



Marsilea quadrifolia

Annex	II, IV
Priority	No
Species group	Vascular plants
Regions	Alpine, Atlantic, Continental, Mediterranean, Pannonian, Steppic

The fern *Marsilea quadrifolia* is circumpolar species – it is sporadically distributed in all continents except South America, as non-native species grows also in North America. In Europe most of its distribution are in the Mediterranean region, important distribution is also in the Pannonian lowland. Occur in Portugal, Spain, France, Italy, Germany, Austria, Slovakia, Hungary, Croatia, Bulgaria, Greece, Romania, Poland, Ukraine, Russia, Turkey. Grows in margins of warm lowland standing or periodically flowing waters with fluctuating or summer drying water level. Soils are heavy, with small amount of organic matter and sufficient storage of mineral nutrients. It requires longer period with high water level in spring and water level decrease in summer. IUCN European Red List, classifies the species as Near Threatened (NT). It is listed in red lists of different countries across its European distribution.

The current assessment is "Unfavourable Bad" situation in Continental and Mediterranean regions and "Unfavourable Inadequate" one in other three regions (Atlantic, Pannonian and Steppic region). The species is extinct in the Alpine region after that the Habitat Directive come into force and it is on the edge of extinction in Portugal. The assessments indicate worse overall situation of species than the IUCN European Red List (Near Threatened, NT).

The species is threatened mostly by the lowland water courses regulation, wetland drainage, drying-out of landscape, eutrophication, succession. Usually small size of local populations represents other threat source.

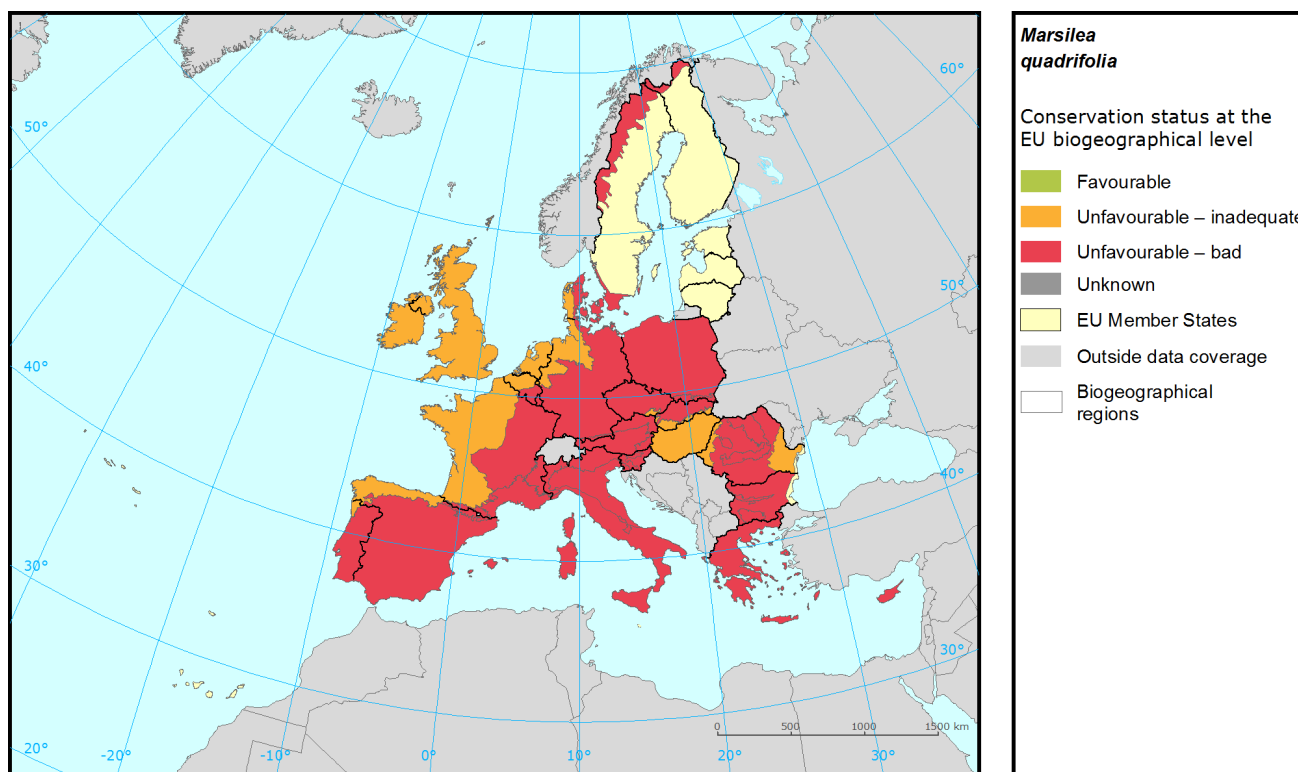
Changes in overall conservation status between 2001-06 and 2007-12 report are mostly caused by different methodical approach and better data rather than real change in conservation status in Alpine, Atlantic and Pannonian region. No changes in overall conservation status between 2001-06 and 2007-12 reports in Continental and Mediterranean region. The species was not reported from Steppic region 2001-06.

