E1.5b Iberian oromediterranean basiphilous dry grassland

Summary

This habitat comprises grasslands of base-rich soils over calcareous bedrocks on the slopes and crests of high mountains in the Iberian Peninsula and France. There, the growing season is short, with harsh winters when strong winds blow the ground free of snow and leave the surface subject to deep cold which encourages the development of freeze-thaw features. The cover of vegetation is intermediate to complete, dominated by prostrate or dwarf grasses and forbs, and includes many endemics. Extreme conditions generally prevent succession, and grazing, generally by sheep, is restricted to the brief summer and has little impact except where the habitat extends to somewhat lower levels. There seems to have been no loss of extent but there has been some decline in quality due to leisure infrastructure. The maintenance of low intensity sheep grazing is essential for the conservation of the habitat in the lower elevations, while in the highest elevations limitation of leisure activities is very important, as the habitat is very difficult to recover once it has been destroyed.

Synthesis

The habitat is assigned to the category Least Concern (LC), as it has not substantially decreased in quantity nor in quality over the last 50 years, and its distribution (AOO) and range (EOO) are quite large. Nevertheless, we have to take into account that inside this EOO, the habitat only occurs in wind-exposed slopes of the calcareous mountains and plateaus, with a current estimated total area of only 725 km^2.

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

E1.5b Iberian oromediterranean basiphilous dry grassland

Festuca scoparia grassland on limestone, Sierra del Cadí, Pyrenees, Spain (Photo: J.A. Campos).

Festuca hystrix dry grassland on limestone, Toloño mountain, Araba, Basque Country, Spain (Photo: I. García-Mijangos)

Habitat description

Dwarf vegetation composed of hard leaved grasses (*Festuca, Koeleria*) and other ligneous plants which form a grassy scrub on calcareous thin rocky soils. Depending on the association involved, the grassland-scrub can be dominated by grasses (*Festuca* sp. pl.), or by other ligneous plants. The vegetation completely covers the soil surface or leaves up to 40 % of bare soil, depending on the rocky character of the soil, but also on the freezing-thawing cycle (geliturbation, gelifluction) which takes place in this habitat.

The habitat type is found in Mediterranean mountains, at upper supra-oro-cryoro levels, of the Iberian Peninsula, Pyrenees, French Massif Central and Alps Maritimes - Ligurian Alps, between 1300 to 2500 m. Here the grasslands are found under submediterranean high mountain climatic conditions, with a short summer drought, and severe low winter temperatures, as they are poorly protected by snow (they are covered by a thin layer of snow or even remain snow-free in winter).

The habitat is very rich in endemic species, probably due to its calcareous soils and its extreme environmental conditions. Succession towards taller vegetation types is prevented by extreme environmental conditions in the higher altitudes, where those grasslands are often climax communities. At lower altitudes (supra levels) encroachment by shrubs is easier, due to the more mesic conditions and this vegetation may be replaced by succession. The habitat can endure a light grazing pressure (usually sheep) without altering its structure and composition and it used to be grazed in summer during the short growing season.

Indicators of good quality:

The following characteristics may be considered as indicators of good quality:

- High species richness
- Presence of endemic species
- A medium to high vegetation cover
- Absence of nitrophilic species, linked to human activities
- No visible anthropic disturbances due to building activities, skiing or intensive trampling

Characteristic species:

Flora

Dominants: *Anthyllis montana, Arenaria aggregata*, *Artemisia pedemontana* subsp*. assoana*, *Astragalus incanus* subsp*. nummularioides, Astragalus sempervirens* s.l., *Carex humilis, Festuca altopyrenaica*, *Festuca burnatii*, *Festuca dimorpha, Festuca gautieri* subsp*. scoparia, Festuca hystrix, Festuca nevadensis, Festuca reverchonii, Genista lobelii, Globularia cordifolia, Helictotrichon sedenense, Helictotrichon sempervirens, Ononis cristata, Ononis striata*, *Sesleria caerulea* subsp*. elegantissima*, *Stipa eriocaulis*, *Teucrium polium* subsp. *aureum, Thymelaea nivalis.*

