

AN ANNOTATED CHECKLIST
OF THE VASCULAR
PLANTS OF CATALONIA
(northeastern Iberian Peninsula)



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«Taxonomy is dynamic, beautiful, frustrating,
and challenging at the same time»

(Extracted from Tod F. Stuessy, *Plant Taxonomy*,
Columbia University Press, New York, 2009: 3)

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First edition: December, 2021

Composition: Kit-book Serveis Editorials, S.C.P., 2021. Barcelona, 2021

ISBN: 978-84-124850-2-8

B 20732-2021

This book is free to download from the Biblioteca Digital del Real Jardín Botánico (RJB-CSIC) website at: <https://bibdigital.rjb.csic.es/>



ABSTRACT

An updated and annotated checklist of the vascular plants of Catalonia (northeastern Iberian Peninsula) is provided, based on a critical review of literature, examination of herbarium specimens, as well as field work. Native and both naturalised and casual alien taxa are included. The native flora consists of 3460 taxa (at species and subspecies level) plus 260 hybrids. The vascular alien includes 1128 taxa; 613 (54.3%) out of them are casual and 515 (45.7%) are established. For each taxon documented, information of its distribution and relative abundance in the study area are given. For native taxa Red List categories are provided, while for non-native taxa the degree of establishment in the study area is given. The most important changes in several aspects such as taxonomy, new described taxa and new occurrences are indicated.

INTRODUCTION

The importance of checklists is well known since they provide information of species richness and endemism within an area, but also provide data on the number of introduced species. Checklists are therefore useful in biogeographical studies and for carrying out conservation programs. The relevance of checklists is even more justified now, since human destruction of natural environments and climate change are decimating and driving to extinction plant species with unknown environmental and social consequences (Boyd, 2008: 56).

Checklists, however, reflect our knowledge at a given moment and our own taxonomic judgement. Thus their usefulness is influenced by the assumption that they are never perfectly correct and the recognition that they will be in constant change (Funk, 1997). In the past few decades research in plant systematics has undergone a revolution (Stuessy & Funk, 2013). This research may lead to several nomenclatural changes: whether in the attribution of a plant to a family or changes in the name of the species. The dynamism of taxonomy and systematics leads to constant changes in circumscriptions and to taxonomic rearrangements, which requires periodic updates in the floristic information. Changes in scientific names can be a source of problems for botanists, but this should be seen as a sign of progress in achieving the goals of the science of Plant Systematics. Systematic botanists have always strived for a «natural» classification. One that reflects underlying evolutionary relationships, as such a classification has the strongest predictive power and the broadest utility (Reznicek & al., 2011). It is, therefore, advisable to provide updated information about scientific plant names based on solid and recent studies in order to convey this information in our scientific literature, databases and herbaria.

In addition to the fact that floras change, there has also been a considerable increase in floristic data, so it is therefore necessary to update all taxonomic and floristic information, even beyond our studied area, but to the entire Iberian Peninsula since rather recent floristic synthesis exist (Bolòs & Vigo, 1984-2001; Bolòs & al., 2005; Castroviejo & al., 1986-2021). These floristic synthesis are somewhat outdated in regard to the delimitation of genera and families in general. The Catalan floras (Bolòs & Vigo, 1984-2001; Bolòs & al., 2005) are particularly problematic when attempting to perform botanical evaluations with administrative implications since in many cases it is difficult to determine with certainty whether a given taxon is found within the boundaries of autonomous Catalonia. This is due to the presence of data encompassed within a «Principat de Catalunya» which also includes the northern Catalonia under French administration (Department of Pyrénées-Orientales), Andorra and the Catalan-speaking eastern strip of Aragon. We excluded those territories from our geographic circumscription (Figure 1).

There are also specific documents on chorology (Biodiversity data bank of Catalonia, hereinafter BDBC —Font, 2021—, Pyrenees Flora Atlas, Orca), red books (Sáez & al., 2010) and alien flora (Exocat), but they all have gaps that are in urgent need of an update.

As a result of our study, a checklist of the vascular alien flora of Catalonia and an update of the red list of threatened plants of Catalonia have been published recently (Aymerich & Sáez, 2019b; 2021).

This study aims to integrate, update and expand the knowledge about vascular plants of Catalonia, and thus fill a gap of information on the taxonomy, diversity and distribution of these plants. In this context, our checklist does not intend to replace floras and other type of materials, but is intended to help in a rapid and synthetic access to current knowledge of the vascular flora of Catalonia.

MATERIALS AND METHODS

Study area

Our area is circumscribed to the Autonomous Community of Catalonia (32.106 km²), Spain (Figure 1). No data from neighboring territories outside the current administrative circumscription have been considered, despite their inclusion in earlier Catalan floras (Bolòs & Vigo, 1984-2001; Bolòs & al., 2005). However, some of these data have been used in the additional appendices of excluded or doubtful taxa when i) deemed necessary to clarify possible confusions or ii) because these data are indication of possible presence of a taxon not yet found within the territory covered in the Checklist.

Taxa included in the Checklist

- Native taxa whether extant or extinct.
- Non-native taxa that are naturalised, escaped from cultivation, or persist in the wild.
- Hybrids (interspecific or intergeneric)

Data sources

The checklist has been prepared based on all sources of floristic and taxonomic information to which the authors had access. References published before November 2021 have been incorporated into the checklist. These sources are heterogeneous and include floristic synthesis, local floras, research articles, databases and unpublished information (ours or from other authors). Our core source of information stems from these floristic and chorological syntheses: Bolòs & Vigo, 1984-2001; Bolòs & al., 2005; Castroviejo, 1986-

2021; ORCA Atlas; BDBC. That information was reviewed in order to adapt it to current taxonomic criteria and territorial circumscriptions as used in this checklist. When necessary (in the cases of poorly documented reports and eccentric locations) a filtering to assess the reliability of the data was carried out. This filtering is especially necessary in the case of databases, which often incorporate a non-negligible proportion of erroneous references. An important source of information was herbarium material (mainly BC, BCN, HGI, JACA and MA). Occasionally, several botanists provided relevant information on species or unpublished data.

Format of the Checklist

The information provided for each taxon are: accepted name together with relevant synonyms; (sub)endemic status where appropriate; conservation status (for native taxa, hybrids excluded); degree of naturalisation (for non-native taxa); distribution and abundance within the regions recognised and additional comments where appropriate.

Taxonomic treatment

The order and taxonomic circumscription of families follow the classification proposed in PPG I (2016) for ferns and fern allies, by Christenhusz & al. (2011) for gymnosperms and in APG IV (2016) for Angiosperms, with the exception of Dipsacales (Reveal, 2011), and Boraginales (Luebert & al., 2016). Genera within each family and species within each genus are all ordered alphabetically. Finally, within each genus, hybrid taxa are included, which are also organised alphabetically.

Genus and species-level taxonomy follows, in general terms, Euro+Med PlantBase (Euro+Med 2006 onwards). However, modifications to this schema have been made to recognise subsequent changes presented in recent revisions, monographs and systematic or phylogenetic studies. Moreover, relevant floras and checklists of neighbouring areas have been also consulted. In the case of taxonomic disagreements among the sources, we chose a taxonomic concept based on our own taxonomic expertise.

Accepted names and synonyms

The taxonomic authority for names is provided following Greuter & von Raab-Straube (2008), by suppressing names preceding the particle «ex». The abbreviation of authors' names follows the International Plant Names Index (IPNI, online version), which basically follows Brummitt & Powell (1992). The scientific name for accepted taxa is written in boldface (black for native and grey for non-native taxa). Synonyms (in italics) in square brackets, follow the accepted name. Most common synonyms are provided, usually including the accepted names in Bolòs & al. (2005) and Castroviejo (1986-2021). In order to simplify the synonymy, no information is provided on homotypic or heterotypic synonyms.

Hybrids

The checklist also includes hybrids (inter-specific or subspecific). Parental taxa of hybrids are also given in square brackets following the accepted scientific name. However, scientific names are sometimes unavailable for some hybrids, which are therefore provided only with hybrid formulae. The list of hybrids should be regarded as approximate since the information published is scant and often inaccurate. Besides, the hybrid origin for many of those listed has not been unequivocally demonstrated.

Endemic taxa

For the delimitation of endemic taxa (at the species or subspecies level) we have adopted the criterion in Sáez & al. (2010) which includes i) strict endemics: taxa restricted to the area included within the administrative boundaries of the territory considered, and ii) subendemics: taxa with more than 50% of its entire distribution area —or global population, something rarely applied when data are available— within the territory. «Endemic» or »Subendemic» is placed before the regions in which a taxon occurs to denote whether a taxon is a strict endemic or a subendemic, respectively.

Conservation status assessment

As a result of this checklist, the red list of vascular plants from Catalonia has been updated (Aymerich & Sáez, 2021a). The conservation category is assigned according to the standards of IUCN (2012). The same categories recognised in the Redbook of the vascular plants of Catalonia (Sáez & al., 2010) are assigned, albeit with some changes. These changes are of two types: 1) Assessment category for taxa discovered after 2010; 2) Re-evaluation of taxa known as a result of improved data available. For non-endemic taxa, assessments followed the Guidelines for Application of IUCN Red List Criteria at Regional Levels (IUCN 2003). The category NE (Not Evaluated) is assigned to all non-native taxa and hybrids.

Non-native taxa

An inventory of the vascular alien flora of Catalonia has been published (Aymerich & Sáez, 2019b) while preparing this checklist. Non-native taxa include plants which have supposedly established through anthropogenic activity, regardless of the period of the introduction and the degree of naturalisation. The distinction between native and non-native taxa is not always clear, especially for alien plants that have become established many centuries ago, or —on the contrary— natives that grow in disturbed habitats or in natural habitats that have almost vanished. There is always a risk of incorrectly asserting the non-native condition of a taxon, so when in doubt, we have chosen to assign the one that seems most likely, expressing the uncertainty in the remarks. For taxa allegedly introduced centuries ago and for which little information exists about their origin, we have considered them as non-native if their populations are mostly associated with clearly anthropogenic habitats. This would be the case for most plants that have traditionally been known as archaeophytes.

The degree of naturalisation in the territory is indicated according to three categories:

C- Casual alien plants: Alien plants found once or several times, that may be successful and even reproduce occasionally, but are unable to form more than briefly lasting populations. The persistence of plant populations of these taxa usually relies on repeated introductions.

N-Naturalised alien plants: Alien plants that form mid or long-lasting self-sustained populations without human intervention. However, these plants have little success for expansion in (semi)natural habitats or are restricted to man-made habitats.

I-Invasive alien plants: Alien plants that fall under the definition for naturalised plants, but produce a large number of reproductive offspring, spreading far from their parent plants. These plants expand successfully in natural or semi-natural habitats.

The degree of naturalisation we assigned to each taxon corresponds to the maximum in the area, although it may be lower elsewhere. The information published on many alien species is incomplete or confusing, so it is hard to accurately assess the degree of naturalisation; in such instances we assigned the most likely degree of naturalisation based on available data.

Distribution in the studied area

The documented presence or presumed absence of every taxon in each of the thirteen geographical regions is provided. The geographical regionalisation follows Bolòs & Vigo (1984) and Bolòs (1985) with modifications (mainly affecting the delineation of a new geographical region in the northern slope of the Pyrenees Pa, Atlantic Pyrenees). The regional boundaries are shown in Figure 1. The geographical regions considered are:

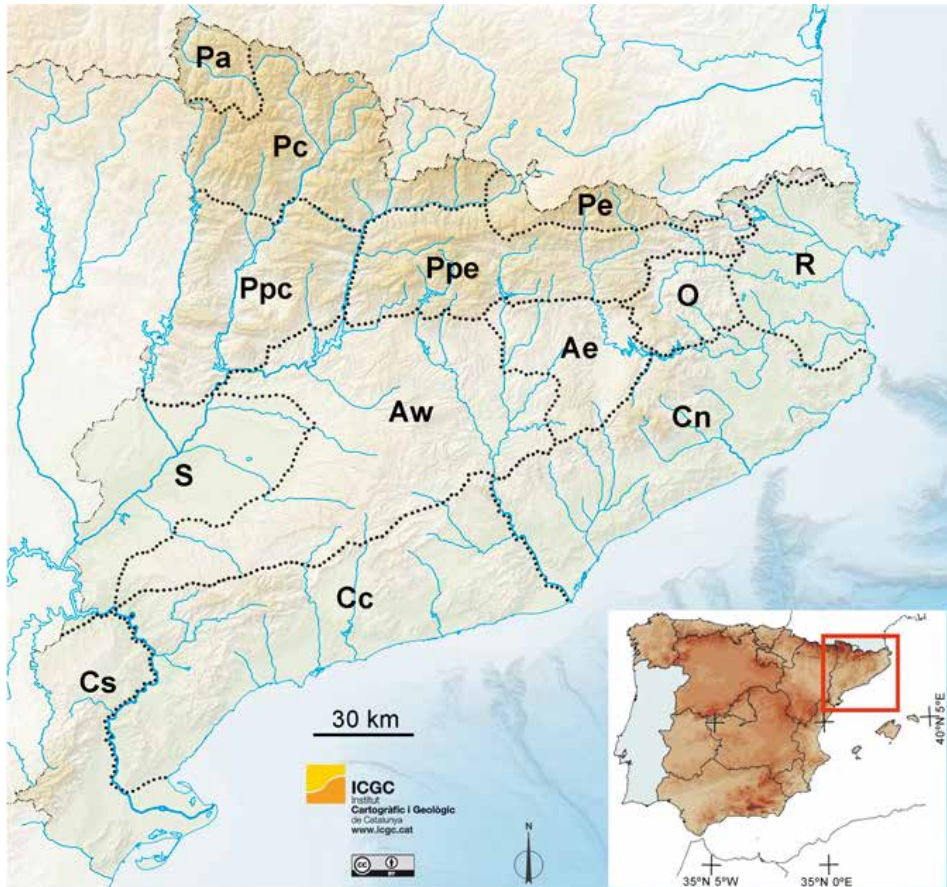


Figure 1. Studied area and geographical regions considered. Abbreviations: Pa: Atlantic Pyrenees; Pc: Central Pyrenees; Pe: Eastern Pyrenees; Ppc: Central Pre-Pyrenees; Ppe: Eastern Pre-Pyrenees; Ae: Eastern Aussegarric; AW: Western Aussegarric; S: Sicoric; O: Olositanic; R: Ruscinic; Cn: Northern Catalanidic; Cc: Central Catalanidic; Cs: Southern Catalanidic.

Pa (Atlantic Pyrenees). This geographical region, which includes high mountains (seldom exceeding 3000 m a.s.l.) is restricted to the Val d’Aran. Located on the northern slope of the Pyrenees, its climate has an Atlantic influence, unlike the rest of Pyrenean regions, all within the southern slope, with a greater Mediterranean influence. Geologically, both siliceous rocks and limestone are well represented. It is sparsely inhabited, its landscape dominated by forests and pastures.

Pc (Central Pyrenees). This is the axial region of the Pyrenees west of the Cerdanya-Conflent depression. Together with the prior region includes areas of higher altitude (to above 3100 m a.s.l.). The climate has a continental influence. Geological materials are heterogeneous but largely siliceous. The region has a very low population density. The landscape consists of forests and pastures.

Pe (Eastern Pyrenees). It consists of the axial region of the Pyrenees east of the Cerdanya-Conflent depression, including the entire plain of Cerdanya and the lower elevation slopes located north of it. The Moixeró mountain defines its western boundary and the Albera massif its eastern-most. Elevations are lower than for the central Pyrenees. Its climate has some maritime influence (exception for the more continental plain of Cerdanya) and geology largely dominated by siliceous rocks. Human population density is low, but higher than other Pyrenean regions. Agriculture has a greater presence (concentrated in the plain of Cerdanya).

Ppc (Central Pre-Pyrenees). Includes the Pre-Pyrenean mountains west of the river Segre. In this region altitudes rarely exceed 2000 m a.s.l. The climate is continental and although calcareous materials often dominate, siliceous substrates are represented in some areas. Human population density is low and concentrates within agricultural valleys, while mountainous areas are almost uninhabited, with well-preserved natural habitats.