Better data required from Bulgaria, France and Greece.

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Assessment of conservation status at the European biogeographical level

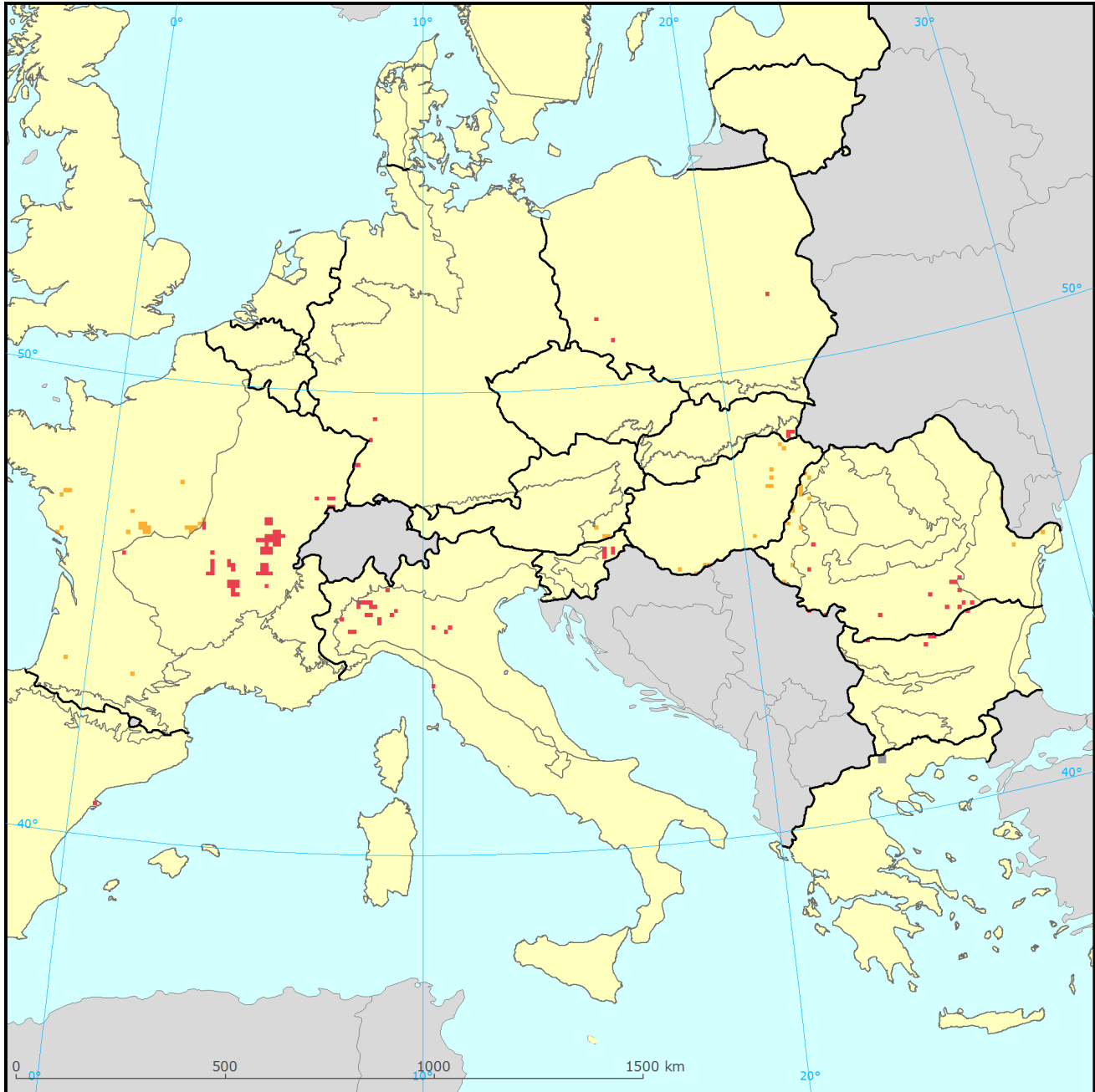


Region	Conservation status (CS) of parameters				Current CS	Trend in CS	% in region	Previous CS	Reason for change
	Range	Population	Habitat	Future prospects					
ALP					U2	-		XX	Genuine
ATL	U1	U1	XX	XX	U1	=	13	U2	Not genuine
CON	U2	U2	U2	U2	U2	-	68	U2	
MED	XX	U2	U2	U2	U2	-	2	U2	
PAN	U1	U1	U1	U1	U1	-	15	U2	Not genuine
STE	FV	U1	FV	FV	U1	x	2	XX	Not genuine

See the endnote for more informationⁱ








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Assessment of conservation status at the Member State level



Marsilea quadrifolia

Distribution and conservation status at the Member State level

- | | |
|---|--|
|  Favourable |  EU Member States |
|  Unfavourable – inadequate |  Outside data coverage |
|  Unfavourable – bad |  Biogeographical region |
|  Unknown | |

The map shows both Conservation Status and distribution using a 10 km x 10 km grid. Conservation status is assessed at biogeographical level. Therefore the representation in each grid cell is only illustrative.

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MS Region	Conservation status of parameters				Current CS	Trend in CS	% in region	Previous CS	Reason for change
	Range	Population	Habitat	Future prospects					
IT ALP								XX	
FR ATL	U1	U1	XX	XX	U1	=	100.0	U2	Better data
AT CON	U1	U1	U1	U1	U1	=	3.4		
