

F3.1c Lowland to montane temperate and submediterranean genistoid scrub

Summary

This habitat comprises scrub dominated by woody leguminous shrubs occurring through the temperate, submediterranean and mediterranean zones in sunny situations, mostly on dry, nutrient-poor, acidic soils, with a main occurrence on the Iberian peninsula. It can be a primary colonist on rocky sites but in most cases is a secondary habitat, forming a successional stage between grassland or heath towards forest, or be more or less persistent along forest margins and in less intensively managed open pastures and along waysides. Usually the associated flora is heathy but, where the substrate is more base-rich, a calcicolous grassland element occurs. Continuing succession or abandonment and changes in land use to forest or arable cultivation are the main threats. Recovery of the habitat seems rather easy, both naturally and by management measurements.

Synthesis

The Red List assessment, based on all provided data with some assumptions for important data gaps, leads to the conclusion that habitat F1.3c qualifies for the category Least Concern (LC) regarding trends in quantity and quality.

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

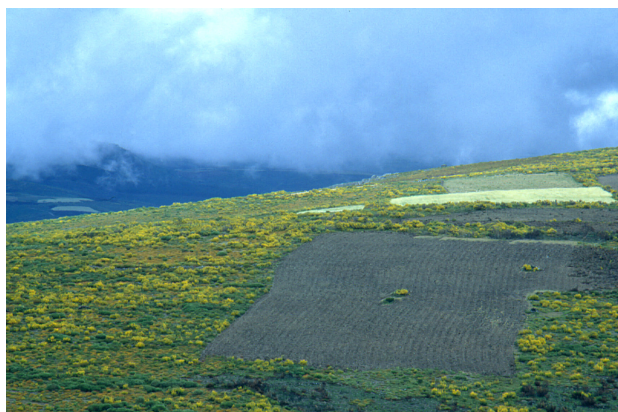
Sub-habitat types that may require further examination

The habitat is rather broadly defined. It may be subdivided into several subtypes, based on dominant shrub species and total species composition. However, so far the syntaxonomic documentation of important areas in Spain, Portugal and France is rather insufficient.

Habitat Type

Code and name

F3.1c Lowland to montane temperate and submediterranean genistoid scrub



Submediterranean genistoid scrub on fallow lands, Serra da Estrêla, Portugal. Broom species easily germinate in the mineral soils of the fallow lands and quickly develop to broom fields (Photo: Jan Jansen).



Cytisus multiflorus invading fallow rye fields in Serra da Estrêla, Portugal. In Portugal rye cultivation became the major driving force behind the evolution of broom fields (Photo: Jan Jansen).

Habitat description

A few meters high scrubland, dominated by species of the family *Fabaceae* (*Leguminosae*), specifically species of the genera *Cytisus*, *Ulex*, *Adenocarpus*, *Genista* and/or *Retama*. The habitat occurs in the temperate, submediterranean and mediterranean region, where it is mainly found on sunny, dry, nutrient-poor, acidic soils, but exceptionally also grows on more base-rich soils. It is in most cases a secondary habitat, forming a stage in the succession from grassland or heathland towards (*Quercus*) forests and occurring as mantle vegetation along forests. The potential vegetation in the areas of this broom dominated habitat are forests dominated by *Quercus pyrenaica*, *Q. suber*, *Q. rotundifolia* and in more humid areas *Q. robur*, *Q. petraea* and *Fagus sylvatica*. The habitat is associated with agro-pastoral landscapes, and in such environment it may form a threat to heathlands and grasslands, as the shrubs encroach after abandonment of traditional management. Broom species easily germinate in fallow lands on nutrient-poor, mineral soils, where they have good competitive conditions because of the root nodules, containing bacteria that capture atmospheric nitrogen (Rhizobacteria). In Portugal rye cultivation became the major driving force behind the evolution of broom fields and - to a lesser extent - also triggered the development of other vegetation.

Cytisus scoparius may also dominate ruderal sites, like along roads, in dry riverbeds, on cultivated fields, in logged forests or on burned sites. In rocky areas on shallow soils, also primary habitats of this type may be found. In Spain, Portugal and France genistoid scrub can also grow as post-fire vegetation.

