G2.1 Mediterranean evergreen Quercus woodland

Summary

This woodland habitat is naturally dominated by evergreen oaks with associated broadleaved sclerophyllous and lauriphyllous evergreen trees and shrubs adapted to the summer drought of the hot climate of the Mediterranean. It has been modified by long histories of exploitation, clearance and regrowth, as well as by natural disturbance from fires, disease and insect infestation. Such interventions have affected both the structure and species composition of stands and transitional degraded stages to maquis and garrigues and, in some regions, to savannah-like vegetation, are common. The tree canopy is often quite low and the layer beneath typically consists of other sclerophyllous or lauriphyllous species, as well as few deciduous tree and shrub species. Different trees and associates prevail in different regions and on different terrains. Major threats to this habitat type are fire, intensive forestry exploitation and grazing. Appropriate forest management with mild interventions and control of grazing are important for conservation.

Synthesis

The habitat is assessed as Least Concern for the EU28 and EU28+. The current trend in quantity is stable or increasing. Only in Italy and Spain a decreasing quality trend has been reported. The most important reason for the decline in quality has been cork exploitation and forest management. Overall an improvement of quality is expected due to more forest stands reaching maturity stage.

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

A subtype of *Quercus suber* dominated woodlands may be taken into account for further assessment, because it is declining in part of the range (Italy).

Habitat Type

Code and name

G2.1 Mediterranean evergreen Quercus woodland

Mediterranean evergreen *Quercus ilex* woodland, Corfu, Greece (Photo: John Janssen).

Mediterranean evergreen *Quercus suber* woodland, Corsica, France (Photo: John Janssen).

Habitat description

This woodland habitat is naturally dominated by evergreen oaks with associated broadleaved sclerophyllous and lauriphyllous evergreen trees and shrubs adapted to the summer drought of the thermo-mediterranean climate. Stands have been modified in various degrees due to long histories of exploitation, clearance and regrowth, as well as by natural disturbance from fires, disease and insect infestation, interventions which affect both the structure and species composition of stands. Transitional degraded stages of these woodlands to maquis and garrigues, are widespread throughout the distribution area of the habitat; in some regions there are transitions to the savannah-like vegetation of dehesas (Spain) or montado (Portugal) (Annex I habitat type 6310: Dehesas with evergreen *Quercus*), where the underlying vegetation can be largely unshaded pasture quite different from the associated flora of this woodland. In representative stands of this habitat, the tree canopy can be up to 15m (or more) high, although it is often lower; the layer beneath the oaks tree canopy typically consists of other sclerophyllous or lauriphyllous species, as well as few deciduous tree and shrub species. Different dominants and co-dominants and associates prevail in different regions and on different terrains; *Q. ilex* is the most widespread oak in these woodlands largely occurring on base-rich substrata throughout the meso-Mediterranean altitudinal belt. *Quercus ilex* subsp. *ilex* occurring from northern and western Iberia through France to the Adriatic region and Greece is the dominant species and the deciduous oak species *Q. pubescens* participant at the tree layer; *Pinus halepensis* is also a component of these woods in the Balkan peninsula localities. *Q. ilex* subsp. *rotundifolia* is extensive in Portugal and Spain in rather drier sites and more common in dehesas. *Quercus coccifera* is also widespread and often replaces *Q. ilex* around the Aegean, dominating in distinctive woodlands of Crete but elsewhere is less common in woodlands and mostly dominates maquis vegetation derived both from evergreen oak woodlands and thermophilous broadleaved woodlands. *Q. alnifolia* also dominates in some distinctive woodlands of Cyprus. *Q. suber* is primarily a western Mediterranean tree demanding moister climatic conditions than other evergreen oaks (500-1000mm annual precipitation) and can replace *Q. ilex* on more acidic and less fertile soils. *Quercus suber* is mainly distributed in Spain and Portugal and extends eastwards to a coastal belt in southern Italy; *Q. suber* has been of great commercial interest for its cork bark and acorns being a subsidiary crop used for feeding pigs. In cases that the evergreen oak woodlands occur on coastal dunes throughout the Mediterranean zone, these are considered part of the EUNIS habitat B1.7b: Mediterranean wooded dunes with *Quercus* spp.

Indicators of quality:

- No forest exploitations, especially in sub-type dominated by Q. suber no cork harvesting and forest management for ecological improvement purposes
- Natural composition of canopy
- Structural diversity/complexity with (semi)natural age structure or completeness of layers
- Typical flora and fauna composition of the region
- Presence of old trees and a variety of dead wood (lying or standing) and the associated flora, fauna and fungi
- Presence of natural disturbance such as treefall openings with natural regeneration
- Long historical continuity (ancient woodland) with high species diversity
- Survival of larger stands of forest without anthropogenic fragmentation and isolation (to support fauna which need large undisturbed forests)
- No man-induced very high population levels of ungulates

Characteristic species:

Vascular plants*: Quercus ilex ssp. ilex, Q. ilex ssp. rotundifolia, Q. coccifera, Q. suber, Arbutus unedo, Pistacia lentiscus, Rhamnus alaternus, Fraxinus ornus, Juniperus oxycedrus, Crataegus monogyna, Erica arborea, Phillyrea latifolia, P. angustifolia, Rubia peregrina, Smilax aspera, Hedera helix, Lonicera implexa,*

Tamus communis, Clematis flammula; Asparagus acutifolius, Ruscus aculeatus, Rubus ulmifolius, Teucrium chamaedrys, Brachypodium sylvaticum, Carex hallerana.

