

F3.1g *Corylus avellana* scrub

Summary

This habitat comprises relatively stable primary scrub dominated by *Corylus avellana*, which has its main distribution on limestones in regions of oceanic climate, notably western Ireland and Scotland, in situations where strong winds and very shallow soils prevent the development of forest. The habitat also occurs locally and in smaller stands in regions of more continental or submediterranean climate, on steep slopes and in other sites where no trees will survive. The associated species vary over the range with broadleaved forest herbs typical in the Atlantic zone, often accompanied by a rich epiphytic cryptogam flora, dry grassland and forest edge species characteristic in Central Europe. Grazing and browsing can open up the canopy and prevent regeneration of the *Corylus* ultimately creating a kind of parkland structure in which older individual hazels. Provided such use is kept in check, no other management is needed for conservation.

Synthesis

Despite of its wide distribution, few countries reported any data on the type, which may be caused by some confusion about the definition and the difficulty in distinguishing between primary and secondary stands. However, the reported information shows a clear overall increase in surface extent and more-or-less stable trends in quantity and quality. These trends lead to the category Least Concern (LC).

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

Although the species composition varies strongly between the Atlantic parts of the distribution range and the more continental and submediterranean parts, there is no need to further differentiate between subhabitats, as the occurrences outside the Atlantic region are relatively widely dispersed and in small stands and can be considered marginal to the main distribution.

Habitat Type

Code and name

F3.1g *Corylus avellana* scrub



Hazel scrub in the Burren, Western Ireland (Photo: Nils van Rooijen).



Hazel scrub in Leacann Burn, Argyll, Scotland (Photo: Ben & Alison Averis).

Habitat description

This is permanent scrub dominated by *Corylus avellana* mostly typical of exposed coastal and upland situations with a humid Atlantic climate. The hazel forms a low canopy up to 3m tall, wind-shaped in more exposed situations, with multi-stemmed stools that are self-renewing by the production of new growth from the centre and slow clonal expansion. On shallower soils, stools tend to be more close-grown, with fewer thicker rigid stems and the scrub more shady; on deeper soils and in more sheltered situations, wider-spaced, multi-stemmed stools prevail with a lighter interior. Damage from winter storms also contributes to stem turnover and grazing/browsing can open up the canopy and prevent regeneration ultimately creating a parkland effect where older individual hazels can survive, sometimes acquiring a tree physiognomy.

The field layer varies according to the character of the soils which can be highly calcareous to slightly acid, shallow and skeletal to deeper and loamy and the often irregular topography favours complex mosaics with local instability of the surface. High precipitation usually maintains the soils in a moist condition, but local ground water seepage can further enhance wetness. The herb contingent is usually of the more Atlantic Carpinion type, more or less calcicolous according to the soil reaction, with an obvious vernal component in which *Hyacinthoides non-scripta*, *Anemone nemorosa* and *Primula vulgaris* often figure, and a sometimes luxuriant fern flora. Less limey soils can have a grassier flora with a summer cover of *Pteridium aquilinum*. Towards the north of the range, *Trollius europaeus* and *Cirsium helenioides* provide a distinctive phytogeographical element.

The cryptogam flora can be very rich and distinctive in less disturbed stands. Shadier and more humid interiors favour a luxuriant bryophyte flora over soil, rocks and the hazel stool bases, an 'elfin' aspect in which broader Atlantic and some specialist oceanic species are especially striking. The lichen flora is also particularly indicative of venerable stands with more light-demanding *Graphidion* species typical of smoother bark in less shady situations, *Lobarion* species on rougher bark and in shadier stands, both contingents including some internationally rare taxa. Hazel is ectomycorrhizal and a number of fungi can add to the floristic richness of the scrub.