BG CON	FV	FV	XX	U2	U2	-	3.4		
DE CON	U2	U2	U2	U2	U2	=	3.4	U2	
FR CON	U2	U2	U2	U2	U2	=	53.0	U2	
IT CON	U1	U1	U1	U2	U2	-	17.1	FV	Better data
PL CON	U1	U2	U1	FV	U2	+	2.6	U2	Genuine
RO CON	U1	U2	U1	U1	U2		12.8		
SI CON	FV	U2	U2	U2	U2	-	4.3	U1	Genuine
ES MED	U1	U2	U2	U1	U2	-	33.3	U2	
GR MED	XX	XX	XX	XX	XX		33.3	XX	
IT MED	U1	U2	U1	U2	U2	-	33.3		
PT MED	U2	U2	U2	U2	U2	x		U2	
HU PAN	U1	U1	U1	U1	U1	=	42.3	U2-	Changed method
RO PAN	FV	U1	U1	U1	U1		46.2		
SK PAN	U2	U1	U2	U1	U2	-	11.5	U2-	
RO STE	FV	U1	FV	FV	U1		100.0		

Knowing that not all changes in conservation status between the reporting periods were genuine, Member States were asked to give the reasons for changes in conservation status. Bulgaria and Romania only joined the EU in 2007 and Greece did not report for 2007-12 so no reason is given for change for these countries. Greek data shown above is from 2001-06.

Main pressures and threats reported by Member States

Member States were asked to report the 20 most important threats and pressures using an agreed hierarchical list which can be found on the [Article 17 Reference Portal](#). Pressures are activities which are currently having an impact on the species and threats are activities expected to have an impact in the near future. Pressures and threats were ranked in three classes 'high, medium and low importance'; the tables below only show threats and pressures classed as 'high', for some species there were less than ten threats or pressures reported as highly important.