Diagnostic: *Androsace vitaliana* s.l.*, Anthyllis vulneraria* subsp*. argyrophylla, Arenaria erinacea* s.l., *Arenaria murcica, Armeria bigerrensis* subsp*. legionensis*, *Artemisia chamaemifolia* subsp*. cantabrica*, *Asperula pyrenaica*, *Astragalus cavanillesii, Astragalus tremolsianus, Brimeura amethystina* s.l., *Centaurea podospermifolia, Centaurea jaennensis, Centaurea janerii* subsp*. babiana*, *Crepis albida* s.l.*, Cyanus triumfettii, Cytisus ardoinii, Dianthus brachyanthus s.l., Dianthus subacaulis, Draba cantabriae* s.l., *Draba lebrunii*, *Dyanthus brachyanthus* s.l., *Erodium cazorlanum, Erodium daucoides, Erodium foetidum* s.l., *Erysimum humile* subsp*. pyrenaicum*, *Erysimum seipkae*, *Euphorbia duvalii*, *Genista delphinensis, Genista villarsii, Gentiana clusii* subsp*. corbariensis, Globularia punctata, , Helictotrichon sedenense* subsp*. gervaisii*, *Iberis saxatilis, Laserpitium lainzii, Leucanthemum burnatii, Leucanthemum graminifolium*, *Linaria aeruginea* subsp*. cardonica*, *Narcissus assoanus, Onobrychis pirenaica, Onosma bubani*, *Onosma*

fastigiata, *Onosma tricerosperma* subsp. *alpicola*, *Oreochloa confusa*, *Oxytropis javalambrensis, Paronychia kapela* subsp. *serpyllifolia, Plantago argentea*, *Saponaria caespitosa, Saxifraga conifera*, *Sempervivum calcareum, Senecio doronicum* s.l., *Senecio provincialis* var. *corbariensis, Seseli granatensis, Sideritis glacialis* subsp. *fontqueriana, Sideritis hyssopifolia* s.l., *Sideritis subspinosa*, *Teucrium luteum, Thesium catalaunicum*, *Thymus godayanus, Thymus vulgaris* subsp. *palearensis, Thymus willkommii.*

Classification

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

EUNIS:

E1.5 Mediterranean-montane grassland

EuroVegChecklist (alliances):

Ononidion striatae Br.-Bl. et Susplugas 1937

Ononidion cristatae Royer 1991

Festucion scopariae Br.-Bl. 1948

Genistion lobelii Molinier 1934

Avenion sempervirentis Barbero 1968 4

Festucion burnatii Rivas Goday et Rivas-Mart. ex Mayor et al. 1973

Minuartio-Poion ligulatae O. de Bolòs 1962

Seselio granatensis-Festucion hystricis Rivas-Mart. in Rivas-Mart. et al. 2011

Annex 1:

6170 Alpine and subalpine calcareous grasslands

Emerald:

E4.4 Calcareous alpine and subalpine grassland

MAES-2:

Grassland

IUCN:

3.8. Mediterranean-type shrubby vegetation.

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

No

Justification

Although the habitat is typical in Mediterranean calcareous mountains, it is also spread in Atlantic (Cantabrian mountains) and Alpine (Pyrenees, Western Alps and Alps maritimes). In fact, the submediterranean areas host most of the area of the habitat.