The habitat described above occurs in Ireland and the United Kingdom, where it is found in locations where wind and shallow soils prevent the growth of trees. However, also in Central Europe permanent hazel scrub is found, in places where soil conditions prevent succession towards forest, for example on steep hillsides. Here also the scrub is in most cases growing on limestone, but occasionally also on other soil types. In this more continental region the herb layer consists of dry grassland and forest edge species, like *Epipactis atrorubens*, *Campanula persicifolia*, *Brachypodium pinnatum* and *Melampyrum nemorosum*. Such scrub communities are classified in the alliance *Berberidion vulgaris*.

Indicators of good quality:

- Presence of at least some continuous cover of healthy multi-stemmed hazel bushes without any overtopping tree canopy
- Diverse herb layer, often with complex mosaics over uneven topography
- Rich and diverse cryptogam flora
- Grazing and browsing at moderate levels at most
- Absence of signs of coppicing
- Absence of invading oceanic aliens e.g. *Rhododendron ponticum*.

Characteristic species:

Flora: Shrub canopy: *Corylus avellana*.

Herbs (Atlantic region): *Anemone nemorosa*, *Asplenium phyllitis*, *A. trichomanes*, *A. viride*, *Athyrium filix-femina*, *Blechnum spicant*, *Brachypodium sylvaticum*, *Circaea intermedia*, *Cirsium helenioides*,

Deschampsia cespitosa, *Dryopteris filix-mas*, *Geum urbanum*, *Hyacinthoides non-scripta*, *Mercurialis perennis*, *Oxalis acetosella*, *Primula vulgaris*, *Pteridium aquilinum*, *Trollius europaeus*, *Viola riviniana*.

Bryophytes: *Cololejeunea minutissima*, *Drepanolejeunea hamatifolia*, *Eurhynchium striatum*, *Frullania teneriffae*, *Harpalejeunea molleri*, *Isothecium myosuroides*, *Kindbergia praelonga*, *Loeskobryum brevirostre*, *Neckera pumila*, *Plagiochila bifaria*, *Plagiochila exigua*, *Pseudosleropodium purum*, *Ulota aalvescens*, *U. phyllantha*, *Zygodon conoideus*.

Lichens: *Arthonia cohabitans*, *A. excipiendia*, *A. ilicinella*, *Artholthelium macounii*, *Arthothelium orbilliferum*, *Bactrospora homalotropa*, *Eopyrenula septemseptata*, *Fuscopannaria sampaiana*, *Gomphyllus calycoicdes*, *Graphis alboscripta*, *Lecanora cinereofusca*, *Leptogium brebissonii*, *L. cochleatum*, *L. hibernicum*, *Lobaria pulmonaria*, *L. virens*, *Melaspilea atrodioides*, *Mycomicrothelia atlantica*, *Parmelia testacea*, *Pseudocyphellaria intricata*, *P. norvegica*, *Pyrenula coryli*, *P. hibernia*, *P. laevigata*, *Thelotrema macrtocporum*.

Fungi: *Chromocyphella muscicola*, *Encoelia glauca*, *Hymenochaeta corrugata*, *Hymenocyphus fructigenus*, *Hypocreopsis rhododendri*, *Hypoxylon fuscum*, *Lactarius pyrogalus*, *Leccinum pseudoscabrum*, *Sarcocypha austriaca*.

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

EuroVegChecklist:

Carpinion betuli Issler 1931

Berberidion vulgaris Br.-Bl. ex Tüxen 1952

Annex I:

No relationship

Emerald:

No relationship

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

Justification

The main distribution of the habitat is in the Atlantic region, but smaller stands may be found widespread but locally over more continental and submediterranean parts of Europe.