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Ten most frequently reported 'highly important' pressures

Code	Activity	Frequency
J02	Changes in water bodies conditions	19
H01	Pollution to surface waters	13
I01	Invasive alien species	13
K01	Abiotic natural processes	13
K02	Vegetation succession/Biocenotic evolution	9
A02	Modification of cultivation practices	6
K04	Interspecific floral relations	6
M01	Abiotic changes (climate change)	6
A01	Agricultural cultivation	3
A07	Use of 'pesticides' in agriculture	3

Ten most frequently reported 'highly important' threats

Code	Activity	Frequency
H01	Pollution to surface waters	17
K01	Abiotic natural processes	17
J02	Changes in water bodies conditions	14
K02	Vegetation succession/Biocenotic evolution	14
I01	Invasive alien species	10
K04	Interspecific floral relations	10
A02	Modification of cultivation practices	7
A01	Agricultural cultivation	3
A07	Use of 'pesticides' in agriculture	3
M01	Abiotic changes (climate change)	3

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Proportion of population covered by the Natura 2000 network

For species listed in the Annex II of the Directive Member States were asked to report the population size within the Natura 2000 network. The percentage of species population covered by the network was estimated by comparing the population size within the network and the total population size in the biogeographical/marine region.

Percentage of coverage by Natura 2000 sites in biogeographical/marine region

	ALP	ATL	CON	MED	PAN	STE
AT			0			
BG			100			
DE			77			
ES				50		
FR		63	x			
HU					80	
IT	x		x	x		
PL			17			
PT				0		
RO			23		29	100
SI			100			
SK					88	

See the endnotes for more informationⁱⁱ

Most frequently reported conservation measures

For species listed in the Annex II of the Directive Member States were asked to report up to 20 conservation measures being implemented for this species using an agreed list which can be found on the Article 17 Reference Portal. Member States were further requested to highlight up to five most important ('highly important') measures; the table below only shows measures classed as 'high', for many species there were less than ten measures reported as highly important.

Ten most frequently reported 'highly important' conservation measures

Code	Measure	Frequency
6.3	Legal protection of habitats and species	20
4.2	Restoring/improving the hydrological regime	15
6.1	Establish protected areas/sites	15
7.4	Specific single species or species group management measures	15
4.1	Restoring/improving water quality	10
2.2	Adapting crop production	5
4.3	Managing water abstraction	5
6.0	Other spatial measures	5
7.0	Other species management measures	5
7.2	Regulation/ Management of fishery in limnic systems	5

This information is derived from the Member State national reports submitted to the European Commission under Article 17 of the Habitats Directive in 2013 and covering the period 2007-2012. More detailed information, including the MS reports, is available at:

<http://bd.eionet.europa.eu/article17/reports2012/species/summary/?group=Vascular+plants&period=3&subject=Marsilea+quadrifolia>

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i Assessment of conservation status at the European biogeographical level: Current Conservation Status (Current CS) shows the status for the reporting period 2007-2012, Previous Conservation Status (Previous CS) for the reporting period 2000-2006. Reason for change in conservation status between the reporting periods indicates whether the changes in the status were genuine or not genuine. Previous Conservation Status was not assessed for Steppic, Black Sea and Marine Black Sea regions. For these regions the Previous status is therefore considered as 'unknown'. The percentage of the species population occurring within the biogeographical/marine region (% in region) is calculated based on the area of GIS distribution.

ii Percentage of coverage by Natura 2000 sites in biogeographical/marine region: In some cases the population size within the Natura 2000 network has been estimated using a different methodology to the estimate of overall population size and this can lead to percentage covers greater than 100%. In such case the value has been given as 100% and highlighted with an asterisk (*). The value 'x' indicates that the Member State has not reported the species population and/or the coverage by Natura 2000. No information is available for Greece. The values are only provided for regions, in which the occurrence of the species has been reported by the Member States.