Geographic occurrence and trends

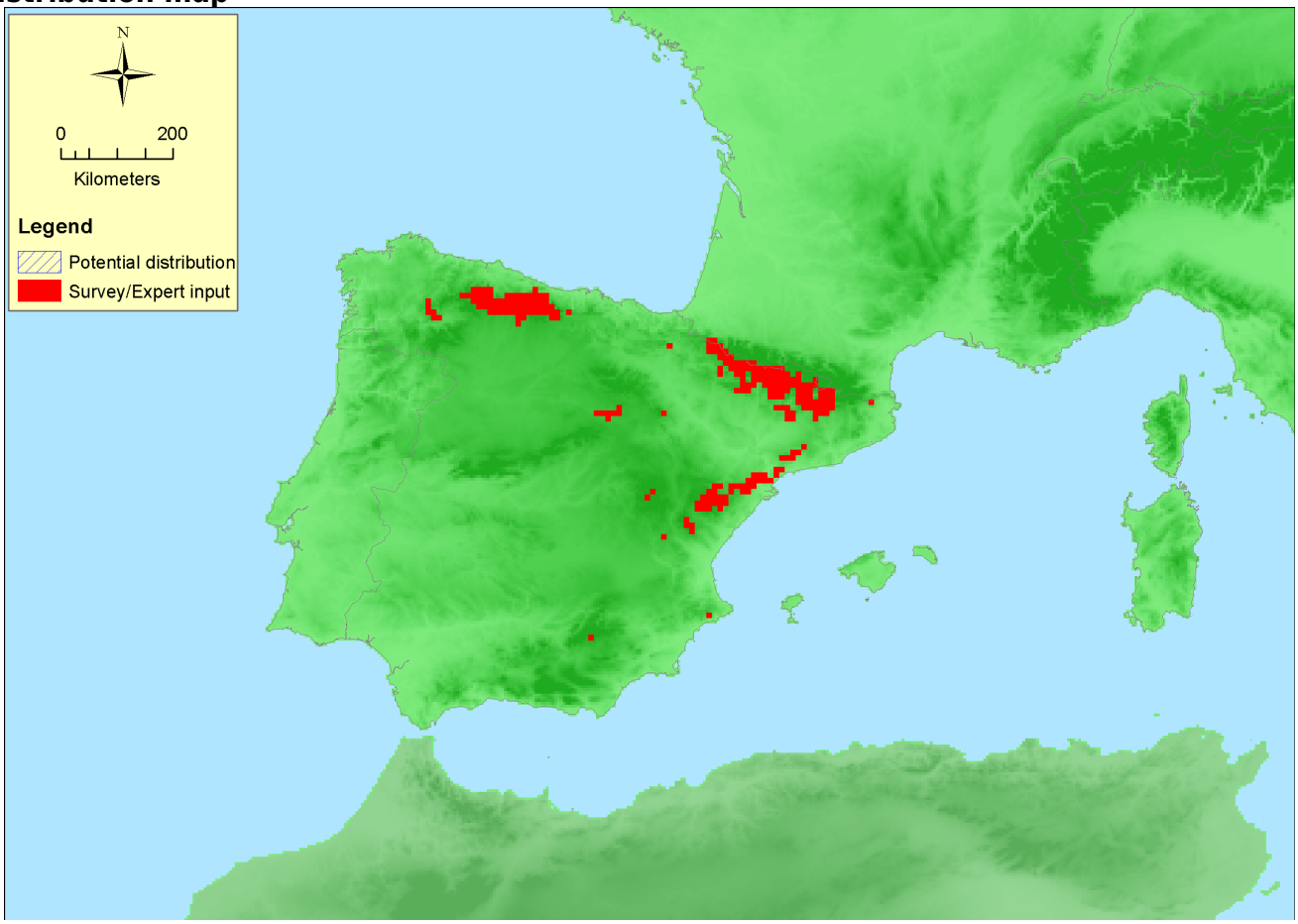
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
France	France mainland: Present	257 Km^2	Stable	Decreasing

EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Italy	Italy mainland: Present	Unknown Km^2	Decreasing	Decreasing
Spain	Spain mainland: Present	468 Km^2	Stable	Unknown

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	293300 Km^2	245	725 Km^2	No quantitative data from Italy
EU 28+	293300 Km^2	245	725 Km^2	

Distribution map



Map is complete for Spain, but misses occurrences in France and Italy, in the Pyrenees, Corbieres and Cevennes, Western Alps, and Maritime Alps-Ligurian Alps. Data sources: NAT.

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

The habitat is also represented in northern African high elevations (Rif and Atlas), so it is estimated that less than 75% of its area lies within the EU28.

Trends in quantity

Average Trend EU28 and EU28+: 0% (since 1960). The surface of this habitat has not decrease since 1960 according to data reported by Spain and France. Italy has reported a negative trend of 10%, but as they did not reported data of current extent this negative trend was ignored in the calcultation. Data on

historical trends are not available, and regarding future trends, France estimates a slight decrease.

- Average current trend in quantity (extent)
  EU 28: Stable
  EU 28+: Stable
- Does the habitat type have a small natural range following regression?
  No
  Justification
  EOO is quite large and the habitat has not undergone an important decline during the last 50 years.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  Although the area reported is not very large (725 km^2), its EOO is big, and in quite large areas it occupies big extensions.