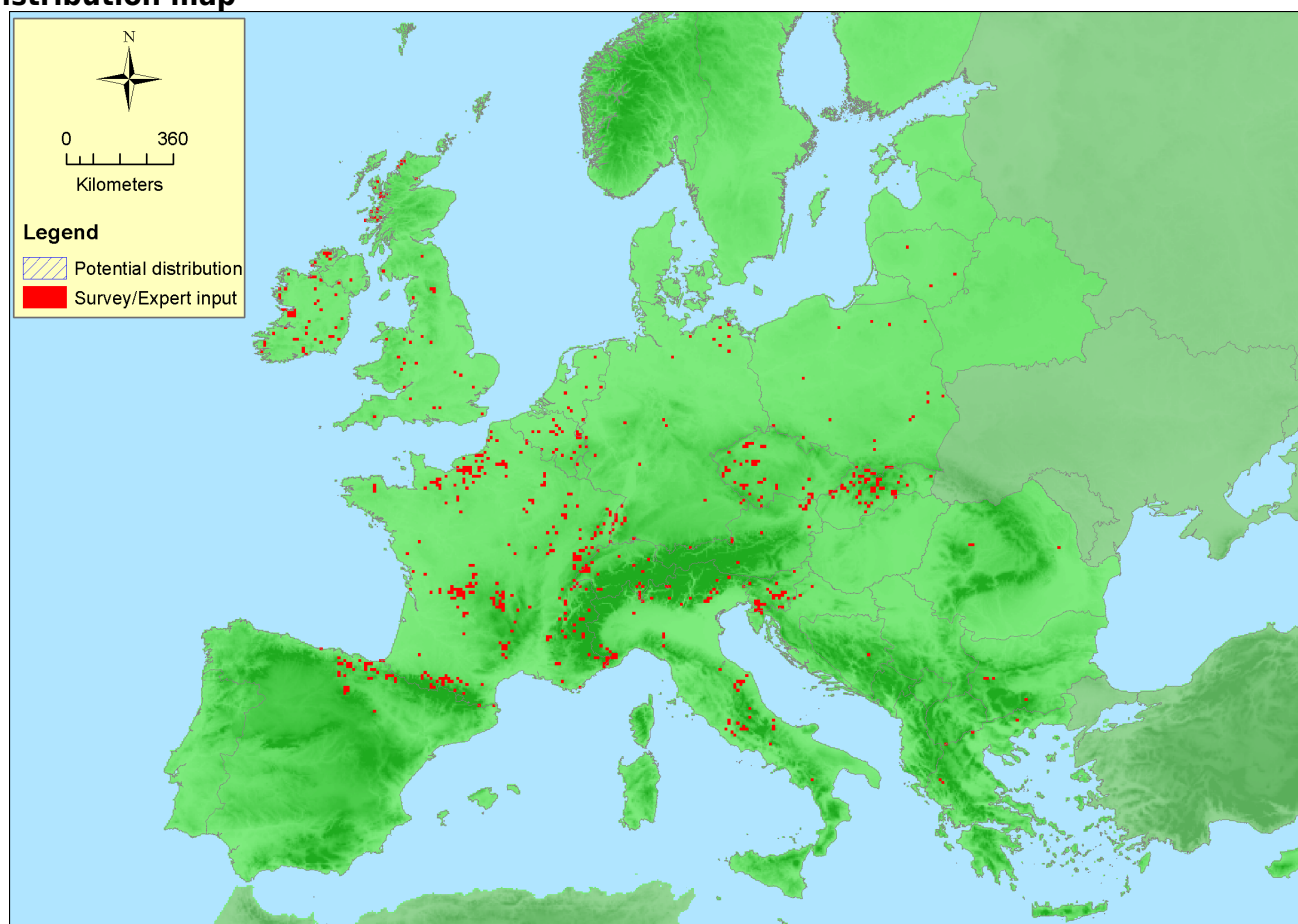
Geographic occurrence and trends

EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Belgium	Uncertain	Km ²	-	-
Czech Republic	Present	5-10 Km ²	Increasing	Decreasing
France	France mainland: Uncertain	Km ²	-	-
Germany	Present	unknown Km ²	Increasing	Stable
Ireland	Present	100 Km ²	Increasing	Increasing
Italy	Italy mainland: Uncertain	Km ²	-	-
Poland	Uncertain	Km ²	-	-
Slovakia	Present	20 Km ²	Increasing	Stable
Spain	Spain mainland: Uncertain	Km ²	-	-
UK	United Kingdom: Present	15 Km ²	Stable	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	4416400 Km ²	668	125-175 Km ²	
EU 28+	4416400 Km ²	687	125-175 Km ²	