Ppe (Eastern Pre-Pyrenees). Includes the Pre-Pyrenean mountains east of the river Segre. In this region mountains have extensive areas above 2000 m a.s.l., of greater elevation than those in the Central Pre-Pyrenees. The climate is heterogeneous (the maritime influence of the eastern region, contrasts with the marked continental influence of the western region). The substrate is basically limestone. Human population density is low and the landscape is dominated by forests.

Ae (Eastern Ausosegarric). Both Ausosegarric regions include the eastern end of the Ebre river basin and consist of a series of valleys and small hills that separate the plain of Lleida (Sicoric territory) and Catalanidic mountains. Eastern Ausosegarric territory includes the easternmost and more humid region, bordering the middle and upper basin of the river Llobregat on the west. It is a mid-altitude region with sub-Mediterranean climate of some continental influence. Geological materials consist of carbonated rocks. Human population density is moderate and the landscape a mosaic of forests and agricultural land.

Aw (Western Ausosegarric). Includes the areas between Eastern Ausosegarric (*Ae*) and Sicoric (*S*) regions. Lime outcrops are dominant and gypsum is often present. The climate ranges from Mediterranean to sub-Mediterranean with a continental tendency. The population density is moderate and the landscape corresponds to a mosaic of forests and crops, with a greater proportion of cultivated areas than in Eastern Ausosegarric region.

S (Sicoric). Includes lowlands of the Ebre river basin (commonly known as the Plain of Lleida or Plana de Ponent) and the slopes north of the Ebre river. It is a region of low altitude (usually below 400 m a.s.l.), with a semiarid continental climate (one of the most arid in Europe). The geological materials consist of Quaternary and Tertiary sediments with significant presence of gypsum often dotted with small saline depressions. The severe drought and continentality conditions favour the dominance of shrublands. Human population density is moderate and most of the land is under cultivation (much of it currently irrigated); natural habitats are few and fragmented.

O (Olositanic): A vaguely defined region of mountains and tectonic sinks (Transversal range) connecting the Pyrenees and Pre-littoral mountains. Climate is humid and range from Mediterranean to sub-Atlantic. The geological materials are heterogeneous, comprising limestone, siliceous and volcanic substrates. Human population density is moderate and the landscape corresponds to a mosaic of forests, pastures and cropland.

R (Ruscinic). Maritime lowland surrounded by mountains (Eastern Pyrenees, Transversal range and Catalanidic range). The boundary with the *Pe* and *Ppe* regions is somewhat arbitrary, but it is generally accepted as being below 400-500 m a.s.l. Along with its lower elevation, its climate is also drier than the surrounding regions. Geological materials are essentially Tertiary and Quaternary sedimentary deposits, although siliceous and limestone outcrops are present. The climate is clearly Mediterranean. Human population density is moderate to high, and most of the landscape is under cultivation, with a few natural habitats restricted to peripheral mountains and some coastal areas.

Cn (Northern Catalanidic). The three Catalanidic geographical regions comprise the coastline and the prelitoral swath of Catalonia located south of the Ruscinic region, that includes the mountains of the Catalan Coastal Range. The northern Catalanidic region includes the areas comprised between the Ruscinic territory and the Llobregat river. The climate is Mediterranean, with sub-Atlantic climate areas in the pre-coastal mountains (maximum altitude of about 1700 m a.s.l. in the Montseny massif). The region is geologically heterogeneous but predominantly siliceous. It has the highest human population density of all regions as it includes the metropolitan area of Barcelona. Although largely urbanised, the mountains harbour extensive forest areas.

Cc (Central Catalanidic). This includes the coastal and pre-coastal area between the rivers Llobregat and Ebre. Mountains (up to 1200 m a.s.l.) occupy an important part of the territory. The climate is typically Mediterranean, more xeric than in the coastal zone of the northern Catalanidic region. Carbonated substrates are predominant, with important outcrops of siliceous rocks in Prades mountains. The coastline is heavily urbanised and plains have been cultivated for centuries, while in the mountains natural habitats predominate.

Cs (Southern Catalanidic). Includes the coastal and pre-coastal areas south of the Ebre river and its entire delta. It is a rather heterogeneous region with extensive wetlands and saltmarshes (the best preserved of

Catalonia) of the Ebre delta, along with (non deltaic) lowlands and an important mountain range (Ports massif, with maximum altitudes above 1400 m a.s.l.). Geological materials are mainly alluvial deposits and limestone rocks. Human population density is low, and the landscape in the plains is essentially agricultural whereas in the mountains forests predominate.

Range occurrence

For each geographical region the range of occurrence (not a measure of abundance) of each concrete taxon is stated, with two categories: widespread and narrowly distributed. «Widespread» means that the taxon exists in a large portion of the region, or it is at least widely distributed within a significant portion of the region. «Narrowly distributed» means that the taxon exists in one or a few locations. Regardless of the assignment to the range occurrence, a taxon can have very different population sizes (thousands of individuals to a single specimen). The main criterion for applying the range occurrence has been the area of presence within the geographical region (on the basis of UTM 10x10 km squares from which a taxon has been reported). Taxa that are widespread within a region have the acronym for that region underlined, whereas it is not if only narrowly distributed.

A doubtful presence in a region is denoted by a question mark «?» in front of the region acronym, and local extinctions by a «+» when evidence is available.

Remarks

Comments are provided (when necessary) to help understanding the situation of certain taxa. In the case of those reported from a single locality, a reference is provided. Occasionally, references are also given for taxa whose populations are restricted to a very small area or when known from with less than five localities.

Supplementary lists (doubtful taxa and excluded taxa)

Taxa whose presence is doubtful and those to be excluded from the flora of Catalonia are given in appendices 1 and 2, respectively, arranged alphabetically; a remark is provided.

Doubtful taxa in the study area are those reported based on data of dubious credibility and whose presence is not been confirmed by a herbarium specimen.

Taxa to be excluded are those that having reported from the study area in modern times, there is sound evidence that the reports are unequivocally wrong.

Data analysis

To define the chorological groups, we used Bolòs & Vigo (1984-2001) methodology. For identifying hierarchical floristic similarities among the geographical regions we ran a cluster analysis for all native species and subspecies (hybrids excluded) in the studied area, based on Sørensen distances and the unweighted pair-group average hierarchical sorting strategy (unweighted pair-group method with the arithmetic mean). The cluster analysis was performed using the program PAST 3.26 (Hammer & al., 2001).

Additional abbreviations

The following conventions and abbreviations have been used:

AFLP = amplified fragment length polymorphism

aggr. = aggregate, a group of closely-related species

auct. = *auctorum*, meaning of authors. Used to denote that certain authors have misapplied the names as now understood.

BDBC = Biodiversity data bank of Catalonia (Font, 2021).

cpDNA = chloroplast DNA

incl. = including

ITS = internal transcribed spacer

loc. class. = *locus classicus*, the locality from which a taxon was first described.

nom. illeg. = illegitimate name

nom. inval. = invalid name

p.p. = in part

sect. = section

sensu = «in the sense of», or following the taxonomic concept of a particular author or set of authors.

sp. = species (singular)

subsect. = subsection

subsp. = subspecies (singular)

subvar. = variety

unpubl. = unpublished

var. = variety

? = uncertain status (synonymy, endemic character or presence uncertain)

+ = extinct in a geographical region

RESULTS

Composition of the vascular flora

The native vascular flora of the studied area includes 3460 taxa at the species or subspecies level (3305 species and 155 subspecies), plus 260 hybrids. These native taxa belong to 895 genera and 139 families. Non-native taxa add up to 1128 (species and subspecies, hybrids included), belonging to 561 genera and 123 families.

The native flora of Catalonia at the species or subspecies level represents a bit over half (c. 53%) the flora of the Iberian Peninsula (Table 1) and slightly less than one third (c. 30%) of the European Flora (Tutin & al., 1980). However these comparisons should be taken with extreme caution, since differences regarding taxonomic criteria exist among the many regional checklists. Information on floristic richness (i.e., number of taxa) for several countries and regions from southwestern Europe is summarised in table 1, arranged in decreasing order of number of native taxa.

Table 1. Comparison of the number of native taxa (at species and subspecies level, hybrids excluded) for several countries and regions, arranged in decreasing order of number of native taxa. Updated data: [1]: Sáez & al. (unpubl. data, May 2021); [2]: M. Cueto, G. Blanca and J. Fuentes (January 2021); [3] Ferrer-Gallego (unpubl. data, April 2020).

Area	Taxa	Source
Italy	8195	Bartolucci & al. (2018)
Iberian Peninsula + Balearic Islands	6550	updated from Ramos & al. (2021) [1]
Iberian Peninsula	6337	updated from Ramos & al. (2021) [1]
Mainland Spain	6214	updated from Ramos & al. (2021) [1]
Andalusia	4067	updated from Cueto & al. (2018) [2]
Alps	3950	Aeschimann & al. (2011)
Pyrenees	3652	Gómez & al. (2017)
Piemonte	3464	Bartolucci & al. (2018)
Catalonia	3460	this study
Tuscany	3370	Bartolucci & al. (2018)
Aragon	3115	Atlas Flora Aragón (2005)
Comunitat Valenciana	2853	updated from Mateo & Crespo (2014) [3]
Sicily	2763	Bartolucci & al. (2018)
Portugal	2678	updated from Ramos & al. (2021) [1]
Navarra	2574	Lorda (2013)
Corsica	2356	Jeanmonod & al. (2009)
Sardinia	2301	Bartolucci & al. (2018)
Balearic Islands	1587	updated from Sáez & al. (2013)
Andorra	1482	updated from Carrillo & al. (2008)

The richness of taxa in the studied area is rather uneven. Number of taxa at the regional level (geographical regions) is shown in table 2. The region showing the higher floristic richness (total taxa) is Cn. This region has a high environmental complexity, but due to its proximity to the metropolitan area of Barcelona, it may have been disproportionately studied, thus contributing to a greater species count compared to the other regions.

Table 2. Number of taxa occurring within each of the recognised geographical regions. For native taxa hybrids are excluded.

Region	Total taxa	Native taxa	Alien taxa
Pyrenees	3134	2694	440
Pa	1584	1505	79
Pc	2156	1938	218
Pe	2136	1874	262
Ppc	1875	1663	212
Ppe	2183	1844	339
Ebre basin	2102	1631	471
Ae	1510	1179	331
Aw	1517	1159	358
S	1330	1074	256
Littoral	3579	2587	992
O	1570	1251	319
R	1986	1561	425
Cn	2767	1906	861
Cc	2442	1776	666
Cs	2055	1592	463

Ten species-rich families make up 57% of the native flora of our area (hybrids excluded): Asteraceae (478), Poaceae (287), Fabaceae (256), Caryophyllaceae (174), Brassicaceae (171), Rosaceae (157), Lamiaceae (125), Cyperaceae (111), Apiaceae (108) and Plantaginaceae (101).

The Biogeographic spectrum of the native taxa (hybrids excluded), arranged according to Bolòs & Vigo (1984-2001), points out the obvious prevalence of Mediterranean elements (36.2%). Euro-Siberian elements are rather numerous as well (24.7%). Orophyte taxa (in a broad sense, including Mediterranean orophytes) amount to 16.8%. Participation of Arctic-Alpine and Boreo-Alpine elements is relatively low (5.1%). Taxa with Pluri-regional distributions comprise 17.2% of taxa, those of Holarctic distribution being the most abundant (59.8% of Pluri-regional taxa).

The similarity dendrogram for species (Figure 2) shows a relatively high floristic affinity (Sørensen coefficient >0.5) between most groups. The geographic regions recognised in our study were separated into two main clusters: (1) a Pyrenean cluster, and (2) a southern (non-Pyrenean) cluster including other geographic regions of the studied area. Within the Pyrenean cluster, our results confirm the unique phytogeographical character of the Aran Valley (Pa, see Figure 1) as a distinct region, marked by many Atlantic species. Further evidence of the singular character of the vascular flora in the Aran Valley was demonstrated by Andrés & Font (2011). Within the southern (non-Pyrenean) cluster, the Sicoric (S) is a divergent floristic region (Figure 2). The Sicoric region shows floristic affinities with the central area of the Ebre basin (Central Aragon) as a result of sharing semiarid climate, among other factors (i.e., lithological composition and low altitude). Two subgroups of regions can be recognised within this non-Pyrenean cluster: one that includes regions with a coastline (R, Cn Cc and Cs) and the one with regions without (Aw, Ae and O). Within the latter subgroup, the Olositanic (O) is a divergent floristic region, heterogeneous and poorly characterised. Perhaps the absence of coastal areas in the Olositanic region (unlike R, Cn Cc and Cs) determines a greater affinity of its flora with central and eastern regions of the Ebre basin.

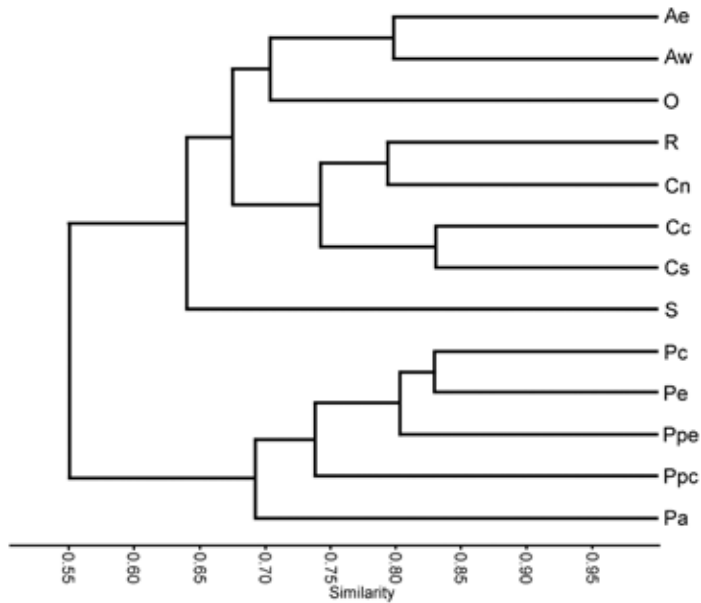


Figure 2. Similarity dendrogram of native taxa (species and subspecies) using the Sørensen coefficient and the Unweighted Pair Group Method with Arithmetic Mean (UPGMA) algorithm.

Endemism

The number of endemic taxa (excluding those of uncertain endemic character) is rather low: 29 taxa endemic in the strict sense, or 0.8% of the native flora. When subendemic taxa are considered the percentage rises to 3.7%. This percentage (which may vary depending on how certain micro-species of taxonomically complex genera such as *Hieracium L.* are considered) is lower to that of surrounding areas (Table 3). This table provides information on proportion of endemic taxa for several countries and regions, arranged from higher to lower percentage of endemism.

Table 3. Proportion of endemic taxa on the whole native flora for several countries and regions, arranged from higher to lower percentage of endemism. The percentage of strict endemics are provided (in brackets) for several areas. Updated data: [1]: Sáez & al. (unpubl. data, July 2021); [2]: M. Cueto, G. Blanca and J. Fuentes (January 2021); [3] Ferrer-Gallego (unpubl. data, April 2020).