In Northwest and Central Europe this is a relatively species poor type, mainly dominated by *Cytisus scoparius* and - in the Atlantic regions - *Ulex europaeus*, and with *Orobanche rapum-genistae* as a characteristic species of the *Cytisus scoparius* scrub. Further south the type becomes more diverse. In southern Italy (Sicily and Calabria) a community of *Adenocarpus brutius* (= *Adenocarpus complicatus* subsp. *brutius*) and *Cytisus scoparius* with many endemics (including *Viola aethnensis* subsp. *messanensis*) occurs as secondary vegetation in relatively acidic, mesophilous sites where *Fagus sylvatica* or *Quercus ilex* forests are the climax. In central Italy *Adenocarpus complicatus* subsp. *complicatus* forms scrub formations.

The highest diversity however is found on the Iberian Peninsula, where a broad range of high, genistoid shrubs may dominate, depending on the geographical region, elevation and soil conditions. Examples of such shrubs are *Cytisus multiflorus*, *Cytisus striatus* (subsp. *striatus* and subsp. *eriocarpus*), *Cytisus bourgaei* (= *C. scoparius* subsp. *bourgaei*), *Genista cinerescens*, *Genista florida*, *Genista hispanica* subsp. *occidentalis*, *Genista polyantha*, *Adenocarpus argyrophyllus*, *Adenocarpus telonensis*, *Retama monsperma* and *Retama sphaerocarpa*. These communities in Spain and Portugal are ranked under various denominations such as *retamal* (dominated by *Retama* or *Adenocarpus* species), *piornal* (*Genista*-dominated) and *escobonal* (large brooms, for instance *Cytisus*).

Almost all communities of the habitat are grouped in the class *Cytisetea scopario-striati*, although sometimes *Cytisus scoparius* and *Ulex europaeus* also participate in the *Calluno-Ulicetea* or in the *Rhamno-Prunetea* (the analogue mantle-scrub on richer soils). For the communities in the southeastern Balkan the assignment to classes and alliances has not been worked out yet.

In several other habitat types genistoid shrubs may become dominant. In Atlantic coastal dunes scrub with *Cytisus scoparius* and *Ulex europaeus* may be found, but those are part of habitat 'Atlantic dune scrub' (B1.6a). Individual shrubs of these two species may grow in a heathland or matorral, for example *Ulex europaeus* forma *maritimus* and *Cytisus scoparius* subsp. *maritimus* in heathlands on rocky coasts; in such cases the communities should be considered as part of those heathland or matorral habitats. Only if the shrubs form a relatively closed and relatively high community, the habitat type F3.1c is present. In (montane to) subalpine and oromediterranean belts of mountains *Cytisus oromediterraneus* (= *C. purgans*) and *Echinopartum* species form (relatively low) scrub, but those communities (equivalent to HD Annex 1-type 5120) are part of the Oro-Mediterranean habitat type F7.4a (Western Mediterranean mountain

hedgehog-heath). The relatively low scrub dominated by *Genista hispanica* subsp. *occidentalis*, classified in the class *Festuco hystricis-Ononidetea striata*, also is considered part of F7.4a.

Indicators of good quality:

The habitat tends to develop a high and relatively closed structure, while trees are absent. However, often the more open patches, mosaics with other habitats, have the highest biodiversity of plant species and animals. Indicators of good quality are:

- Relatively open scrubland in mosaic with other types;
- Presence of endemic shrub species;
- Presence of *Orobanche rapum-genistae* (Northwestern Europe);
- Absence of trees.

Characteristic species:

Vascular plants: *Adenocarpus anisochilus*, *Adenocarpus argyrophyllus*, *Adenocarpus aureus* subsp. *aureus*, *Adenocarpus complicatus* subsp. *brutius*, *Adenocarpus complicatus* subsp. *complicatus*, *Adenocarpus decorticans*, *Adenocarpus hispanicus* (subsp. *gredensis*, subsp. *hispanicus*, subsp. *neilense*), *Adenocarpus lainzii*, *Adenocarpus telonensis*, *Cytisus cantabricus*, *Cytisus commutatus*, *Cytisus ingramii*, *Cytisus scoparius*, *Cytisus scoparius* ssp. *bourgaei*, *Cytisus grandiflorus* ssp. *cabezudo*, *Cytisus multiflorus*, *Cytisus striatus* (subsp. *eriocarpus*, subsp. *striatus*), *Dianthus pinifolius*, *Echinopartum ibericum* ssp. *ibericum*, *Genista cinarescens*, *Genista cinerea* subsp. *speciosa*, *Genista florida* (subsp. *florida*, subsp. *polygaliphylla*), *Genista hispanica* ssp. *occidentalis*, *Genista obtusiramea*, *Genista polyanthos*, *Orobanche rapum-genistae*, *Retama monosperma*, *Retama sphaerocarpa*, *Silene frivaldszkyana*, *Teucrium salviastrum*, *Ulex europaeus* (subsp. *europaeus*, subsp. *latebracteatus*).