Classification

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

EUNIS:

G2.1 Mediterranean evergreen [Quercus] woodland

EuroVeg Checklist:

Quercion calliprini Zohary ex Quézel et al. 1992

Quercion alnifoliae Barbero et Quézel 1979

Quercion ilicis Br.-Bl. ex Molinier 1934

Querco rotundifoliae-Oleion sylvestris Barbero et al. in Rivas-Mart. et al. 1986

Quercion broteroi Br.-Bl. et al. 1956 corr. Rivas-Mart. 1972

Fraxino orni-Quercion ilicis Biondi et al. ex Biondi, Casavecchia et Gigante 2013

Cyclamini cretici-Quercion ilicis Barbero et Quézel ex Quézel et al

Arbuto andrachnes-Quercion cocciferae Barbero et Quézel 1979 Erico-Quercion ilicis S. Brullo et al. 1977

Annex I:

9330 Quercus suber forests

9340 Quercus ilex and Quercus rotundifolia forests

9390 Scrub and low forest vegetation with Quercus alnifolia

93A0 Woodlands with Quercus infectoria (Anagyro foetidae-Quercetum infectoriae)

Emerald:

G2 Broadleaved evergreen woodland

MAES-2:

Woodland and forest

IUCN :

1.4 Temperate Forest

EFT:

9.1 Mediterranean evergreen oak forest

VME:

G Mediterranean sclerophyllous forest and scrub

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

Yes

Regions

Mediterranean

Justification
This habitat represents an outstanding example of typical characteristic of the Mediterranean biogeographical region, in terms of area, species composition, structure and functioning.

Geographic occurrence and trends

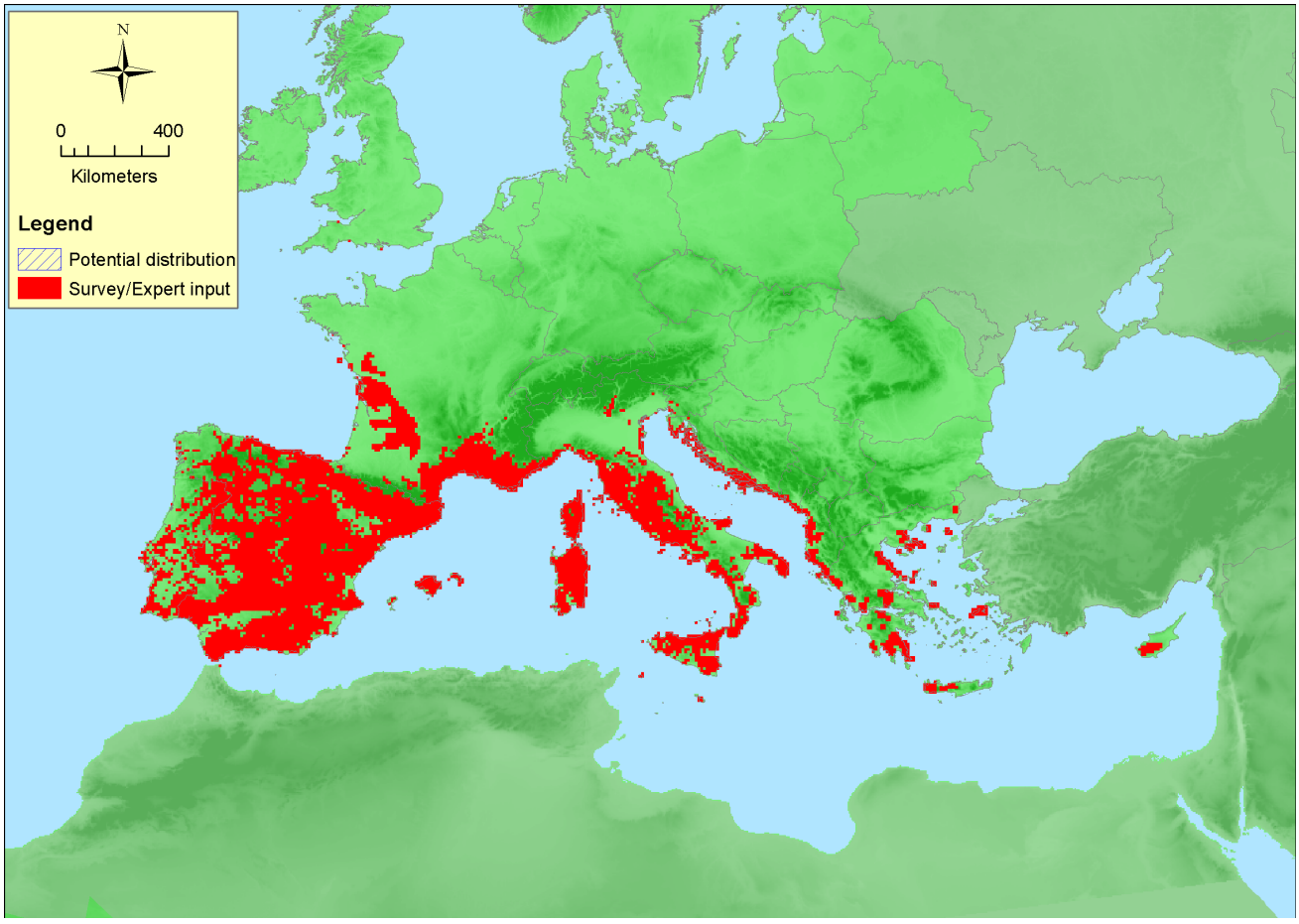
EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Croatia	Present	361 Km^2	Stable	Stable
Cyprus	Present	94 Km^2	Increasing	Increasing
France	Corsica: Present France mainland: Present	4000 Km^2	Increasing	Stable
Greece	Crete: Present East Aegean: Present Greece (mainland and other islands): Present	1837 Km^2	Stable	Increasing
Italy	Italy mainland: Present Sardinia: Present Sicily: Present	8050 Km^2	Stable	Decreasing
Portugal	Portugal mainland: Present	2930 Km^2	Increasing	Unknown
Slovenia	Present	0.5 Km^2	Stable	Stable
Spain	Balearic Islands: Present Spain mainland: Present	31855 Km^2	Increasing	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)
Bosnia and Herzegovina	Present	10 Km^2	Increasing	Stable
Montenegro	Present	10 Km^2	Unknown	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	3916450 Km^2	8142	17272 Km^2	
EU 28+	3916450 Km^2	8425	17292 Km^2	