Area	Endemic taxa (%)	Source
Iberian Peninsula + Balearic Islands	33.1 [29.8]	updated from Ramos & al. (2021) [1]
Iberian Peninsula	31.7 [28.2]	updated from Ramos & al. (2021) [1]
Mainland Spain	30.7 [21.5]	updated from Ramos & al. (2021) [1]
Italy	20.8	Bartolucci & al. (2018)
Sicily	15.4 [9.9]	Raimondo & al. (2010)
Corsica	12.7 [5.5]	Jeanmonod & al. (2009)
Alps	12.6	Aeschimann & al. (2011)
Andalusia	11.7 [9.9]	updated from Cueto & al. (2018) [2]
Sardinia	11.7 [7.5]	Fois & al. (2017)
Balearic Islands	10.4 [9.6]	updated from Sáez & al. (2013)
Comunitat Valenciana	6.0 [2.8]	updated from Mateo & Crespo (2014) [3]
Pyrenees	5.5	Gómez & al. (2017)
Portugal	4.8	Buire & al. (2016)
Aragón	4.2	Atlas Flora Aragón (2005)
Catalonia	3.7 [0.8]	this study

Endemic and subendemic taxa belong to 30 families (over 139, i.e. 21.6%) and 67 genera (over 893, i.e. 7.5%). Ferns and fern allies are represented by two endemic taxa (*Isoetes creussensis* and *Asplenium seelosii* subsp. *catalaunicum*), while gymnosperms have no endemic representatives. Angiosperms make up 98.5 % of the endemic (in broad sense) taxa. The ten families with the highest number of endemic taxa are Asteraceae (24 taxa, from which 7 are strictly endemic to the studied area), Brassicaceae (12/1), Caryophyllaceae (11/2), Plumbaginaceae (10/5), Lamiaceae (10/0),

Rosaceae (8/3), Ranunculaceae (6/1), Saxifragaceae (6/3), Plantaginaceae (5/0), Apiaceae (4/1) and Poaceae (3/0). Seven of these families are among the best represented in the native Catalanian flora (see above).

Most endemic and subendemic taxa occur in mountain areas: Pyrenees (94 endemic taxa) and secondarily in the catalanidic mountains and coastal areas (64 endemic taxa). In the Ebre basin (Sicoric and Ausosegarric territories) the endemic taxa are few (Table 4). Conversely, the main concentration of endemic taxa (in strict sense) occurs in the Catalanidic Mountains and coastal areas (18 taxa, Table 4). No endemic species (in strict sense) occurs in all three main geographical regions as defined in table 4 (Pyrenees, Ebre basin and Littoral).

Table 4. Number of endemic taxa occurring in each of the recognised geographical regions.

Geographic region	endemic (sensu stricto) + subendemic taxa	endemic (sensu stricto) taxa
Pyrenees	94	12
Pa	23	0
Pc	55	3
Pe	60	2
Ppc	40	3
Ppe	59	8
Ebre basin	22	1
Ae	14	1
Aw	14	1
S	9	0
Littoral	64	17
O	18	0
R	22	5
Cn	27	7
Cc	36	6
Cs	26	4

Unlike the results obtained for the whole native flora, the similarity dendrogram of endemic (including subendemic) species and subspecies (Figure 3) shows a low floristic affinity between most groups. The southern regions (Cc and Cs) are distinct in terms of the endemic species and subspecies composition, as they make up a cluster that is separated from other regions (Figure 3). It is well documented that the endemic flora of southern Catalonia includes several exclusive endemics as well as subendemics that are shared with the Iberian mountain system and the eastern Iberian Peninsula (Sáez, 2010b; Sáez & al., 2010). In the similarity dendrogram, apart from the small cluster that includes the southern regions, a larger one can be recognised, subdivided into two main clusters (Pyrenean and non-Pyrenean regions). Within the non-Pyrenean cluster, the most divergent is the group of the two westernmost regions of the Catalanian Ebre basin (Aw and S). Within the Pyrenean cluster, the northernmost region (Atlantic Pyrenees, Pa), with a noticeably Atlantic influence, is a diverging floristic region, as stated above for the whole native flora (see Figure 2).

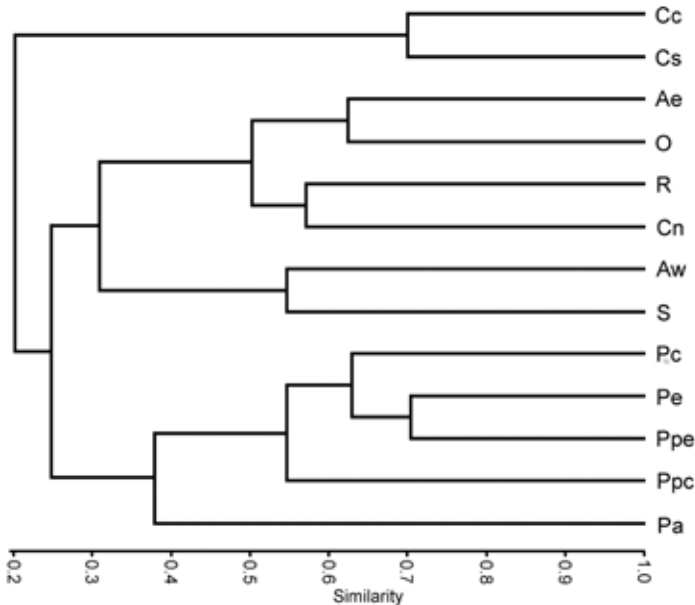


Figure 3. Similarity dendrogram of endemic and subendemic taxa (species and subspecies) using the Sørensen coefficient and the Unweighted Pair Group Method with Arithmetic Mean (UPGMA) algorithm.

Non-native taxa

As Aymerich & Sáez (2019) have already highlighted, the presence of introduced taxa in the studied area is very significant (Table 1): 30.1 % of all taxa (native hybrids included) are non-native and 45.6 % of them are naturalised (including invasive) species. 84 of the naturalised species are considered to be invasive. The non-native vascular flora of Catalonia was last assessed by Aymerich & Sáez (2019) who listed 1068 taxa. In our study the number of non-native species (currently 1128 taxa) has been increased within a short period of time.

Conservation of the native flora

Aymerich & Sáez (2021) provided a detailed analysis of the state of conservation of the native vascular flora (hybrids excluded). The updated Red List provided here includes 245 taxa, that is 7.0% of the native flora. There are 17 regionally extinct (RE) taxa, 2 extinct in the wild (EW), 43 critically endangered (CR), 67 endangered (EN) and 116 vulnerable (VU). Among the endemic and subendemic taxa, 10.7% are threatened, although the proportion is much higher for endemic taxa in the strict sense (34.1%) than it is subendemic taxa (3.9%).

ACKNOWLEDGEMENTS

This research was conducted without any external funding or support and was driven exclusively by the scientific interest of the authors.

We gratefully acknowledge colleagues and friends for their contribution (mostly taxonomical and chorological advice) to this study: Carlos Aedo, Ihsan Al-Shehbaz, Fabrizio Bartolucci, Carles Benedí, Javier Benito, Curtis Björk, Gabriel Blanca, Cèsar Blanché, Antoni Buiria, Joel Calvo, Paloma Cantó, Josep A. Conesa, Manuel B. Crespo, Miguel Cueto, Antoni Curcó, Rafel Curto, Juan Antonio Devesa, Mario Fernández, P. Pablo Ferrer, Xavier Font, Pere Fraga, Julián Fuentes, Javier Fuertes, Antonio Galán, Mercè Galbany, Josep Gesti, Carlos Gómez, Íñigo Granzow, Moisès Guardiola, Duilio Iamónico, Javier López, Modesto Luceño, Víctor Lucía, Fernando Martínez Flores, Gabriel Mercadal, Abigail Moore, Adolfo Muñoz, Ana I. Ortega, Daniel Pavon, Ramón Morales, Josep Nuet, Joan Pedrol, Julián Fuentes, Lorenzo Peruzzi, Albert Petit, Samuel Pyke, Alejandro Quintanar, Enrique Rico, Marc Riera, Salvador Rivas Martínez, Ana T. Romero, Carlos Romero Zarco, Cristina Roquet, Esteve Sais, M. Eric Schranz, Alexander Sennikov, Miguel Serrano, Ignasi Soriano, Alfonso Susanna, Salvador Talavera, Jean Marc Tison, Pablo Vargas, Mauricio Velayos, Josep Vicens, Josep Vigo, Lluís Vilar and Luis Villar.

LIST OF TAXA

FERNS AND FERNS ALLIES

LYCOPODIACEAE

Huperzia europaea C. Björk [*H. selago* auct., non (L.) Schrank & C.F.P. Mart.]

Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Remarks: The taxonomy of *Huperzia* proposed by Björk (2020) is followed here. We have not found *Huperzia selago* (L.) Schrank & C.F.P. Mart. [*Lycopodium selago* L.] in a strict sense from our area; all the observed specimens show characters of *H. europaea*. The following specimens belong to *H. europaea* (C. Björk, in litt., 6-9 Nov 2021): Valle de Aran, MA 2302; Sorpe, MA 318294; río Aiguamoix, MA 372158; Andorra, El Serrat MA 511815, Núria, MA 2301, and photos from Estany de Travessani (L. Sáez), estany de Romedo de Baix (P. Aymerich) and Serra d'Ensija (M. Solà). *Huperzia selago* was not found among the specimens from the Iberian Peninsula labelled with this name (C. Björk, in litt.).

Lycopodium alpinum L. [*Diphasiastrum alpinum* (L.) J. Holub]

Distribution: Pa Pc +Pe

IUCN category: VU

Remarks: Not found recently in Núria (Pe) where it was collected in 1878 (Sáez, 1997).

Lycopodium clavatum L.

Distribution: Pa Pc

IUCN category: VU

ISOETACEAE

Isoetes creussensis Lazare & S. Riba

Distribution: Subendemic. Pa Pc

IUCN category: LC

Remarks: See Aymerich & Sáez (2013) for its distribution. Pyrenean reports of *I. lacustris* are due to confusion with *I. creussensis* (Brunton & al., 2020).

Isoetes delilei Rothm. [*I. setaceum* auct.]

Distribution: R

IUCN category: VU

Remarks: See Greuter & Troia (2015) for taxonomy. Occurrences from Lleida province mapped by Moreno Saiz & al. (2015) are erroneous.

Isoetes durieui Bory

Distribution: R Cn

IUCN category: NT

Isoetes echinospora Durieu

Distribution: Pa Pc

IUCN category: LC

Isoetes longissima Bory [*I. velatum* A. Braun]

Distribution: R Cn

IUCN category: VU

Remarks: *Isoetes longissima* and *I. velata* are two names for the same species, the former being the correct one (Troia & Greuter, 2014).

Isoetes ×brochonii Motelay [*I. creussensis* × *I. echinosporum*]

Distribution: Pc

Remarks: Reported from Estany de la Pera, Cerdanya by Prada & Rolleri (2003, sub *Isoetes ×hickeyi* W.C. Taylor & N. Luebke) and Estany de Senó, Pallars Sobirà (Brunton, pers. comm.).

SELAGINELLACEAE

Selaginella denticulata (L.) Spring.

Distribution: Ae R Cn Cc

IUCN category: LC

Selaginella selaginoides (L.) Schrank & C.F.P. Mart.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

EQUISETACEAE

Equisetum arvense L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Equisetum fluviatile L.*Distribution:* Pa Pe*IUCN category:* VU*Remarks:* Occurrences from Barcelona province and Aiguamolls de l'Empordà mapped by Moreno Saiz & al. (2015) are erroneous.***Equisetum hyemale*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Equisetum palustre*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cs*IUCN category:* LC***Equisetum ramosissimum*** Desf. subsp. *ramosissimum**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Equisetum telmateia*** Ehrh.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Equisetum variegatum*** Webber & Mohr*Distribution:* Pa Pc*IUCN category:* LC***Equisetum ×fontqueri*** Rothm. [*E. palustre* × *E. telmateia*]*Distribution:* Pe Ppe Cn***Equisetum ×moorei*** Newman [*E. hyemale* × *E. ramosissimum*]*Distribution:* O Cn***Equisetum ×trachyodon*** A. Braun [*E. hyemale* × *E. variegatum*]*Distribution:* Pa*Remarks:* Known from two locations (Sáez, 1997; Aymerich & Sáez, 2013).**OPHIOGLOSSACEAE*****Botrychium lunaria*** (L.) Swartz*Distribution:* Pa Pc Pe Ppc Ppe O Cn Cs*IUCN category:* LC***Botrychium matricariifolium*** (Retz.) Koch*Distribution:* Pc Pe Cn*IUCN category:* EN

Ophioglossum azoricum C. Presl*Distribution:* Pa Pc ?Ppc O Cn Cc Cs*IUCN category:* NT***Ophioglossum lusitanicum*** L.*Distribution:* R Cn*IUCN category:* LC*Remarks:* Occurrences from western Girona province mapped by Moreno Saiz & al. (2015) are in all probability erroneous.***Ophioglossum vulgatum*** L.*Distribution:* Pc Pe Ppe O R Cn Cs*IUCN category:* LC**OSMUNDACEAE*****Osmunda regalis*** L.*Distribution:* Pe R Cn*IUCN category:* LC**SALVINIACEAE*****Azolla filiculoides*** Lam.*Non-native:* I*Distribution:* S R Cn Cc Cs***Salvinia molesta*** D.S. Mitch.*Non-native:* C*Distribution:* Cs*Remarks:* It was collected by R. Balada in the Ebre Delta (sèquia sanitària, 31TCF01, 18 Sept 1999). This material was initially identified as *S. natans* (Balada, 1999); however, the hairs on the abaxial leaf surface (which grow on a shared shaft) are joined at their tips, while those in *S. natans* are free.***Salvinia natans*** (L.) All.*Distribution:* +R*IUCN category:* CR*Remarks:* Its native status is uncertain. The most recent observations date from about 20 years ago, in lower Ter basin.

MARSILEACEAE*Marsilea quadrifolia* L.*Distribution:* +R +Cn +Cs*IUCN category:* EW*Remarks:* Cultivated from sporocarps collected in the Ebre Delta.*Marsilea strigosa* Willd.*Distribution:* R*IUCN category:* EN*Remarks:* Only four locations are known (Aymerich & Sáez, 2021a).*Pilularia globulifera* L.*Distribution:* +R*IUCN category:* RE*Remarks:* Not found recently in Vilarnadal (Alt Empordà), where it was reported based upon a single herbarium specimen collected by F. Sennen in 1912. Several attempts were made to relocate the species in this area, but all were unsuccessful (Sáez & al., 2010).**PTERIDACEAE***Adiantum capillus-veneris* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Anogramma leptophylla* (L.) Link*Distribution:* O R Cn Cc*IUCN category:* LC*Cosentinia vellea* (Aiton) Tod. subsp. *vellea**Distribution:* R Cn*IUCN category:* NT*Cryptogramma crista* (L.) R. Br.*Distribution:* Pa Pc Pe*IUCN category:* LC*Oeosporangium acrosticum* (Balb.) L. Sáez & Aymerich [*Cheilanthes acrostica* (Balb.)Tod.; *C. pteridioides* subsp. *acrostica* (Balb.) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* Pc Ppc Ppe O Cn Cc Cs*IUCN category:* LC

Oeosporangium pteridioides (Reichard) Fraser-Jenk. & Pariyar [*Cheilanthes pteridioides* (Reichard) C. Chr; *C. maderensis* Lowe; *C. pteridioides* subsp. *maderensis* (Lowe) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: O R Cn Cc

IUCN category: LC

Remarks: Occurrences from southern Barcelona and Tarragona provinces and central Lleida province mapped by Moreno Saiz & al. (2015) are in all probability due to confusion with *O. acrosticum*.

Oeosporangium tinaei (Tod.) Fraser-Jenk. [*Cheilanthes tinaei* Tod.; *C. pteridioides* subsp. *tinaei* (Tod.) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Pc R Cn

IUCN category: LC

Remarks: The unique reliable finding of this species in the central Pyrenees was made by Aymerich & Sáez (2013).

Oeosporangium ×kochianus (Rasbach, Reichst. & Schneller) L. Sáez & Aymerich [*O. pteridioides* × *O. tinaei*; *Cheilanthes × kochiana* Rasbach, Reichst. & Schneller]

Distribution: R Cn

Remarks: Rasbach & al. (1983) described this taxon from Cap de Creus Peninsula. It was later found in Porbou (Sáez, 1997) and Collserola mountain (Cn) (L. Sáez, unpubl. data).

Paragymnopteris marantae (L.) K.H. Shing [*Notholaena marantae* (L.) Desv.]

Distribution: Pc Ppc +O Cn Cc

IUCN category: LC

Remarks: Yatskievych & Smith (2003) provided strong arguments in favor of rejecting *Notholaena marantae* as the type of *Notholaena*. Moreover, Rothfels & al. (2008) provided a multigene phylogeny focused on taxa traditionally assigned to the genus *Notholaena*. According to the latter authors the correct name for *N. marantae* is *Paragymnopteris marantae*.