Classification

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

EUNIS:

F3.1 Temperate thickets and scrub

EuroVeg Checklist:

Sarothamnion scoparii Oberd. 1957

Ulici europaei-Cytision striati Rivas-Mart. et al. 1991

Genistion floridae Rivas-Mart. 1974

Cytision multiflori Rivas-Mart. 1974

Retamion sphaerocarphae Rivas-Mart. 1981

Adenocarpion decorticans (Rivas-Mart. et F. Valle ex F. Valle 1985) Rivas-Mart., Fernández-González et Loidi 1999

Violo messanensis-Adenocarpion intermedii (= *Violion messanensis*)

Genistion occidentalis Rivas-Martinez In Rivas-Martinez et al. 1984

Annex 1:

no relationship

Emerald:

F5.51G Tall spiny broom brush

F5.56 Thermo-Mediterranean broom fields (retamares)

MAES-2:

Heathland and shrub

IUCN:

Temperate shrubland

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

Yes

Regions

Atlantic

Mediterranean

Justification

Most of the habitat is found in the Atlantic region and the western part of the Mediterranean biogeographic region.

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)
<i>Austria</i>	Present	unknown Km ²	Unknown	Unknown
<i>Belgium</i>	Present	unknown Km ²	Unknown	Unknown
<i>Croatia</i>	Present	0.2 Km ²	Unknown	Stable
<i>Czech Republic</i>	Present	3 Km ²	Stable	Decreasing
<i>Denmark</i>	Present	unknown Km ²	Unknown	Unknown
<i>France</i>	France mainland: Present	1000-1500 Km ²	Increasing	Decreasing
<i>Germany</i>	Present	unknown Km ²	Unknown	Decreasing
<i>Greece</i>	Greece (mainland and other islands): Present	unknown Km ²	Unknown	Unknown
<i>Hungary</i>	Present	unknown Km ²	Unknown	Unknown
<i>Ireland</i>	Present	unknown Km ²	Unknown	Unknown
<i>Italy</i>	Italy mainland: Present Sardinia: Present Sicily: Present	788 Km ²	Increasing	Decreasing
<i>Luxembourg</i>	Present	unknown Km ²	Unknown	Unknown
<i>Netherlands</i>	Present	3 Km ²	Decreasing	Decreasing
<i>Poland</i>	Present	unknown Km ²	Unknown	Unknown
<i>Portugal</i>	Portugal mainland: Present	10 Km ²	Increasing	Unknown
<i>Slovenia</i>	Present	0.2 Km ²	Stable	Decreasing
<i>Spain</i>	Spain mainland: Present	5857 Km ²	Increasing	Unknown

