *EU 28+* | 7 % | Unknown % | Unknown % | Unknown % | Unknown % | unknown % |

| Criterion C | C1 | | C2 | | C3 | |
|---|---|---|---|---|---|---|
| | Extent affected | Relative severity | Extent affected | Relative severity | Extent affected | Relative severity |
| *EU 28* | Unknown % | Unknown % | Unknown % | Unknown % | Unknown % | Unknown % |
| *EU 28+* | Unknown % | Unknown % | Unknown % | Unknown % | Unknown % | Unknown % |

| Criterion D | D1 | | D2 | | D3 | |
|---|---|---|---|---|---|---|
| | Extent affected | Relative severity | Extent affected | Relative severity | Extent affected | Relative severity |
| *EU 28* | Unknown % | Unknown% | Unknown % | Unknown% | Unknown % | Unknown% |
| *EU 28+* | Unknown % | Unknown% | Unknown % | Unknown% | Unknown % | Unknown% |

The overall extent and severity given are the weighted average calculated from reported data from Greece (EU28) and FYR Macedonia (EU 28+). There has been no reduction in abiotic or biotic quality in the EU 28, and there has only been a slight decline at the EU 28+ level affecting 7% of the habitat's extent. This habitat is therefore assessed as Least Concern under Criterion C/D. There is no available information on long historical or future trends in quality. The changes in quality are both abiotic (climatic changes) and biotic (grazing regime).

### Criterion E: Quantitative analysis to evaluate risk of habitat collapse

| Criterion E | Probability of collapse |
|---|---|
| *EU 28* | Unknown |
| *EU 28+* | Unknown |

There is no quantitative analysis available that estimates the probability of collapse of this habitat type.

### Overall assessment "Balance sheet" for EU 28 and EU 28+

| | A1 | A2a | A2b | A3 | B1 | B2 | B3 | C/D1 | C/D2 | C/D3 | C1 | C2 | C3 | D1 | D2 | D3 | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *EU28* | LC | DD | DD | DD | LC | DD | DD | LC | DD | DD | DD | DD | DD | DD | DD | DD | DD |
| *EU28+* | LC | DD | DD | DD | LC | DD | DD | LC | DD | DD | DD | DD | DD | DD | DD | DD | DD |

| Overall Category & Criteria | | | |
|---|---|---|---|
| EU 28 | | EU 28+ | |
| Red List Category | Red List Criteria | Red List Category | Red List Criteria |
| Least Concern | - | Least Concern | - |

### Confidence in the assessment

Medium (evenly split between quantitative data/literature and uncertain data sources and assured expert knowledge)

### Assessors

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### Contributors

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### Reviewers

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## References

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