Pellaea calomelanos (Swartz) Link

Distribution: Pe Cn

IUCN category: NT

Remarks: Vitales & al. (2019) hypothesised about a recent colonisation of the European continent by this species.

Pteris cretica L.

Non-native: C

Distribution: +Cn

Remarks: Not found recently in Guillerics, where it was collected by J. Codina in early 20th century (Sáez, 1997). Several attempts were made to relocate this species, but all were unsuccessful.

Pteris vittata L.*Non-native*: C*Distribution*: Cn Cc*Remarks*: Escaped from cultivation in the surroundings of Barcelona (Montserrat, 1982; Verloove & Sánchez Gullón, 2008).**DENNSTAEDTIACEAE***Pteridium aquilinum* (L.) Kunhn subsp. *aquilinum**Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC**CYSTOPTERIDACEAE***Cystopteris alpina* (Lam.) Desv.*Distribution*: Pa Pc Pe Ppe*IUCN category*: LC*Remarks*: Sometimes confused with *C. fragilis* subsp. *fragilis*.*Cystopteris fragilis* (L.) Bernh. subsp. *fragilis**Distribution*: Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs*IUCN category*: LC*Remarks*: *Cystopteris ×montserratii* Prada & Salvo, an alleged hybrid between *C. fragilis* and *C. dickieana* R. Sim, was described from Artiga de Lin (Pa). However, the interspecific hybrid nature of this plant is unclear, based on the study of the type material (L. Sáez, pers. obs.). The taxonomic status of *C. dickieana* is uncertain since it is considered conspecific with *C. fragilis*, based on the variable echinate and rugose spore ornamentation in *C. fragilis* (Hauffer & Windham 1991; Parks & al., 2000; Rothfels, 2012).*Cystopteris fragilis* subsp. *huteri* (Milde) Prada & Salvo*Distribution*: Pc Pe Ppe*IUCN category*: LC*Cystopteris montana* (Lam.) Desv.*Distribution*: Pa Pc Ppe*IUCN category*: NT*Gymnocarpium dryopteris* (L.) Newman*Distribution*: Pa Pc Pe Ppc Ppe Cn*IUCN category*: LC*Gymnocarpium robertianum* (Hoffm.) Newman*Distribution*: Pa Pc Pe Ppc Ppe Cs*IUCN category*: LC

ASPLENIACEAE***Asplenium adiantum-nigrum* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC*Remarks:* Its distribution was overestimated due to taxonomic confusion with *A. oopteris*. *Asplenium adiantum-nigrum* is also found in Castelló province, close to the boundary of Cs (Sáez & Álvarez, 1993).***Asplenium billotii* F.W. Schultz [*A. obovatum* subsp. *lanceolatum* (Fiori) Pinto da Silva]***Distribution:* Pe R*IUCN category:* NT***Asplenium celtibericum* Rivas-Mart. subsp. *celtibericum****Distribution:* Pc Pe Pe Ppe Cs*IUCN category:* NT*Remarks:* See comments under *Asplenium seelosii* subsp. *catalaunicum*.***Asplenium ceterach* L. subsp. *ceterach* [*Ceterach officinarum* DC. subsp. *officinarum*]***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Asplenium fontanum* (L.) Bernh. subsp. *fontanum****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Asplenium foreziense* Héribaud***Distribution:* Pe R Cn*IUCN category:* LC***Asplenium majoricum* Litard. [*A. petrarchae* subsp. *majoricum* (Litard.) O. Bolòs & Vigo]***Distribution:* Cs*IUCN category:* VU*Remarks:* Reported from Serra de Godall where it is extremely rare (Curto & al., 2011).***Asplenium marinum* L.***Distribution:* +O R*IUCN category:* EN*Remarks:* Not found recently in Garrotxa county (Sáez, 1997).***Asplenium obovatum* Viv. subsp. *obovatum****Distribution:* R*IUCN category:* VU

Asplenium onopteris L. [*A. adiantum-nigrum* subsp. *onopteris* (L.) Heuffler]

Distribution: Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Asplenium petrarchae (Guérin) DC. subsp. *petrarchae*

Distribution: Pc Ppc Ppe R Cn Cc Cs

IUCN category: LC

Asplenium ruta-muraria L. subsp. *ruta-muraria*

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Asplenium sagittatum (DC.) A.J. Bange [*Phyllitis sagittata* (DC.) Guinea & Heywood]

Distribution: ?Cn Cc Cs

IUCN category: EN

Remarks: Occurrences from Montserrat mountain and southern Lleida province mapped by Moreno Saiz & al. (2015) are erroneous.

Asplenium scolopendrium L. subsp. *scolopendrium* [*Phyllitis scolopendrium* (L.) Newm.]

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Asplenium seelosii Leybold subsp. *catalaunicum* (O. Bolòs & Vigo) P. Monts.

Distribution: Endemic. Ppc Ppe

IUCN category: NT

Remarks: Analysis of isozymic data of the *Asplenium seelosii* group (Pajarón & al., 2005) clearly differentiated two groups corresponding to *A. seelosii* and *A. celtibericum*, but these data do not support the recognition of subspecies. The Catalan populations of *A. seelosii* would be conspecific with the alpine ones which are morphologically different.

Asplenium septentrionale (L.) Hoffm.

Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc

IUCN category: LC

Asplenium trichomanes aggr.

Remarks: Within this polyploid complex several taxa formerly treated as subspecies are herein accepted at species level. For taxonomy see Liu & al. (2018).

Asplenium csikii Kummerle & András. [*A. trichomanes* subsp. *pachyrachis* (Christ) Lovis & Reichst.]

Distribution: Pe Ppc Ppe Ae Cc Cs

IUCN category: LC

Remarks: Sometimes confused with *A. jessenii*.

Asplenium inexpectans (Lovis) Landolt [*A. trichomanes* subsp. *inexpectans* Lovis; ?*A. microphyllum* Tineo]

Distribution: R

IUCN category: CR

Remarks: Only one collection site for this species is known: Cap Norfeu (Sáez, 1997, 2000). *Asplenium microphyllum* Tineo, a priority name over *A. inexpectans*, probably refers to the thermophilic and non-silicolous, diploid plant belonging to the *A. trichomanes* complex.

Asplenium jessenii H.M. Liu & H. Schneid [*A. trichomanes* subsp. *hastatum* (Christ) S. Jess.]

Distribution: Pe Ppc Ppe Cs

IUCN category: LC

Remarks: Probably overlooked and more common than known.

Asplenium quadrivalens (D.E. Meyer) Landolt [*A. trichomanes* subsp. *quadrivalens* D.E. Meyer]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Asplenium trichomanes L.

Distribution: Pa Pc Pe Ppe Cn Cc

IUCN category: LC

Asplenium viride Huds. [*A. trichomanes-ramosum* L.]

Distribution: Pa Pc Pe Ppc Ppe O Cs

IUCN category: LC

Remarks: Reports from Montseny massif (Cn) must be disregarded as being probably erroneous or due to falsification (specimens collected by Rivas Mateos). Occurrences from Montserrat mountain and central Lleida province mapped by Moreno Saiz & al. (2015) are erroneous.

Asplenium ×alternifolium Wulfen [*A. septentrionale* × *A. trichomanes*]

Distribution: Pa Pe O Cn

Remarks: Not found recently in O (Oliver & Font, 2009).

Asplenium ×corbariense Rouy nothosubsp. *corbariense* [*A. fontanum* × *A. quadrivalens*]

Distribution: Pc

Remarks: Reported from Llavorsí (Pérez Carro & Fernández Areces, 2021).

Asplenium ×krameri (Herrero, Prada, Pajarón & Pangua) Rivas Mart. [*A. ×sleepiae* nothosubsp. *krameri* Herrero, Prada, Pajarón & Pangua; *A. foreziense* × *A. obovatum* subsp. *obovatum*]

Distribution: R

Remarks: Described from Cap de Creus Peninsula (Herrero & al., 1995).

Asplenium ×orellii Lovis & Reichst. [*A. majoricum* × *A. quadrivalens*]

Distribution: Cs

Remarks: Reported from Serra de Godall (Curto & al., 2011).

Asplenium ×pagesii Litard. [*A. foreziense* × *A. quadrivalens*]

Distribution: R

Remarks: Reported from Portbou (Reichstein, 1981).

Asplenium ×reichstenii Bennert & H. Rasbach [*A. fontanum* subsp. *fontanum* × *A. majoricum*]

Distribution: Cs

Remarks: Reported from Serra de Godall (Curto & al., 2011).

Asplenium ×sleepiae Badré & Boudrie [*A. billotii* × *A. foreziense*]

Distribution: R

Remarks: Reported from Cap de Creus Peninsula (Sáez & al., 1993).

Asplenium ×sollerense Lovis, Sleep & Reichst. [*A. majoricum* × *A. petrarchae* subsp. *petrarchae*]

Distribution: Cs

Remarks: Reported from Freginals, Montsià (Pérez Carro & Fernández Areces, 2021).

Asplenium ×ticinense D.E. Meyer [*A. adiantum-nigrum* × *A. onopteris*]

Distribution: O

Remarks: Reported from Cabrera mountain (Sáez, 1997).

WOODSIACEAE

Woodsia alpina (Bolton) S.F. Gray

Distribution: Pa Pc Pe

IUCN category: NT

Remarks: Its distribution in our area is wider than first assumed (Guardiola & al., 2013).

Woodsia pulchella (Bertol.) A. Löve & D. Löve [*W. glabella* subsp. *pulchella* (Bertol.) Á. Löve & D. Löve]

Distribution: Ppe

IUCN category: CR

Remarks: Restricted to a small area in Pedraforca massif (Sáez & Talavera, 2010; Sáez & al., 2010). There are no morphological differences between Alpine and Pyrenean plants (Aymerich & Sáez, 2013).

BLECHNACEAE

Struthiopteris spicant (L.) F.W. Weiss subsp. ***spicant*** [*Blechnum spicant* (L.) Roth subsp. *spicant*]

Distribution: Pa Pc Pe Ae O R Cn

IUCN category: LC

Remarks: For generic delineation see Gasper & al. (2016). Moreno Saiz & al. (2015) mapped an occurrence from Montserrat mountain; however, this report must be disregarded as being in all probability erroneous.

ATHYRIACEAE

Athyrium filix-femina (L.) Roth

Distribution: Pa Pc Pe Ppe O R Cn Cc

IUCN category: LC

Remarks: Moreno Saiz & al. (2015) mapped an occurrence from Montserrat mountain; however, this report must be disregarded as being in all probability erroneous.

Athyrium distentifolium Opiz

Distribution: Pa Pc

IUCN category: LC

Remarks: A broad generic concept for *Athyrium* Roth is provisionally adopted here. This species has been included within the monotypic genus *Pseudathyrium* Newman (Wei & al., 2018).

THELYPTERIDACEAE

Oreopteris limbosperma (All.) Holub [*Thelypteris limbosperma* (All.) H.P. Fuchs;

Lastrea limbosperma (All.) Holub & Pouzar]

Distribution: Pa Pc Pe

IUCN category: LC

Phegopteris connectilis (Michaux) Watt [*Thelypteris phegopteris* (L.) Slosson]

Distribution: Pa Pc Pe

IUCN category: LC

Thelypteris palustris Schott

Distribution: R +Cn

IUCN category: EN

Remarks: Not found recently in Cn (La Cellera de Ter, Selva) where it was collected in 1908 (Sáez, 1997).

DRYOPTERIDACEAE

Cyrtomium falcatum (L. fil.) C. Presl

Non-native: N

Distribution: Aw Cn Cc

Remarks: Cultivated as ornamental and locally naturalised in Barcelona metropolitan area and Costa Brava (Casasayas & Farràs, 1986; Sáez, 1997; Mallol & Maynés, 2008; Guardiola & Petit, 2020; Verloove & Aymerich, 2020). Also, recently found in Calders (Moianès) (J. Vila pers. comm.).

Cyrtomium fortunei J. Sm.

Non-native: C

Distribution: Cn

Remarks: Found in Cartellà (Gironès) by A. Mallol (floracatalana.net); probably persistent after cultivation (Aymerich & Sáez, 2019b).

Dryopteris affinis aggr.

Remarks: Within this apomictic complex several taxa formerly treated as subspecies are now accepted at species level. See Fraser-Jenkins (2007) for taxonomy.

Dryopteris affinis (Lowe) Fraser-Jenk. subsp. ***affinis*** [*D. filix-mas* subsp. *affinis* (Lowe) O. Bolòs, Vigo, Masalles & Ninot; *D. pseudomas* (Wollaston) Holub & Pouzar]

Distribution: Pa Pc Pe Ppe Ae O R Cn Cc Cs

IUCN category: LC

Remarks: Extremely rare in Cs (Port massif) and Cc (Baix Llobregat). *Dryopteris pseudomas* was lectotypified from Wollaston's specimen of *D. affinis*, which maintains the stability of the nomenclature of the *D. affinis* group (Fraser-Jenkins, 2009).

Dryopteris borrieri (Newman) Oberh. & Tavel [*D. affinis* subsp. *borrieri* (Newman) Fraser-Jenk.; *D. filix-mas* subsp. *borrieri* (Newman) Bech. & Tavel]

Distribution: Pa Pc Ppe O Cn

IUCN category: LC

Dryopteris cambrensis (Fraser-Jenk.) Beitel & W.R. Buck [*D. affinis* subsp. *cambrensis* Fraser-Jenk.; *D. filix-mas* subsp. *cambrensis* (Fraser-Jenk.) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Pa Pe Cn

IUCN category: DD

Dryopteris carthusiana (Vill.) H.P. Fuchs*Distribution:* Pa Pc Pe*IUCN category:* NT*Remarks:* Occurrences from Montseny massif and southern Girona province mapped by Moreno Saiz & al. (2015) are due to confusion with *D. dilatata*.***Dryopteris dilatata*** (Hoffm.) A. Gray [*D. carthusiana* subsp. *dilatata* (Hoffm.) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* Pa Pc Pe Ppe O Cn*IUCN category:* LC*Remarks:* Its distribution was overestimated due to taxonomic confusion with *D. expansa*.***Dryopteris expansa*** (C. Presl) Fraser-Jenk. & Jermy [*D. carthusiana* subsp. *assimilis* (Walker) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Dryopteris filix-mas*** (L.) Schott*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs*IUCN category:* LC***Dryopteris mindshelkensis*** N. Pavl. [*D. submontana* (Fraser-Jenk. & Jermy) Fraser-Jenk.; *D. villarii* subsp. *submontana* Fraser-Jenk. & Jermy]*Distribution:* ?Pe Cs*IUCN category:* VU*Remarks:* Not found recently in Pe where it was reported based upon herbarium specimens collected in Nuria and Setcases (Sáez & Vicens, 1993). A report for Vall de Cardós (Pc) must be disregarded as being in all probability due to falsification (Benedí & Sáez, 1996).***Dryopteris oreades*** Fomin [*D. filix-mas* subsp. *oreades* (Fomin) O. Bolòs & Vigo]*Distribution:* Pa Pc ?Pe*IUCN category:* LC*Remarks:* Dwarfed, high elevation forms of *D. filix-mas*, with short leaves, were confused with *D. oreades*.***Dryopteris remota*** (Döll) Druce [*D. carthusiana* subsp. *remota* (Döll) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* Pa Pe*IUCN category:* EN*Remarks:* Recently rediscovered in Pa (L. Sáez, unpubl. data).***Dryopteris xambroseae*** Fraser-Jenk. & Jermy [*D. expansa* × *D. dilatata*]*Distribution:* Pc*Remarks:* Reported from Pla de Boavi (Fraser-Jenkins, 1982; Sáez, 1997).

Dryopteris ×complexa Fraser-Jenk. nothosubsp. ***complexa*** [*D. affinis* subsp. *affinis* × *D. filix-mas*]

Distribution: Cn

Remarks: Reported from Montnegre range (Sáez, 1997). Its distribution in the studied area is probably more widespread than currently documented.