Distribution map



The habitat type is described as a rather oceanic type, occurring mainly in Ireland and the UK. However, some other countries have also reported stable occurrences of *Corylus avellana* scrub as primary

vegetation. However, only few countries reported data, based on the "Atlantic" Habitat Definition that was provided. Therefore it is likely that the habitat is found in other countries, maybe with a somewhat different associated flora, but in few and rather small stands. The map provides probably an overestimated in central and southern Europe (secondary sites) and an underestimated in the UK and Ireland. Data sources: EVA.

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

95% It is possible that some small occurrences of stable *Corylus avellana* scrub occur on the Balkan and Switzerland.

Trends in quantity

The reported data is very imprecise, with Ireland reporting a rough range from 64 to 128 km². All countries indicated positive or stable trends in quantity at the present time.

- 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, although the core of its distribution is limited to the oceanic parts of Europe in Ireland and the UK.

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

Unknown

Justification

Partly yes, partly no. In the core of its distribution (Ireland, UK) the habitat can form large patches through an extensive suitable area. In more continental parts of Europe it is found mainly as small patches, forming a primary vegetation in extreme conditions, as on steep slopes, where no trees can survive.

Trends in quality

Overall a slight decrease in quality was reported by the Czech republic and the UK, while Germany and Slovakia reported stable conditions, and Ireland even an increase in quality due to decrease of grazing pressure. Overall the trend is estimated to be stable.

- Average current trend in quality

EU 28: Stable

EU 28+: Stable

Pressures and threats

Grazing and browsing can open up the canopy and prevent regeneration of the *Corylus ultimately* creating a kind of parkland in which older individual hazels can survive (E7.1 Temperate & hemiboreal wooded pastures and meadows).

List of pressures and threats

Agriculture

Intensive grazing

Conservation and management

In good conditions no management is needed.

List of conservation and management needs

No measures

No measures needed for the conservation of the habitat/species

Conservation status

There is no related Annex I habitat type.

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

In natural conditions the habitat can recover rather quickly from, for example winter storms, without human interventions but damage from intensive browsing and grazing can have slower recovery, with inhibited regeneration of the *Corylus* and loss of epiphytic cryptogams.

Effort required

10 years	20 years
Naturally	Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	+25/50% %	unknown %	unknown %	unknown %
EU 28+	+25/50% %	unknown %	unknown %	unknown %

Overall there is a positive trend of 25-50% over the last 50 years, based on data from only 5 countries, but probably covering more than 80% of the extent. The trend value is uncertain because of the broad range of present surface reported by Ireland. There is only data from EU28 countries, and the occurrence outside the EU28 is assessed to be marginal.

Criterion B: Restricted geographic distribution

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

There is no accurate distribution data available, but it is clear that the habitat is widespread (large EOO) and occurring in more than 50 grid cells of 10x10 km².

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+	0 %	0 %	unknown %	unknown %	unknown %	unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	0 %	0 %	unknown %	unknown %	unknown %	unknown %
EU 28+	0 %	0 %	unknown %	unknown %	unknown %	unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	0 %	0%	unknown %	unknown%	unknown %	unknown%
EU 28+	0 %	0%	unknown %	unknown%	unknown %	unknown%

The reported degradation by two countries is affecting low percentages of the extent (<10%) with low severity. This trend is compensated by the increasing quality reported by Ireland, as a result of less grazing pressure. Overall the trend is therefore stable or positive. The reported negative trend is mainly biotic, but because of the positive/stable trends both C1 and D1 values are filled as zero.

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	LC	DD	DD	LC	DD	DD	DD
EU28+	LC	DD	DD	DD	LC	LC	LC	DD	DD	DD	LC	DD	DD	LC	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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References

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