Trends in quality

More than 10% of the area of the habitat in Europe has been subjected to moderate degradation over the last decades. This negative trend in quality started long ago, linked to the traditional sheep grazing, which has shaped the landscape of Mediterranean mountains for centuries. Overgrazing, as well as fires, has a strong negative influence on the quality of this habitat, both on biotic and on abiotic components. On the contrary, in Iberian plateaus abandonment of grazing is causing shrub and tree encroachment.
The calculated extent of degradation in EU28 (and EU28+) is 15% with 49% severity of degradation.

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

Pressures and threats

Grasslands included in this habitat are threatened both by intensive sheep grazing and lack of grazing. Intensive grazing causes loss of quality because of trampling, erosion and invasion by nitrophilous species, but if grazing finishes shrubs and trees invade the habitat following natural succession, especially in the montane and low subalpine. Fire is another important factor, both because of high frequency and fire supression. In the highest elevations main threat is related to leisure activities, which involve the construction of skiing complexes and intensive trampling. Artificial planting of conifers also threatens the habitat in the lowest elevations, especially in the Iberian plateaus. Finally, climate change also threatens the habitat quality, as more competitive species from lower elevations come into these grasslands.

List of pressures and threats

Agriculture

Grazing
Intensive sheep grazing
Abandonment of pastoral systems, lack of grazing

Sylviculture, forestry

Forest planting on open ground
Artificial planting on open ground (non-native trees)

Human intrusions and disturbances

Sport and leisure structures
Skiing complex

Natural System modifications

Fire and fire suppression

Conservation and management

The conservation of this habitat involves the maintenance of low intensity sheep grazing and the minimization of the impact of leisure activities. The disturbance created by the latter can facilitate the arrival of ruderal species, which is also facilitated by changing climatic conditions. Plantation of conifers should be avoided.

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

6170:

ATL: Range FV, Area FV, Structure & Function U2, Future Prospects U2; Overall U2.
ALP: Range U1, Area U1, Structure & Function U1, Future Prospects FV; Overall U1.
CON: Range FV, Area U1, Structure & Function U1, Future Prospects U1; Overall U1.
MED: Range FV, Area U1, Structure & Function XX, Future Prospects U1; Overall U1.

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

In the higher elevations, the extreme climatic conditions make it very difficult the recovery of the habitat once it has been seriously damaged. If damage is related to soil erosion due to intense trampling, the habitat needs a long time to recover, which can be facilitated through human intervention. If damage is related to climate change and consequent invasion of species from lower altitudes, the diagnostic species will dissapear in the long term and thus future recovery of the habitat will not be possible.

Effort required

50+ years	200+ 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+	0 %	Unknown %	Unknown %	Unknown %

The values for A1 were calculated from the territorial data sheets. Almost all of the area occupied by the habitat in Europe lies in Spain and France, which have reported a stable trend over the last

decades. There is no information on longer historical trends neither in future trends.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50000 Km^2	Unknown	Unknown	Unknown	>50	Unknown	Unknown	Unknown	Unknown
EU 28+	>50000 Km^2	Unknown	Unknown	Unknown	>50	Unknown	Unknown	Unknown	Unknown

Both EOO and AOO are quite large and do not meet criterion B. Sub-criteria were not evaluated because the values for EOO and AOO
are well above the thresholds.

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	15 %	49 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	15 %	49 %	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 of degradation are the weighted average calculated from reported data from Spain and France, that are home to almost all of the extend of the habitat in Europe. The changes in quality are both abiotic and biotic, so C/D1 has not been split into C1 and D1. The involved countries could not provide enough information on long historical or future trends in quality (C/D2, C/D3).

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	LC	LC	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	DD	DD	DD	LC	LC	LC	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
I. Biurrun

Contributors
Habitat definition: J. Loidi

Territorial experts: J. Loidi, A. Mikolajczak, D. Viciani

Working Group Grasslands: I. Biurrun, J. Dengler, D. Gigante, Z. Molnar, D. Paternoster, J. Rodwell, J. Schaminée, R. Tzonev

Reviewers
J. Loidi

Date of assessment
18/10/2015

Date of review
30/03/2016

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