Polystichum aculeatum (L.) Roth

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs

IUCN category: LC

Polystichum braunii (Spenner) Fée

Distribution: Pa

IUCN category: DD

Remarks: Found by Pascal Holveck (Office National des Forêts) very close to France-Spain border in Pa. Reports of *P. braunii* and *P. ×luerssenii* (Dorfler) Hahne [*P. aculeatum* × *P. braunii*] (Macià & Català, 1970), are referable to *P. aculeatum* (Sáez, 1998). A report of *P. braunii* from Vall de Cardós (Pc) must be disregarded as being in all probability due to falsification (Benedí & Sáez, 1996).

Polystichum lonchitis (L.) Roth

Distribution: Pa Pc Pe Ppc Ppe O Cn +Cs

IUCN category: LC

Remarks: Not found recently in Ports massif (Cs). Reports from Bages (Font Quer, 1914) are based on probably poorly developed forms of *P. aculeatum* (Sáez, 1998).

Polystichum setiferum (Forssk.) Woynar

Distribution: Pa Pc Pe ?Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Remarks: Its presence in Ppc requires confirmation.

Polystichum ×bicknellii (Christ) Hahne [*P. aculeatum* × *P. setiferum*]

Distribution: Pa Pc O

Polystichum ×illyricum (Borbás) Hahne [*P. aculeatum* × *P. lonchitis*]

Distribution: Pa Pc Ppe

NEPHROLEPIDACEAE

Nephrolepis cordifolia (L.) C. Presl

Non-native: N

Distribution: Cn Cs

Remarks: Reported from Barcelona metropolitan area and Ebre Delta (Pyke, 2008b; Gómez-Bellver & al., 2019cb; Balada & Arasa, 2019; Guardiola & Petit, 2020).

POLYPODIACEAE

Polypodium cambricum L. [*P. vulgare* subsp. *serrulatum* Arcang.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Polypodium interjectum Shivas [*P. vulgare* subsp. *prionodes* (Asch.) Rothm.]

Distribution: Pc Pe Ppc Ppe O Cn Cc Cs

IUCN category: LC

Polypodium vulgare L.

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs

IUCN category: LC

Polypodium* ×*fontqueri Rothm. [*P. cambricum* × *P. vulgare*]

Distribution: O Cn Cc

Polypodium* ×*shivaseae Rothm. [*P. cambricum* × *P. interjectum*]

Distribution: Pe

GYMNOSPERMS**EPHEDRACEAE**

Ephedra distachya L. subsp. *distachya*

Distribution: Ppc S R Cc

IUCN category: LC

Ephedra fragilis Desf.

Distribution: Ppc S ?R Cc Cs

IUCN category: LC

Remarks: A doubtful report from Torroella de Montgrí (R) (Arce, 2002) requires confirmation.

Ephedra major Host [*E. nebrodensis* Guss.]

Distribution: Pc Pe Ppc Ppe S Cs

IUCN category: LC

PINACEAE

Abies alba Mill.

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Remarks: Allochthonous individuals can be found outside the natural distribution area within these same regions. It is also found, very scarce, in forest plantations in southern Catalonia (Cs); however, no data are available about its possible naturalisation.

Abies cephalonica Loudon

Non-native: C

Distribution: Ppe Aw

Remarks: Known from Sant Joan de les Abadesses (Aymerich & Sáez, 2021c).

Abies nordmanniana (Steven) Spach subsp. *nordmanniana*

Non-native: C

Distribution: Ppe

Remarks: Known from Sant Joan de les Abadesses (Aymerich & Sáez, 2021c).

Abies pinsapo Boiss. subsp. *pinsapo*

Non-native: C

Distribution: Pe Ppe Ae Cn Cs

Remarks: Often cultivated, but data on escaped individuals are scarce. This species is in the process of naturalisation in Ppe (Aymerich, 2013d; Aymerich & Sáez, 2021c). *Abies ×masjoannis* D. Soto, J.I.G. Viñas & E.P. Bujarrabal is the result of a spontaneous hybridisation (under cultivation conditions in Cn) between *A. alba* and *A. pinsapo* (Soto & al., 2004).

Cedrus atlantica (Endl.) Carrière

Non-native: C

Distribution: Pe Ppe Cn

Cedrus deodara (G. Don) Loudon

Non-native: C

Distribution: Pe Ppe Ae Aw Cn

Larix decidua Mill.

Non-native: C

Distribution: Ppe

Remarks: Known only from Castellar de n'Hug, Berguedà (Aymerich & Sáez, 2021c).

Larix ×marschlinsii Coaz [*L. kaempferi* (Lamb.) Carrière × *L. laricina* (Du Roi) K. Koch]

Non-native: C

Distribution: Pe ?O Cn

Remarks: It is in the process of naturalisation in an old afforestation in eastern Pyrenees (Aymerich, 2019). This hybrid is often misidentified as *L. decidua*.

Picea abies (L.) H. Karst.

Non-native: N

Distribution: Pe Ppe O Cn

Remarks: Very rarely naturalised, usually a casual alien; cultivated in other areas.

Pinus brutia Ten.*Non-native:* C*Distribution:* Cn Cs

Remarks: Known from a single location in Montsià in an afforestation (Buirea & al., 2009). There are no evidences of a spontaneous reproduction, probably only persistent planted trees. This species was also vaguely reported from Barcelona area (Collserola mountain).

Pinus canariensis C. Sm.*Non-native:* C*Distribution:* Cn Cc Cs

Remarks: Occasionally found in afforestations. There are no evidences of a spontaneous reproduction, probably only persistent planted trees.

Pinus halepensis Mill.*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Pinus nigra*** J.F. Arnold subsp. *nigra**Non-native:* C*Distribution:* Pc Ppc Ppe Cn Cc

Remarks: It is in process of naturalisation in some old afforestations in Pc and Ppc (Aymerich, 2020a).

Pinus nigra subsp. *salzmannii* (Dunal) Franco*Distribution:* Pc Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC

Remarks: Sometimes cultivated in afforestations outside its natural range.

Pinus pinaster Aiton*Distribution:* [Pc] [Ppc] [Ppe] [Ae] [R] Cn Cc [Cs]*IUCN category:* LC

Remarks: In areas where it is considered native, also some populations could have originated from afforestations.

Pinus pinea L.*Non-native:* I*Distribution:* Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain; considered an introduced species and fully naturalised. Individuals from Pc, Ppe and S are planted.

Pinus ponderosa Lawson & C. Lawson subsp. *ponderosa**Non-native:* C*Distribution:* Pe

Remarks: Known from Das, Cerdanya (Aymerich, 2019).

Pinus radiata D. Don

Non-native: C

Distribution: Pe O Cn Cc

Remarks: Used in afforestations; rarely occurs as casual.

Pinus strobus L.

Non-native: C

Distribution: Pe O

Remarks: Cultivated for forestry purposes and rarely escaped. This species is in the process of naturalisation in a place of the Ribes valley, Ripollès (Aymerich, 2019).

Pinus sylvestris L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Pinus uncinata DC. [*P. mugo* Turra subsp. *uncinata* (DC.) Domin]

Distribution: Pa Pc Pe Ppc Ppe [Cn]

IUCN category: LC

Pinus wallichiana A.B. Jacks.

Non-native: C

Distribution: Cn

Remarks: Cultivated for ornament; rarely escaped near gardens (Casasayas, 1989).

Pinus ×rhaetica Brügger [*P. sylvestris* × *P. uncinata*]

Distribution: Pa Pc Pe Ppc Ppe

Pseudotsuga menziesii (Mirb.) Franco

Non-native: C

Distribution: Pe Ppe O Cn

Remarks: This species could be in the process of naturalisation in some areas; many young plants observed, but a true naturalisation is not confirmed. In Cn it was planted on surfaces of several hundred hectares in which seedlings are common.

CUPRESSACEAE

Calocedrus decurrens (Torr.) Florin

Non-native: C

Distribution: Cn

Remarks: Occasionally found in forest plantations. However, no data are available about its naturalisation.

Chamaecyparis lawsoniana (A. Murray bis) Parl. [*Cupressus sempervirens* A. Murray bis]

Non-native: C

Distribution: Pe

Remarks: Observed in Les Salines massif, Alt Empordà (Verloove & Aymerich, 2020).

Cupressus sempervirens L.

Non-native: C

Distribution: Ppe Aw Cn Cc Cs

Remarks: Widely cultivated, nevertheless, data on established specimens are scanty. It is in the process of naturalisation in Aw (Aymerich, 2013d).

Hesperocyparis arizonica (Greene) Bartel [*Cupressus arizonica* Greene]

Non-native: N

Distribution: Pc Ppc Ae Aw S R Cn Cs

Remarks: Naturalised in Aw (Aymerich, 2013d) and Pc; probably casual elsewhere.

Hesperocyparis macrocarpa (Hartw.) Bartel [*Cupressus macrocarpa* Hartw.]

Non-native: C

Distribution: Cn Cs

Remarks: Sometimes used as garden tree or in afforestations. No data are available about its naturalisation.

Juniperus chinensis L.

Non-native: C

Distribution: Pc Ae

Remarks: Known from Olvan (Berguedà) and Bellver (Cerdanya) (Aymerich, 2020a).

Juniperus communis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: *Juniperus communis* is a very variable species. Delimitation between the infraspecific taxa is uncertain, there are no clear discontinuities regarding the molecular data (Adams & Schwarzbach, 2012a) which not match well with the morphological data. Moreover, no clear discontinuities exist between morphotypes, currently treated at varietal level (Adams & Schwarzbach, 2012a; Hantemirova & al., 2012; Adams, 2014; Adams & Speut, 2020). Prostrate specimens with mostly curved leaves (among other characters) from Pyrenees and Montseny massif would be attributable to *J. communis* var. *saxatilis* Pallas [*J. communis* subsp. *nana* Syme; *J. communis* subsp. *alpina* (Suter) Celak., nom. illeg.]. However, molecular data (Adams & Schwarzbach, 2012a; Hantemirova & al., 2012) do not support its recognition as a separate taxon from typical *J. communis*. Adams & Speut (2020) documented hybridisation and introgression between *J. communis* var. *saxatilis* and var. *hemisphaerica* (J. Presl & C. Presl) Parl. [subsp. *hemisphaerica* (J. Presl & C. Presl) Nyman] in the French Pyrenees. Based on all these data, *J. communis* (without recognising infraspecific taxa) is accepted here, in accordance with other recent checklists from nearby territories (Bartolucci & al., 2018).

Juniperus oxycedrus* L.** [incl. *J. oxycedrus* subsp. *badia* (H. Gay) Debeaux]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* The taxonomic recognition of subsp. *badia* is not supported by recent molecular studies (Adams & Schwarzbach, 2012). *Juniperus oxycedrus* subsp. *badia* is recognised by its smaller seed cones and shorter leaves than found in typical *J. oxycedrus*. However, in practice, these characters overlap. *Juniperus oxycedrus* subsp. *badia* has been reported from Ppc (widespread), Pc, Ppe and Aw (rare).Juniperus macrocarpa* Sm.** [*J. oxycedrus* subsp. *macrocarpa* (Sm.) Ball]*Non-native:* C*Distribution:* Cc*Remarks:* Planted in the Llobregat Delta, but its naturalisation was not confirmed by González & al. (2016). However, seedlings and young individuals have been seen (June 2021, L. Sáez., pers. obs.) in Platja de Gavà, where *J. macrocarpa* was planted, so this species could be in the process of naturalisation. Reports from Cap de Creus (R) are due to confusion with *J. oxycedrus*. Based on phytochemical analysis Franquesa (1995) concluded that *J. macrocarpa* does neither exist in Catalonia nor in Languedoc nor in Provence.***Juniperus phoenicea* L.***Distribution:* Pc Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Juniperus sabina* L.***Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Juniperus thurifera* L.***Distribution:* Pc*IUCN category:* NT*Remarks:* See Aymerich (2008) for its detailed distribution.***Juniperus turbinata* Guss.** [*J. phoenicea* subsp. *turbinata* (Guss.) Nyman]*Distribution:* Cc*IUCN category:* VU*Remarks:* Molecular data (Adams & Schwarzbach, 2012b) suggest that subsp. *turbinata* might be recognised at the specific level as proposed by LeBreton & Pérez de Paz (2001).***Platycladus orientalis* (L.) Franco** [*Thuja orientalis* L.]*Non-native:* C*Distribution:* Pe Ppe Ae Aw O Cc*Remarks:* It is in the process of naturalisation, usually in anthropogenic habitats.

Thuja plicata D. Don

Non-native: C

Distribution: Cn

Remarks: Observed in Espinelves, Guillerics massif (Aymerich & Sáez, 2021c).

TAXACEAE

Taxus baccata L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs

IUCN category: LC

Remarks: Also locally naturalised from garden escapes; probably only naturalised in Ae.

ANGIOSPERMS

NYMPHAEACEAE

Nymphaea alba L.

Distribution: +S +R +Cn +Cc Cs

IUCN category: EN

Remarks: It is uncertain if some reintroduced plants in Aiguamolls de l'Empordà area (R) belong to *N. alba* or *N. marliacea*.

Nymphaea marliacea Lat.-Marl.

Non-native: N

Distribution: R ?Cn Cc

Remarks: Under this name are included plants (covering several hybrids of *N. alba*) cultivated for ornament and sometimes escaped. The naturalised population from Banyoles lake (R) belongs to *N. marliacea*.

ARISTOLOCHIACEAE

Aristolochia clematitis L.

Distribution: O R Cn

IUCN category: LC

Aristolochia paucinervis Pomel [*A. longa* L. subsp. *paucinervis* (Pomel) Batt.]

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Aristolochia pistolochia L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Aristolochia rotunda L. subsp. ***rotunda****Distribution:* Pe Ppe O R Cn Cc*IUCN category:* LC***Aristolochia sempervirens*** L. [*A. altissima* Desf.]*Non-native:* N*Distribution:* Cn*Remarks:* Reported from Montjuïc, Barcelona (Pyke, 2013b) and Collserola mountain (Pérez Sánchez, 2021).**LAURACEAE*****Laurus nobilis*** L.*Distribution:* [Pe] [Ppe] [Ae] [Aw] [O] R Cn [Cc] [Cs]*IUCN category:* LC*Remarks:* There is no consensus on its native status. Some populations in coastal ravines in Cn and R have been usually regarded as native whilst it is a naturalised species elsewhere. It is also cultivated in other areas not listed here.**MONOCOTS****ACORACEAE*****Acorus calamus*** L.*Non-native:* C*Distribution:* S*Remarks:* Reported from Urgell plain by Comellas (1989).**ARACEAE*****Alocasia odora*** (Lindl.) K. Koch*Non-native:* C*Distribution:* Cc*Remarks:* Reported from Calafell, Baix Penedès (Aymerich, 2020a).***Arum italicum*** L.*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Outside its natural range, many naturalised populations are found in some areas of Ae, Aw, Cs, Ppc and S.***Arum maculatum*** Mill.*Distribution:* Pa Pe Ppe O*IUCN category:* DD

Arum ×sooi Terpó [*A. cylindraceum* × *A. maculatum*]*Distribution*: ?Pe ?Ppe*Remarks*: Listed for Girona province without precise location (Galán & Castroviejo, 2013). This suggests a previous occurrence of *A. cylindraceum* Gasp. which could have been displaced by expanding of *A. maculatum*.***Arisarum simorrhinum*** Durieu [*A. vulgare* subsp. *simorrhinum* (Durieu) Maire & Weller]*Distribution*: R Cn Cc*IUCN category*: NT***Arisarum vulgare*** Targ.-Tozz.*Distribution*: R Cn*IUCN category*: LC***Arisarum ×aspergillum*** Dunal [*A. vulgare* × *A. simorrhinum*]*Distribution*: Cn Cc***Colocasia esculenta*** (L.) Schott*Non-native*: N*Distribution*: Cs*Remarks*: Locally naturalised in lower basin of Ebre river (Deltebre, Jesús i Maria), where it is known since the 90s (Royo, 2006; Aymerich & Gustamante, 2016).***Dracunculus vulgaris*** Schott*Non-native*: C*Distribution*: O Cc*Remarks*: All available data are old, prior to 1950.***Lemna gibba*** L.*Distribution*: Pe Ppc Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Lemna minor*** L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Lemna minuta*** Kunth*Non-native*: N*Distribution*: Ae Aw O R Cn ?Cc Cs***Lemna trisulca*** L.*Distribution*: +R Cs*IUCN category*: CR

Lemna valdiviana Phil.*Non-native*: N*Distribution*: Ppc S*Remarks*: Known from Segrià amb Noguera counties (Conesa & al., 2017).*Spirodela polyrhiza* (L.) Schleid.*Distribution*: Ae S +R Cn Cs*IUCN category*: LC*Remarks*: This species has colonised Ae, Cn, Cs and S recently, whereas in R it is not observed since 19th century.*Zantedeschia aethiopica* (L.) Spreng.*Non-native*: N*Distribution*: R Cn Cc Cs*Remarks*: Mainly casual, rarely naturalised.**TOFIELDIACEAE***Tofieldia calyculata* (L.) Wahlenb.*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC**ALISMATACEAE***Alisma lanceolatum* With.*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Alisma plantago-aquatica* L.*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Baldellia ranunculoides* (L.) Parl.*Distribution*: +O R Cn Cc*IUCN category*: LC*Luronium natans* (L.) Raf.*Distribution*: Pa*IUCN category*: EN*Remarks*: Known only from a single location (Perdigó, 1983; Sáez & al., 2010).*Sagittaria sagittifolia* L.*Distribution*: +R*IUCN category*: RE

Sagittaria montevidensis Cham. & Schldl. subsp. *calycina* (Engelm.) Bogin

Non-native: N

Distribution: Cs

Remarks: Known from rice fields of the Ebre delta (Curcó, 2007).