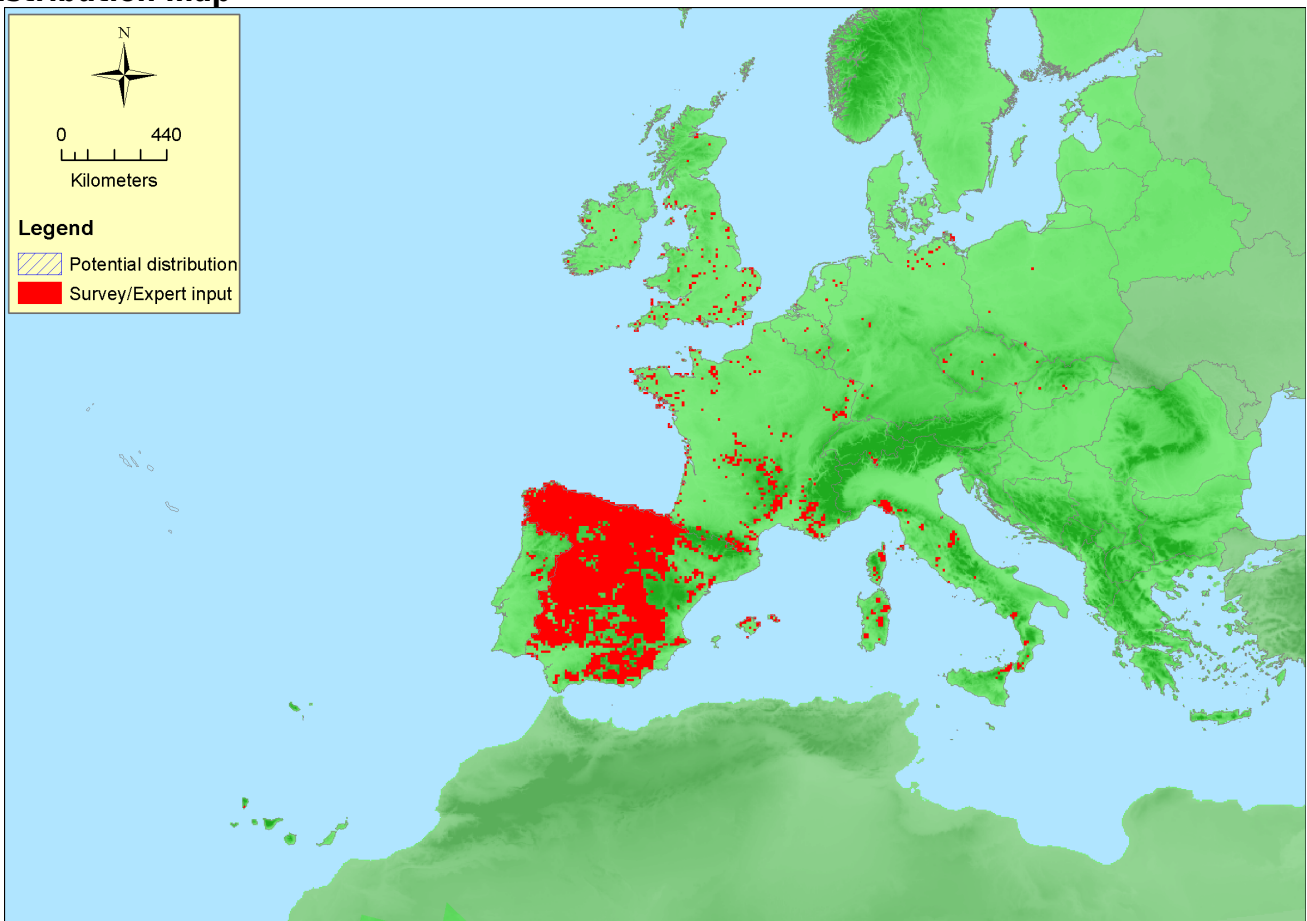
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Sweden	Present	unknown Km ²	Unknown	Unknown
UK	Northern Island: Present United Kingdom: Present	160 Km ²	Decreasing	Decreasing

EU 28 +	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Guernsey	Present	unknown Km ²	Unknown	Unknown
Isle of Man	Present	unknown Km ²	Unknown	Unknown
Jersey	Present	unknown Km ²	Unknown	Unknown
Switzerland	Present	70 Km ²	Increasing	Stable

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	5799500 Km ²	4035	8100 Km ²	
EU 28+	5799500 Km ²	4041	8200 Km ²	

Distribution map



The map has some data gaps in Portugal and likely in the northern part of the distribution as well. Data sources: EVA, NAT, ART17.

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

80-90%. A small part lies in EU28+ and probably also outside the EU28+.

Trends in quantity

Based on calculations with the currently available data a slight increase of extent is observed during the past decades (circa +5%). In the calculation the countries with the largest surface areas are included: France (1000-1500 km²), Spain (5857 km²) and Italy (788 km²). Portuguese data refer to mainly high quality genistoid scrub, and probably the total extent is larger than the reported data of 10 km² (personal communication Dr. Jorge Capelo). Data of France seem also to include formations of *Cytisus oromediterraneus*, which should be considered under type F7.4a, and therefore it provides an overestimate of the area. For a lot of countries there are no quantitative data available, but it is expected that most of these countries contain relatively small surfaces of the habitat.

- Average current trend in quantity (extent)

EU 28: Increasing

EU 28+: Increasing

- Does the habitat type have a small natural range following regression?