Distribution map



The map is rather complete. Data sources: Art17, EVA, BOHN and NAT.

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

About 90% of the total distribution of the habitat lies within the EU28 countries.

Trends in quantity

The area of this habitat is considered to be stable or increasing everywhere in Europe.

- 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 EOO is greater than 50.000 Km^2 and there is no trend of decline in the EU28, except for Italy where a slight (-5%) decline is reported.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  No
  Justification
  The habitat is quite widespread across Europe with significant extent in several countries as Italy, France, Greece, Portugal and Spain.

Trends in quality

Based on the calculation of the extent and severity of degradation respectively of 31% and 25%, the current quality trend is considered stable or increasing. Not enough data are reported to estimate the historical and future quality trends.

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

Pressures and threats

Major pressures and threats to this habitat type are considered the fires, the forestry exploitation (harvesting cork) and grazing in forest/woodland.

List of pressures and threats

Sylviculture, forestry

Forest and Plantation management & use
Grazing in forests/ woodland
Forestry activities not referred to above

Urbanisation, residential and commercial development

Urbanised areas, human habitation

Human intrusions and disturbances

Outdoor sports and leisure activities, recreational activities

Natural System modifications

Fire and fire suppression

Geological events, natural catastrophes

Collapse of terrain, landslide

Climate change

Changes in abiotic conditions

Conservation and management

The suggested conservation approach for this habitat could be the adoption and implementation of an appropriate forest management plan with mild interventions; the applied management measures would allow for a structural improvement of these woodlands with more stands reaching at maturity stage. Through the abandonment of cork exploitation and/or woodland grazing, the *Q. suber* woodlands might turn into *Q. ilex* or mixed *Q. ilex* / *Q. suber* woodlands.

List of conservation and management needs

Measures related to forests and wooded habitats

Adapt forest management

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Conservation status

Annex 1 types:

9330: ATL U2, MED U1

9340 : ALP U1, ATL U1, CON FV, MED U1

9390 : MED FV

93A0 : MED FV

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

The natural regeneration capacity of the key species plays a crucial role in recovering of this habitat type after damage; no additional actions are necessary to be taken, except avoiding disturbances on natural succession process.

Effort required

20 years
Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	+3.5 %	unknown %	unknown %	unknown %
EU 28+	+3.5 %	unknown %	unknown %	unknown %

The habitat has been reported to be stable or increasing throughout its range, with a total of +3.5% positive trend in quantity calculated over the past 50 years. Only Italy has reported a negative trend of about -5% over the past 50 years.

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 is widespread with an EOO far larger than 50.000 Km^2, AOO much karger than 50 grid cells (10x10 km), and many locations.

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	31 %	25 %	unknown %	unknown %	unknown %	unknown %
EU 28+	31 %	25 %	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%

Most countries reported no or only slight declines, and the average values lie below the thresholds for Near Threatened.

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)

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