BUTOMACEAE

Butomus umbellatus L.

Distribution: R +Cn

IUCN category: EN

HYDROCHARITACEAE

Egeria densa Planch.

Non-native: N

Distribution: Ppe R Cn

Remarks: Known from three isolated ponds. It currently shows no invasive behaviour.

Elodea canadensis Michx.

Non-native: N

Distribution: Pc Cn

Elodea nuttallii (Planch.) H. St. John

Non-native: I

Distribution: Ppe Ae

Remarks: Well-established populations exist along Ter river (P. Aymerich, unpubl. data).

Hydrocharis morsus-ranae L.

Distribution: [O] R

IUCN category: CR

Remarks: The native populations in R are almost extinct. An introduced population in the late 20th century exists in O (Oliver & Font, 2009).

Najas major All. [*N. marina* subsp. *marina* auct.]

Distribution: +Ppc +S Cc

IUCN category: CR

Remarks: Not found in Cc (Llobregat Delta) since 1995. Reports from Ppc (Montcortès lake, Pallars Jussà) and S (vanished Ivars brackish lake, Pla d'Urgell) are old (prior to 1920).

Najas marina L. [*N. marina* subsp. *armata* (H. Lindb.) Horn]

Distribution: R ?Cc Cs

IUCN category: VU

Remarks: Mainly in Ebre Delta and Banyoles lake. It is considered extinct some in areas which was reported before 1960.

Najas minor All.*Distribution*: R +Cn +Cc Cs*IUCN category*: LC*Remarks*: It is considered extinct in the areas in which the reports are earlier to 1960; its populations are usually unstable.***Najas gracillima*** (Engelm.) Magnus*Non-native*: N*Distribution*: R Cs***Vallisneria spiralis*** L.*Distribution*: Cn Cs*IUCN category*: DD*Remarks*: There is no consensus on its native status. This species has established an important population in the lower Ebre river, as a result of a recent colonisation. Probably non-native in Cn.**JUNCAGINACEAE*****Triglochin barrelieri*** Loisel. [*T. bulbosum* L. subsp. *barrelieri* (Loisel.) Rouy]*Distribution*: R Cs*IUCN category*: DD***Triglochin maritima*** L.*Distribution*: R Cn Cc*IUCN category*: LC*Remarks*: Most reports from Cn and Cc are relatively old, previous to intense coastal urbanisation.***Triglochin palustris*** L. [*T. palustre* L.]*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC**ZOSTERACEAE*****Zostera marina*** L.*Distribution*: +R +Cn +Cs*IUCN category*: CR*Remarks*: Reports from Cn and Cc go back to early 20th century. Populations from R (Port Lligat and cala Jonquet) disappeared at the end of the 90' (E. Ballesteros, pers. comm.). This species was not found in recent surveys in the Ebre Delta (Cs), but it is possible that some plants remain in this area.

Zostera noltii Hornem. [*Nanozostera noltii* (Hornem.) Toml. & Posl.]

Distribution: R Cc Cs

IUCN category: NT

Remarks: Its northern populations (R) are declining.

POTAMOGETONACEAE

Groenlandia densa (L.) Fourr. [*Potamogeton densus* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae S O R Cn Cc Cs

IUCN category: LC

Potamogeton alpinus Balb.

Distribution: Pa Pc

IUCN category: LC

Potamogeton berchtoldii Fieber

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Potamogeton coloratus Hornem.

Distribution: Ppc Ae Aw S O R +Cn Cc Cs

IUCN category: LC

Potamogeton crispus L.

Distribution: ?Pc Pe Ppc Ae S R Cn Cs

IUCN category: LC

Potamogeton gramineus L.

Distribution: Ae +R

IUCN category: CR

Remarks: Known from a single location in Osona (Sáez & al., 2010).

Potamogeton lucens L.

Distribution: Pa +Cn +Cc

IUCN category: CR

Remarks: Currently known from a single location in a Pyrenean lake (Aymerich & al., 2015).

Potamogeton natans L.

Distribution: Pa Pe Ppc Ppe Ae Aw Cn Cs

IUCN category: NT

Remarks: Several old reports are due to confusion with other species or have not been checked.

Potamogeton nodosus Poir.*Distribution:* Pe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Potamogeton perfoliatus*** L.*Distribution:* Pc Ae R Cs*IUCN category:* EN*Remarks:* Probably extinct in Ae.***Potamogeton polygonifolius*** Pourr.*Distribution:* Cn*IUCN category:* VU***Potamogeton praelongus*** Wulfen*Distribution:* Pc*IUCN category:* EN*Remarks:* Known from a single Pyrenean lake (Sáez & al., 2010).***Potamogeton pusillus*** L.*Distribution:* Pc Ppe Ae +Aw S ?O R Cn Cc Cs*IUCN category:* LC***Potamogeton schweinfurthii*** A. Benn.*Distribution:* Pe Aw Cn*IUCN category:* VU*Remarks:* See Aymerich & al. (2012, 2014) and Guardiola & al. (2020).***Potamogeton trichoides*** Cham. & Schltld.*Distribution:* Ppe Ae Aw ?S R Cn Cc Cs*IUCN category:* LC***Potamogeton ×nitens*** Weber [*P. gramineus* × *P. perfoliatus*]*Distribution:* Pc*Remarks:* Reported from Filià lake in Vall Fosca (Aymerich, 2017a).***Potamogeton ×salicifolius*** Wlfg. [*P. perfoliatus* × *P. lucens*]*Distribution:* R*Remarks:* Known only from Banyoles lake (Vayreda, 1879; Aymerich & al., 2014).***Stuckenia filiformis*** (Pers.) Börner [*Potamogeton filiformis* Pers.]*Distribution:* Pa Pc*IUCN category:* EN*Remarks:* Known only from two locations in mountain lakes (Sáez & al., 2010).

Stuckenia pectinata (L.) Börner [*Potamogeton pectinatus* L.]

Distribution: Ppc Ae Aw S O R Cn Cc Cs

IUCN category: LC

Zannichellia contorta (Desf.) Cham. & Schldl.

Distribution: Ae Aw Cc

IUCN category: VU

Remarks: Currently known from Llobregat and Cardener rivers (Aymerich, 2012) and also from Milans river, Conca de Barberà (Aymerich, unpubl. data).

Zannichellia palustris L.

Distribution: Ppc Ppe Ae Aw S Cn Cc Cs

IUCN category: LC

Remarks: Its distribution is poorly known; often reported as *Z. palustris* in a broad sense.

Zannichellia pedunculata Rchb. [*Z. palustris* var. *pedicellata* Wahlenb. & Rosén]

Distribution: R Cs

IUCN category: LC

Remarks: Its distribution is poorly known; often reported as *Z. palustris* in a broad sense.

Zannichellia peltata Bertol. [*Z. palustris* subsp. *peltata* (Bertol.) O. Bolòs, Vigo & Masalles]

Distribution: Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Its distribution is poorly known; probably *Z. peltata* is the most common species of *Z. palustris* group.

POSIDONIACEAE

Posidonia oceanica (L.) Delile

Distribution: R Cn Cc Cs

IUCN category: LC

RUPPIACEAE

Ruppia drepanensis Guss.

Distribution: +S

IUCN category: RE

Remarks: Sometimes recognised at formal level within *R. cirrhosa*. *Ruppia drepanensis* was collected in 1870 in an endorreic lagoon (Estany d'Ivars, Urgell plain) (Gutiérrez, 1994), but has become extinct (Sáez & al., 2010). A nearby population of *R. drepanensis* located 15 km away exists in Tamarit de Llitera (Huesca province).

Ruppia maritima* L.Distribution:* S R Cc Cs*IUCN category:* LC*Remarks:* Probably extinct in S. Hartog & Triest (2020) rejected the view (Ito & al., 2017) of assigning *R. cirrhosa* and its proposed lectotype as a homotypic synonym of *R. maritima*.***Ruppia spiralis* Dumort. [*R. cirrhosa* auct., non (Petagna) Grande]***Distribution:* R Cc Cs*IUCN category:* LC*Remarks:* See Hartog & Triest (2020) for taxonomy.**CYMODOCEACEAE*****Cymodocea nodosa* (Ucria) Asch.***Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* Its presence in Cn and Cc is poorly documented.**NARTHECIACEAE*****Narthecium ossifragum* (L.) Huds.***Distribution:* Pa Pc*IUCN category:* LC**DIOSCOREACEAE*****Dioscorea communis* (L.) Caddick & Wilkin [*Tamus communis* L.]***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC**MELANTHIACEAE*****Paris quadrifolia* L.***Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Veratrum album* L.***Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC

COLCHICACEAE***Colchicum autumnale*** L.*Distribution:* Pa Pe Ppe*IUCN category:* NT***Colchicum bulbocodium*** Ker Gawl. [*Bulbocodium vernum* L.]*Distribution:* ?Pa Pe Ppc Ppe*IUCN category:* LC*Remarks:* Its presence in Pa is based upon an old report (Coste & Soulié, 1914).***Colchicum montanum*** L. [*Merendera montana* (L.) Lange]*Distribution:* Pa Pc ?Pe Ppc Ppe Ae Cn Cc Cs*IUCN category:* LC*Remarks:* Its presence in Pe (Braun-Blanquet, 1948) requires confirmation.***Colchicum triphyllum*** Kunze*Distribution:* +S*IUCN category:* RE*Remarks:* The only occurrence (Almacelles, Segrià) goes back to 1917 (see Sáez & al., 2010).**SMILACACEAE*****Smilax aspera*** L.*Distribution:* ?Pa Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its presence in Pa (Llenas, 1912) requires confirmation.**LILIACEAE*****Erythronium dens-canis*** L.*Distribution:* Pa Pc Pe*IUCN category:* LC***Fritillaria lusitanica*** Wikstr. [*F. pyrenaica* subsp. *boissieri* (Costa) Vigo & Valdés]*Distribution:* ?Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Fritillaria pyrenaica*** L.*Distribution:* Pa Pc Pe ?Ppe*IUCN category:* DD*Remarks:* Its distribution is poorly known, due to confusion with *F. lusitanica*.

Gagea bohemica (Zauschn.) Schult. & Schult. fil.

Distribution: Pe

IUCN category: DD

Remarks: Lewin (2020) reported this species from puig d'en Jordà (Albera massif), in the border line.

Gagea lacaitae A. Terracc. [*G. foliosa* (J. Presl & C. Presl) Schult. & Schult. fil.; *G. granatellii* auct. non (Parl.) Parl.]

Distribution: S R

IUCN category: NT

Gagea liotardii (Sternb.) Schult. & Schult. fil. [*G. fragifera* (Vill.) E. Bayer & G. López]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Gagea lutea (L.) Ker Gawl.

Distribution: Pa Pc Pe Ppe

IUCN category: NT

Gagea pratensis (Pers.) Dumort.

Distribution: Pc Pe

IUCN category: EN

Remarks: It is a rare species known from two locations (Sáez & al., 2010; Aymerich, 2013c).

Gagea reverchonii Degen [*G. lutea* subsp. *burnatii* (Terracc.) M. Lainz]

Distribution: Pc Pe Ppe

IUCN category: VU

Gagea soleirolii F.W. Schultz

Distribution: Pc

IUCN category: EN

Remarks: A collection from Vall Fosca in 1907 by J. Soulié is the only known occurrence in our area (Aymerich & Sáez, 2015).

Gagea villosa (M. Bieb.) Sweet

Non-native: N

Distribution: Pc Pe Ppc Ppe Aw S R Cc

Remarks: It has become rare due to agricultural changes.

Lilium candidum L.

Non-native: N

Distribution: Pc Ppe Ae Aw Cc Cs

Remarks: Usually a casual garden escape, but some persistent populations are known in anthropogenic habitats.

Lilium martagon L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC***Lilium pyrenaicum*** Gouan*Distribution:* Pa Pc Pe*IUCN category:* LC***Tricyrtis birta*** (Thunb.) Hook.*Non-native:* C*Distribution:* O*Remarks:* Escaped from a garden in Santa Pau, Garrotxa (J. Comellas in www.floracatalana.net, 2016).***Tulipa clusiana*** DC.*Non-native:* N*Distribution:* +Aw +R +Cc +Cn*Remarks:* Only old reports from Terrassa, Monistrol de Montserrat, Manresa, Cadaqués and Requesens (Font Quer, 1914; Cadevall, 1933; Malagarriga, 1976 based on Vayreda and Trèmols) are available. At least in Terrassa this species was naturalised since it was abundant in fields over a quarter of a century (Aymerich & Sáez, 2015). Apparently, *T. clusiana* has become vanished.***Tulipa fosteriana*** W. Irving*Non-native:* C*Distribution:* Pe*Remarks:* A garden escape; observed in a single location in Cerdanya plain (Aymerich, 2017b).***Tulipa ×gesneriana*** L.*Non-native:* C*Distribution:* Pc Pe Ae Cc*Remarks:* A rare garden escape, usually persisting only a few years.***Tulipa sylvestris*** L. subsp. ***australis*** (Link.) Pamp.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Reports from *T. sylvestris* subsp. *sylvestris* (Bolòs & Vigo, 2001; Güemes, 2015) are due to confusions with robust forms of subsp. *australis* (Aymerich & Sáez, 2015).

ORCHIDACEAE

Anacamptis coriophora (L.) R.M. Bateman, Pridgeon & M.W. Chase [*Orchis coriophora* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Although the current approach is not to distinguish subspecies within *A. coriophora*, at regional scale there are two groups of populations with some distinctive floral characters together with ecological and geographical distinction. These groups of populations were usually referred to subsp. *fragrans* (Pollini) R.M. Bateman, Pridgeon & M.W. Chase, distributed in the lowlands usually in basic or neutral soils, and subsp. *martrinii* (Timb.-Lagr.) Jacquet & Scappat., limited to the northern mountain areas usually in acid soils.

Anacamptis laxiflora (Lam.) R.M. Bateman, Pridgeon & M.W. Chase [*Orchis laxiflora* Lam. subsp. *laxiflora*]

Distribution: Pe Ppe O R Cn Cc

IUCN category: LC

Anacamptis morio (L.) R.M. Bateman, Pridgeon & M.W. Chase [*Orchis morio* L.]