No

Justification

The habitat is widespread in Europe, with a core distribution on the Iberian peninsula, but expanding in northern and eastern direction towards Denmark and Croatia.

- Does the habitat have a small natural range by reason of its intrinsically restricted area?

No

Justification

The habitat is rather broadly defined, including many sub-types/ plant communities and species. Some of these subtypes/ plant communities are restricted to small natural ranges. All together summarized they occupy large areas.

Trends in quality

There is an overall slight reduction in quality for both the EU28 and EU28+. However the quantitative values do not account for the enormous area of the habitat in Spain, which contributes over 70% to the total amount. For a lot of other countries no data are available, but in most cases they do not have large surfaces. In many countries a decrease of biotic quality or both biotic and abiotic has been reported.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

Pressures and threats

Most important threats and pressures that have been reported are: (1) Abandonment of pastoral systems (this is a support for the habitat for the short-time, but a threat on longer periods); (2) Abandonment of crop production; (3) Artificial planting on open ground (non-native trees); (4) Species composition change (succession); and (5) Burning down (also this is both a threat as a support for the habitat).

List of pressures and threats

Agriculture

Abandonment of pastoral systems, lack of grazing

Abandonment of crop production

Sylviculture, forestry

Artificial planting on open ground (non-native trees)

Natural System modifications

Burning down

Natural biotic and abiotic processes (without catastrophes)

Species composition change (succession)

Conservation and management

Most important challenges for conservation of the habitat are (1) to maintain traditional land use to a certain extent, and (2) to develop natural forests with natural mantle vegetation.

List of conservation and management needs

Measures related to agriculture and open habitats

Other agriculture-related measures

Measures related to forests and wooded habitats

Restoring/Improving forest habitats

Conservation status

There is no good relationship with Annex I-types.

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

In just a few years the habitat can recover both naturally and through intervention. In general *Genista* and *Cytisus* have a high germination capacity and develop rather fast. However it is more difficult to estimate whether the quality of the habitat will recover so fast. This depends on the sub-type. In case of rather high species composition of an intact plant community, the germination capacity of species other than *Genisteae* may be lower.

Effort required

10 years
Naturally and through intervention

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	+5.1 %	increase %	unknown %	unknown %
EU 28+	+5.3 %	increase %	unknown %	unknown %

Based on territorial data the trends in the EU28 and EU28+ have been calculated to be about +5%. France and Spain only reported an increase, but no quantitative data. As these countries contain the largest amounts of the habitat, it has been calculated with an increase of about 5-10% for these countries. Including these data, the calculation covers more than 90% of the extent of the habitat. Of the countries outside the EU28 only Switzerland reported data, however the surface in other countries outside the EU28 is expected to be relatively marginal.

It is assumed that the extent of this habitat will further increase or at least will not decrease because of a major general trend, triggered by the unfavourable economic situation. In large parts of Europe the

country-side experiences a huge exodus of the rural population. As a result there is bioaccumulation in large areas, including scrub encroachment. Consequently there is an increase of fire hazards such as wildfires both in forest plantations and shrublands. This may cause a regression of natural succession and favour the growth of shrub formations amongst others those dominated by genistoid species. Also the abandonment of traditional land use may trigger the growth of genistoid scrub such as shrublands dominated by *Cytisus multiflorus* in formerly used rye fields in Portugal. Because of these trends also the future trend in quantity (A2a) is assessed to be positive.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50000 Km ²	No	No	No	>50	No	No	No	No
EU 28+	>50000 Km ²	No	No	No	>50	No	No	No	No

The habitat has a large AOO and EOO and a high number of locations and does not meet the thresholds for criteria B1, B2 or B3.

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	21 %	46 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	21 %	46 %	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 calculation is based on an area of 2300 km², only about 28% of the total surface. The values lead to the category Least Concern (LC) as the thresholds for Vulnerable (VU) are not met. The category Near Threatened (NT) could be considered, as the 46% severity is above one of the two combined thresholds for Vulnerable. However, if - based on best expert judgement - assumptions are made for the data gaps in Spain and Portugal (10-20% area affected, severity 10%) this results in much lower values (13-20% affected, 14-21% severity), which indicates that a final assessment of Least Concern is most appropriate.

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	LC	DD	DD	LC	LC	LC	LC	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	LC	LC	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)

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