Distribution: Pa Pe Ppe Ae O R Cn C Cs

IUCN category: LC

Remarks: It was generally divided into three poorly defined subspecies, which are regarded as mere forms in recent synthetic treatments. Plants called subsp. *picta* (Loisel.) Jacquet & Scappat. are the most widely distributed; subsp. *morio* is confined to humid mountain areas (Pa, O and Cn) and subsp. *champagneuxii* (Barnéoud) H. Kretzschmar, Eccarius & H. Dietr. occurs in coastal areas.

Anacamptis palustris (Jacq.) R.M. Bateman, Pridgeon & M.W. Chase subsp. ***palustris*** [*Orchis laxiflora* Lam. subsp. *palustris* (Jacq.) Bonnier & Layens]

Distribution: ?Ppc S +Cc Cs

IUCN category: EN

Remarks: A report for R (Banyoles lake: Sanz & Nuet, 1995) is probably due to confusion with *Dcatylorbiza elata*. The presence of *A. palustris* subsp. *palustris* in Ppc (Basturs) requires confirmation.

Anacamptis papilionacea (L.) R.M. Bateman, Pridgeon & M.W. Chase [*Orchis papilionacea* L.]

Distribution: Cc

IUCN category: DD

Remarks: Its presence is probably accidental: a single specimen was found in Burgar plain (V. Pellicer and J. Cuscó, pers. comm., April 2017; also observed in 2019 and 2021). Aedo (2005) listed this species for Tarragona province.

Anacamptis pyramidalis (L.) Rich.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Anacamptis* × *alata*** (Fleury) H. Kretzschmar, Eccarius & H. Dietr. [*A. laxiflora* × *A. morio*]*Distribution:* O Cn***Anacamptis* × *bicknellii*** (E.G.Camus, Bergon & A.Camus) B. Bock [*A. coriophora* × *A. laxiflora*]*Distribution:* Cn***Cephalanthera damasonium*** (Mill.) Druce*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cephalanthera longifolia*** (L.) Fritsch*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Cephalanthera rubra*** (L.) Rich.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Coeloglossum viride*** (L.) Hartm. [*Dactylorhiza viridis* (L.) R.M. Bateman, Pridgeon & M.W. Chase]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Corallorhiza trifida*** Châtel.*Distribution:* Pa Pe Ppc Ppe*IUCN category:* EN***Cypripedium calceolus*** L.*Distribution:* Ppe +Cn*IUCN category:* VU× ***Dactylodenia st-quintinii*** (Godfery) J. Duvign. [*Dactylorhiza fuchsii* × *Gymnadenia conopsea*]*Distribution:* Ppe***Dactylorhiza elata*** (Poir.) Soó subsp. ***sesquipedalis*** (Willd.) Soó [*Orchis elata* auct.]*Distribution:* Pc Ppc Ppe Ae Aw R Cn Cc Cs*IUCN category:* LC

Dactylorhiza fuchsii (Druce) Soó subsp. ***fuchsii*** [*Orchis maculata* L. subsp. *meyeri* (Rchb.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs

IUCN category: LC

Dactylorhiza incarnata (L.) Soó [*Orchis incarnata* L.]

Distribution: Pa Pc Pe Ppc Ppe O +R Cn Cs

IUCN category: LC

Remarks: Specimens with spots on leaves and flowers (sometimes recognised as subsp. or var. *cruenta* Hyl.) and plants without spots on leaves and flowers (var. or subsp. *incarnata*) can be found in our area. These groups of plants are sympatric and often grow mixed, the latter being most common.

Dactylorhiza insularis (Sommier) Landwehr [*Orchis sambucina* subsp. *insularis* (Sommier) P. Fourn.]

Distribution: Cn Cc Cs

IUCN category: NT

Dactylorhiza maculata (L.) Soó subsp. ***maculata*** [*Orchis maculata* L. subsp. *maculata*]

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Dactylorhiza maculata subsp. ***savogensis*** (D. Tyteca & Gathoye) Kreutz

Distribution: Pc Pe

IUCN category: DD

Remarks: Its distribution is poorly known.

Dactylorhiza majalis subsp. ***alpestris*** (Pugsley) Soó

Distribution: Pc Pe

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *D. majalis* are not clearly defined at present.

Dactylorhiza majalis (Rchb.) P.F. Hunt & Summerh. subsp. ***majalis*** [*Orchis majalis* Rchb.]

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *D. majalis* are not clearly defined at present.

Dactylorhiza sambucina (L.) Soó [*Orchis sambucina* L.]

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Dactylorhiza ×braunii (Halácsy) Borsos & Soó [*D. fuchsii* × *D. majalis*]

Distribution: Pe Ppe

Epipactis atrorubens Besser

Distribution: Pa Pc Pe Ppc Ppe ?Ae O Cn Cs

IUCN category: LC

Epipactis dunensis group

Epipactis bugacensis Robatsch [*E. rhodanensis* Gévaudan & Robatsch]

Distribution: Pc Pe Ppe Cc Cs

IUCN category: DD

Remarks: Although this species has traditionally been grouped with *E. phyllanthes*, the molecular data show a closer relationship to *E. dunensis* and related taxa (Sramkó & al., 2019; Bateman, 2020). According to Bateman (2020) *E. bugacensis* Robatsch is probably conspecific with *E. dunensis* (T. Stephenson & T.A. Stephenson) Godfery.

Epipactis helleborine group

Epipactis distans Arv.-Touv. [*E. helleborine* subsp. *distans* (Arv.-Touv.) R. Engel. & Quentin]

Distribution: Pa Pc Pe Ppe Cs

IUCN category: DD

Remarks: According Bateman (2020) it is best to treat this taxon at subspecies level. The Iberian populations were treated as *E. molochina* P. Delforge.

Epipactis helleborine (L.) Crantz

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The taxonomic value of *E. helleborine* var. *minor* (R. Engel) R. Engel, which can be found in deciduous forests of northern Catalonia (Pc, Pe, Ppe, O and Cn), is uncertain.

Epipactis tremolsii Pau [*E. helleborine* subsp. *tremolsii* (Pau) E. Klein]

Distribution: Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs

IUCN category: LC

Remarks: *Epipactis cardina* Benito & C.E. Hermos., which was reported from Cs, is a poorly defined taxon, probably conspecific with *E. tremolsii*.

Epipactis kleinii M.B. Crespo, M.R. Lowe & Piera [*E. atrorubens* subsp. *parviflora* A. Niesch. & C. Niesch.]

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Epipactis leptochila (Godfery) Godfery*Distribution*: Ppc Cs*IUCN category*: EN

Remarks: Recently found in Ribagorça county (Alamany, 2020) and Ports massif (J. Benito, pers. comm., sub *E. provincialis*). The identity of the Iberian Range populations (Cs) is controversial: they were treated as *E. leptochila* in a strict sense (Presser, 2007; Cantoral & Díez, 2019), as *E. provincialis* Aubenas & Robatsch [*E. leptochila* subsp. *provincialis* (Aubenas & Robatsch) J.-M.Tison] (Benito & Tabuenca, 2004) or as an endemic taxon: *E. maestrazgona* P. Delforge & Gévaudan [*E. leptochila* subsp. *maestrazgona* (P. Delforge & Gévaudan) Kreuz].

Epipactis microphylla (Ehrh.) Sw.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC***Epipactis muelleri*** Godfery [*E. helleborine* subsp. *muelleri* (Godfery) O. Bolòs, Masalles & Vigo]*Distribution*: Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category*: LC***Epipactis palustris*** (L.) Crantz*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn ?Cc Cs*IUCN category*: LC***Epipactis phyllanthes*** group***Epipactis exilis*** P. Delforge*Distribution*: Pe Ppe O Cn*IUCN category*: VU

Remarks: According Bateman (2020) this species is probably conspecific with *E. phyllanthes*. The first report was from Montseny massif (Cn) (Benito, 2010).

Epipactis phyllanthes G.E. Sm. [*E. fageticola* (C.E. Hermos.) Devillers-Tersch. & Devillers]*Distribution*: Pc Pe Ppc Ppe O Cc Cs*IUCN category*: LC

Remarks: *Epipactis fageticola* is probably only a forest or mountain ecotype of *E. phyllanthes*.

Epipogium aphyllum Sw.*Distribution*: Pc Ppe Cn*IUCN category*: EN

Goodyera repens (L.) R. Br.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Gymnadenia conopsea*** (L.) R. Br.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC*Remarks:* Current knowledge of the complex of *G. conopsea* in the Pyrenees is insufficient (Travnicek & al., 2012). In addition to *G. conopsea* (in strict sense) and *G. densiflora* (see below) there could be two cryptic taxa.***Gymnadenia densiflora*** (Wahlenb.) A. Dietr.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Remarks:* This name is applied here to the morphologically differentiated Pyrenean populations and basically linked to calcareous fens.***Gymnadenia odoratissima*** (L.) Rich.*Distribution:* Ppe*IUCN category:* CR*Remarks:* Known from a single location in Catllaràs massif. Some reports are due to confusion with *G. densiflora*. Populations from southwestern Europe show some differences with those from other areas, and therefore, they need to be taxonomically studied. It is uncertain whether these plants should be called *G. pyrenaica* (Philippe) Giraudias. This name has been applied to plants with intermediate characters between *G. odoratissima* and *G. conopsea* which are apparently attributable to the tetraploid taxon identified by Travnicek & al. (2012).×***Gymnigritella pyrenaensis*** C.E. Hermos. & Sabando [*Gymnadenia conopsea* × *Nigritella gabasiana*]*Distribution:* Pe***Himantoglossum hircinum*** (L.) Spreng.*Distribution:* ?Pa Pe Ppe Ae O R Cn Cs*IUCN category:* LC*Remarks:* Most occurrences are probably sporadic (isolated individuals or small populations of uncertain persistence).***Himantoglossum robertianum*** (Loisel.) P. Delforge [*Barlia robertiana* (Loisel.) Greuter]*Distribution:* Pe Ppe Ae Aw S O R Cn Cc*IUCN category:* LC*Remarks:* Inland reports are probably sporadic occurrences.

Limodorum abortivum (L.) Sw.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Limodorum trabutianum*** Batt. [*L. abortivum* subsp. *trabutianum* (Batt.) Rouy]*Distribution:* Ppc Aw Cc Cs*IUCN category:* NT***Neotinea maculata*** (Desf.) Stearn*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Neotinea tridentata*** (Scop.) R.M. Bateman, Pridgeon & M.W. Chase subsp. ***conica*** (Willd.) R.M. Bateman, Pridgeon & M.W. Chase [*Orchis tridentata* Scop. subsp. *conica* (Willd.) O. Bolòs & Vigo]*Distribution:* R Cc*IUCN category:* NT***Neotinea ustulata*** (L.) R.M. Bateman, Pridgeon & M.W. Chase [*Orchis ustulata* L.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Neottia cordata*** (L.) Rich. [*Listera cordata* (L.) R. Br.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Neottia nidus-avis*** (L.) Rich.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Neottia ovata*** (L.) Bluff & Fingerh. [*Listera ovata* (L.) R. Br.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Nigritella austriaca*** (Teppner & E. Klein) P. Delforge subsp. ***iberica*** (Teppner & E. Klein) L. Sáez [*Gymnadenia austriaca* (Teppner & E. Klein) P. Delforge subsp. *iberica* (Teppner & E. Klein) L. Sáez & Aymerich]*Distribution:* ?Pa Pc Pe Ppc Ppe*IUCN category:* LC*Remarks:* See Brandrud & al. (2019) for generic delimitation.

Nigritella gabasiana Teppner & Klein [*Gymnadenia gabasiana* (Teppner & E. Klein) Teppner & E. Klein; *N. nigra* (L.) Rchb. subsp. *gabasiana* (Teppner & E. Klein) O. Bolòs, Masalles & Vigo]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Ophrys apifera Huds.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Specimens called var. *trollii* (Hegetschw.) Rchb. fil. are forms of anomalous floral development.

Ophrys fusca aggr.

Remarks: This taxonomically complex group includes in the study area: (i) a widely accepted species (*O. lutea* Cav.), (ii) three taxa (some of them usually included within a broad concept of *O. fusca* Link) and (iii) *O. dyris* Maire, a species of hybrid origin (Devey & al., 2008; Abreu & al., 2017).

Ophrys bilunulata Risso [*O. fusca* subsp. *bilunulata* (Risso) Aldasoro & L. Sáez]

Distribution: R ?Cn ?Cc Cs

IUCN category: LC

Remarks: The name *Ophrys bilunulata* is applied here in a broad sense. According to Lowe (2011) Catalan plants are referable to *O. subfusca* (Rchb. fil.) Hausskn., a North African and Iberian species, whereas *O. bilunulata* Risso (in strict sense) is a Provençal taxon with eastern Mediterranean affinities.

Ophrys dyris Maire [*O. omegaitera* (Fleischm.) E. Nelson subsp. *dyris* Del Petre]

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Ophrys funerea Viv. [*O. sulcata* Devillers-Tersch. & Devillers; *O. fusca* subsp. *minima* Balayer]

Distribution: ?Pe O

IUCN category: VU

Remarks: The occurrence of this species is only well documented in Collsacabra area (Vila, 2009).

Ophrys fusca Link

Distribution: ?Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The name *Ophrys fusca* is applied here in a broad sense. According to Bernardos & al. (2005) the tendency to attribute taxonomic value to relatively small differences in phenology or pollinating agent has led to the complex systematics of this species (in a broad sense). There is no consensus on the taxonomic value of certain entities. Some authors consider that *O. fusca* (in a

strict sense) is restricted to western Iberian Peninsula, hence the populations from the eastern Iberian Peninsula and Languedoc correspond to a different species: *O. forestieri* (Rchb. fil.) Lojac. [= *O. lupercalis* Devillers-Tersch. & Devillers]. The tall and late flowering plants with relatively large flowers were sometimes regarded as a species of uncertain taxonomic status: *Ophrys arnoldii* P. Delforge.

Ophrys lutea Cav.

Distribution: Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ophrys insectifera aggr.

Remarks: This group includes in the study area two morphologically distinct taxa which have been sometimes recognised as subspecies.

Ophrys insectifera L.

Distribution: Pc Pe Ppc Ppe Ae Aw O Cn

IUCN category: LC

Ophrys subinsectifera C.E. Hermos. & Sabando [*O. insectifera* subsp. *subinsectifera* (Hermosilla & Sabando) O. Bolòs & Vigo]

Distribution: Ppc Ppe Ae Aw S O R Cn Cc

IUCN category: LC

Remarks: Triponez & al. (2013) identified clear morphological and ecological factors segregating among *O. subinsectifera*, *O. aymoninii* (Breistr.) Buttler and *O. insectifera*; however, genetic differences (based on cpDNA and AFLP markers) are weak.

Ophrys scolopax Cav.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The name *Ophrys scolopax* is applied here in a broad sense. *Ophrys santonica* J.M. Mathé & F. Melki is a poorly documented taxon which was reported from Ae (Arnold, 2009; Vila, 2009), Ppc and Ppe. *Ophrys querciphila* Nicole, Hervy & Soca, a species belonging to the “*fucifloralscolopax*” complex (Nicola & Soca, 2017), was reported from northeastern Catalonia (Ae and Cn) by Hermosilla Fernández & al. (2019).

Ophrys sphegodes aggr.

Remarks: This is a complex group requiring further research that includes in our area: (i) a widely accepted species (*O. sphegodes*), (ii) several taxa closely related to *O. sphegodes* which are often treated at subspecies level (*O. passionis*, *O. araneola* and *O. incubacea*) and (iii) two species of presumably hybrid origin (*O. marzuola* and *O. catalaunica*).

Ophrys araneola Rchb. [*O. sphegodes* subsp. *araneola* (Rchb.) K. Richt.]

Distribution: ?Ppc Ppe Ae O R Cn Cc

IUCN category: LC

Ophrys catalaunica O. Danesch & E. Danesch [*O. bertolonii* Moretti subsp. *catalaunica* (O. Danesch & E. Danesch) Soca]

Distribution: Subendemic. Ppc Ppe Ae Aw S O R Cn Cc

IUCN category: LC

Remarks: Usually included in the *O. bertolonii* group, which extends from central Mediterranean region to northeastern Iberian Peninsula. This group is regarded by some authors as a hybrid complex (*O. ×flavicans* Vis.) with several regional forms.

Ophrys incubacea Bianca [*O. sphogodes* subsp. *atrata* (Lindl.) E. Mayer]

Distribution: Cc Cs

IUCN category: LC

Ophrys marzuola (Geniez, Melki & Soca) Soca [*O. exaltata* Ten. subsp. *marzuola* Geniez, Melki & Soca]

Distribution: Ppc Ppe Ae Aw O R

IUCN category: LC

Remarks: Most reports of *O. arachnitiformis* Gren. & Philippe [*O. sphogodes* subsp. *arachnitiformis* (Gren. & Philippe) Sund.] are referable to *O. marzuola*. See Soca (2020) for taxonomy.

Ophrys passionis Sennen [*O. sphogodes* subsp. *passionis* (Sennen) Sanz & Nuet; *O. sphogodes* subsp. *garganica* E. Nelson]

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Ophrys sphogodes Mill.

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ophrys speculum Link

Distribution: Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Populations from R, Ae, Aw and Cn could be sporadic, resulting from temporary colonisations.

Ophrys tenthredinifera Willd.

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Probably sporadic in Ae and Cn. A closely related taxon, *O. ficalhoana* J.A. Guim., was reported from La Selva county (Cn).

Ophrys araneola* × *O. catalaunica

Distribution: Cn

Ophrys × armentariae Ferrández, Benito & C.E. Hermos. [*O. passionis* × *O. speculum*]

Distribution: ?S

Remarks: Known from Lleida province.

Ophrys × bodegomi Benito, C.E. Hermos. & Soca [*O. passionis* × *O. tenthredinifera*]

Distribution: R

Remarks: Reported from l'Escala (Alt Empordà) by Anonymous (2017: 8).

Ophrys × brigittae H. Baumann [*O. dyris* × *O. fusca*]

Distribution: Aw

Ophrys × castroviejo Serra & J.X. Soler [*O. scolopax* × *O. speculum*; *O. × kelleriella* G. Keller, nom. nud.]

Distribution: S

Ophrys catalaunica* × *O. passionis

Distribution: Cn

Ophrys catalaunica* × *O. speculum

Distribution: Cn

Ophrys fusca* × *O. marzuola

Distribution: R

Ophrys × heraultii W.J.Schrenk [*O. speculum* × *O. tenthredinifera*]

Distribution: Cc

Ophrys × hermosillae Soca & Benito [*O. passionis* × *O. scolopax*]

Distribution: S

Ophrys × hybrida Rchb. fil. [*O. insectifera* × *O. sphegodes*]

Distribution: ?Cn ?Cc

Remarks: Known from Barcelona province.

Ophrys insectifera* × *O. subinsectifera

Distribution: Aw

Remarks: Known from Calders (Moianès).

Ophrys × laconensis Scrugli & Gasso [*O. marzuola* × *O. tenthredinifera*]

Distribution: R

Remarks: Reported from l'Escala (Alt Empordà) by Anonymous (2017: 8).

Ophrys × lievrae Maire [*O. fusca* × *O. tenthredinifera*]

Distribution: R

Ophrys x minuticauda Duffort [*O. apifera* × *O. scolopax*]

Distribution: Ppc Ae Aw Cc Cs

Ophrys x montisciana J.E. Arnold [*O. incubacea* × *O. catalaunica*]

Distribution: Cs

Remarks: Known only from Serra de Montsià (Arnold, 2009).

Ophrys x olostensis O. Danesch & E. Danesch [*O. catalaunica* × *O. scolopax*]

Distribution: Ae O Cn

Ophrys x peltieri Maire [*O. scolopax* × *O. tenthredinifera*]

Distribution: Cc

Ophrys x poisnelae J.L. Menos [*O. catalaunica* × *O. insectifera*]

Distribution: Ae Aw

Orchis anthropophora (L.) All. [*Aceras anthropophorum* (L.) R. Br.]

Distribution: Pa Ppc Ppe Ae Aw S O R Cn Cc

IUCN category: LC

Orchis langei K. Richt. [*O. mascula* (L.) L. subsp. *laxifloriformis* Rivas Goday & Bellot; *O. mascula* subsp. *hispanica* (A. Niesch. & C. Niesch.) Soó]

Distribution: Ppc ?Cn Cs

IUCN category: DD

Remarks: Its distribution is poorly known. Its presence in Ppc (Vall Fosca) has been recently confirmed (M. Lockwood, unpubl. data). This species was reported from Serra del Montsec (Ppc) and Girona province (presumably in la Selva, Cn) by Romo (1989) and Aedo (2005), respectively.

Orchis mascula L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs

IUCN category: LC

Remarks: Similar plants to what have been called *O. tenera* (Landwehr) Kreutz can be found in Cs. However, its taxonomic value is unclear since the limits between *O. tenera* and *O. mascula* are not always well-defined.

Orchis militaris L.

Distribution: Ppe Ae Aw O R

IUCN category: LC

Orchis olbiensis Gren. [*O. mascula* subsp. *olbiensis* (Gren.) Asch. & Graebn.]

Distribution: ?Ppc Ae Cn Cc Cs

IUCN category: LC

Remarks: *Orchis mascula* and *O. olbiensis* are sometimes difficult to separate, the diagnostic characters are somewhat variable and intermediates are not rare.

Orchis pallens L.*Distribution:* Pc Pe Ppc Ppe*IUCN category:* LC***Orchis provincialis*** Lam. & DC.*Distribution:* Pe R Cn*IUCN category:* LC***Orchis purpurea*** Huds. subsp. ***purpurea****Distribution:* Ppc Ppe Ae Aw R ?Cn Cc*IUCN category:* LC*Remarks:* Probably sporadic in Ae and Ppe.***Orchis simia*** Lam. subsp. ***simia****Distribution:* Pc Pe Ppe Ae O R Cn Cc*IUCN category:* LC*Remarks:* Probably sporadic in Cc and R.***Orchis spitzelii*** subsp. ***cazorlensis*** (Lacaita) D. Rivera & López Vélez [*O. cazorlensis* Lacaita]*Distribution:* Cs*IUCN category:* CR*Remarks:* Currently known from a single location in Ports massif (see Aymerich & Sáez, 2021a).***Orchis spitzelii*** W.D.J. Koch subsp. ***spitzelii****Distribution:* Ppe*IUCN category:* CR*Remarks:* It is known from a single location in Serra del Cadí (Sáez & al., 2010).***Orchis ×bergonii*** Nanteuil [*O. anthropophora* × *O. simia*]*Distribution:* Ae O Cn***Orchis ×beyrichii*** A. Kern. [*O. militaris* × *O. simia*]*Distribution:* O***Orchis ×penzigiana*** A. Camus [*O. mascula* × *O. provincialis*]*Distribution:* Cn*Remarks:* Known from Montseny massif.***Platanthera algeriensis*** Batt. & Trab.*Distribution:* Pc Ppc Ppe Cn*IUCN category:* EN*Remarks:* First report from Basturs, Pallars Jussà (Vila, 2017); later found in Caldes de Malavella, Selva (Vila, 2019), Vall Fosca, Pallars Jussà (P. Espinet, pers. comm., 11 Dec

2020) and Berguedà county (X. Alamany, ornitho.cat). This species is probably more widespread than currently documented.

Platanthera bifolia (L.) Rich.

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Remarks: This species (in a strict sense) seems restricted to northern and rainy mountain areas. Plants morphologically close to *P. kuenkelei* H. Baumann have been found in Cn (J. Vila & D. Vilasis, unpubl. data).

Platanthera chlorantha (Custer) Rchb.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Platanthera muelleri A. Baum & H. Baum

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The *P. bifolia-chlorantha* group consists of at least three gene pools which largely also represent three morphological groups, namely *P. chlorantha*, *P. bifolia* (in a strict sense) and a third taxon which include plants previously confused with *P. bifolia* or mistaken as hybrids (Durka & al., 2017). This third taxon, morphologically intermediate between *P. bifolia* and *P. chlorantha*, was described as *P. muelleri* by Baum & Baum (2017).

Pseudorchis albida (L.) Á. Löve & D. Löve subsp. *albida*

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Serapias lingua L.

Distribution: Pa Pe Ppe Ae O R Cn Cc

IUCN category: LC

Serapias parviflora Parl.

Distribution: Ae R Cn Cc Cs

IUCN category: NT

Remarks: Probably sporadic in Ae.

Serapias perezchiscanoii Acedo

Distribution: Cn

IUCN category: EN

Remarks: Known from Gavarres massif (E. Bisbe, E. Fàbregues & J. Font, pers. comm.; see Aymerich & Sáez, 2021a).

Serapias vomeracea (Burm. fil.) Briq.

Distribution: Ppe Aw O R Cn Cc

IUCN category: NT

Serapias* × *intermedia F.W. Schultz [*S. lingua* × *S. vomeracea*]

Distribution: Cn

Serapias* × *todaroi Tineo [*S. lingua* × *S. parviflora*]

Distribution: R Cc

× ***Serapicamptis forbesii*** Godfrey [*Serapias lingua* × *Anacamptis pyramidalis*]

Distribution: Cn

Spiranthes aestivalis (Poir.) Rich.

Distribution: Pa Pc Pe Ae R Cn Cc Cs

IUCN category: LC

Spiranthes spiralis (L.) Chevall.

Distribution: Pa Pc Ppc Ppe Ae Aw O R Cn C Cs

IUCN category: LC

IRIDACEAE

Remarks: It is assumed that the generic circumscription adopted here for the genus *Iris* (sensu lato) is provisional.

Chamaeiris foetidissima (L.) Medik. [*Iris foetidissima* L.]

Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Chamaeiris reichenbachiana (Klatt) M.B. Crespo [*Iris spuria* L. subsp. *maritima* (Dykes) P. Fourn.]

Distribution: S R Cs

IUCN category: LC

Crocoshmia* × *crocoshmiflora (Lemoine) N.E. Br. [*Tritonia* × *crocoshmiflora* (Lemoine) Nicholson]

Non-native: N

Distribution: O Cn

Remarks: Reported as naturalised in riparian forests (Girbal, 1984).

Crocus nevadensis Amo & Campo [*C. nevadensis* subsp. *marcetii* (Pau) P. Monts.]

Distribution: Ppc Aw S

IUCN category: LC

Crocus nudiflorus Sm.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Crocus sativus*** L.*Non-native:* C*Distribution:* Ppc Ppe Aw Cc Cs*Remarks:* Most reports are relatively old. This species persists in places where it was formerly cultivated.***Crocus vernus*** (L.) Hill [*C. vernus* subsp. *albiflorus* (Schult.) Ces.]*Distribution:* Pa Pc Pe Ppc Ppe [Cn]*IUCN category:* LC*Remarks:* Based on corolla colour (white vs. purple to lilac) and style length Guillen (2013) accepted two subspecies for our area. However, in most populations white-flowered individuals and purple-flowered specimens occur sympatrically.***Freesia leichtlinii*** Katt subsp. *alba* (G.L. Mey.) J.C. Manning & Glodblatt [*F. alba* (G.L. Mey.) Gumb.]*Non-native:* N*Distribution:* R Cn Cc ?Cs*Remarks:* Reports of *F. refracta* are usually referable to *F. leichtlinii* subsp. *alba* (Aymerich & Gustamante, 2017).***Freesia corymbosa*** (Burm. fil.) N.E. Br. × *F. leichtlinii* Katt [*F. refracta* auct., non (Jacq.) Klatt]*Non-native:* C*Distribution:* Cn Cc Cs*Remarks:* Some reports of *Freesia refracta* (Jacq.) Klatt are referable to this hybrid with diversely coloured flowers.***Gladiolus communis*** L. [incl. *Gladiolus illyricus* W.D.J Koch]*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its taxonomy is complex and not satisfactorily resolved. Most reports are referable to the plant that has been called *G. illyricus*. *Gladiolus communis* (in strict sense) has been occasionally reported from Cc and Cs.***Gladiolus galenii*** Van Geel*Non-native:* C*Distribution:* Cc*Remarks:* Observed in disturbed habitats in the Llobregat delta plane (J. Morató in biodiversidadvirtual, 2021). The plants apparently correspond to a yellow-flowered variety, but hybridisation with other cultivated *Gladiolus* cannot be ruled out.

Gladiolus italicus Mill.*Non-native:* N*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*Hermodactylus tuberosus* (L.) Mill. [*Iris tuberosa* L.]*Non-native:* C*Distribution:* R Cn*Remarks:* Observed in Montgrí massif and suburban areas in Girona (J. Font, pers. comm.).*Iris albicans* Lange*Non-native:* C*Distribution:* ?R Cn ?Cc ?Cs*Remarks:* Reported from Girona and Tarragona provinces (Crespo, 2013); its distribution is poorly known.*Iris lutescens* Lam. [*I. lutescens* subsp. *olbiensis* (Hénou) Rouy; *I. lutescens* subsp. *segarrica* O. Bolòs & Conesa]*Distribution:* Ppc Ppe Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Individuals with yellow and violet flowers can be found within the same population. However, these chromatic variations lack taxonomic value (Crespo, 2013).*Iris germanica* L.*Non-native:* I*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Iris ×sambucina* L.*Non-native:* C*Distribution:* Pe*Remarks:* Observed in a riparian forest of the Segre river (Aymerich, 2017b).*Limniris pseudacorus* (L.) Fuss [*Iris pseudacorus* L.]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Romulea columnae* Sebast. & Mauri subsp. *columnae**Distribution:* Ppe Aw R Cn Cc Cs*IUCN category:* LC*Romulea ramiflora* Ten. subsp. *ramiflora**Distribution:* Ppe R Cn Cc*IUCN category:* LC

Siphonostylis unguicularis (Poir.) Wern. Schulze [*Iris unguicularis* Poir.]

Non-native: N

Distribution: Cn

Remarks: Locally naturalised or persistent after cultivation in suburban areas in the surroundings of Barcelona (Gómez-Bellver & al., 2019c) and Sant Feliu de Guíxols area, Baix Empordà (Mallol & López, 2019).

Sisyrinchium platense I.M. Johnst.

Non-native: N

Distribution: S

Remarks: Conesa (1991) discovered it in Aitona, where it was spreading.

Watsonia borbonica (Pourr.) Goldblatt

Non-native: N

Distribution: Cn

Remarks: Known from a single location in Cabrera de Mar, Maresme (Guardiola & Petit, 2020).

Xiphion latifolium Mill. [*Iris latifolia* (Mill.) Voss.]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Xiphion vulgare Mill. [*Iris xiphium* L.]

Distribution: +Cc Cs

IUCN category: VU

ASPHODELACEAE

Aloe arborescens Mill.

Non-native: N

Distribution: R Cn Cc Cs

Aloe ferox Mill.

Non-native: N

Distribution: Cn Cc

Remarks: Reported from Barcelona area (Pyke, 2008b) and Reus, Baix Camp (Verloove & al., 2019).

Aloe framesii L. Bolus

Non-native: C

Distribution: R Cn Cs

Remarks: Reported from maritime rocks in Llançà (Aymerich, 2017b); also known from Alcanar and La Ràpita, Montsià (P. Aymerich, unpubl. data) and Maresme.

Aloe maculata All.

Non-native: N

Distribution: Aw R Cn Cc Cs*Aloe officinalis* Forssk.

Non-native: C

Distribution: Cc

Remarks: Reported from Cambrils, Baix Camp (Aymerich, 2020a). Some reports of *A. vera* are probably referable to *A. officinalis*.

Aloe perfoliata L.

Non-native: C

Distribution: R Cc

Remarks: Some reports are probably referable to *A. ×nobilis* Haw.

Aloe vera (L.) Burm. fil.

Non-native: C

Distribution: ?O Cn Cc

Aloe ×delaetii Radl. [*A. ciliaris* Haw. × *A. succotrina* Lam.]

Non-native: C

Distribution: Cc Cs

Remarks: Reported by Aymerich & Gustamante (2015, 2016a), Aymerich (2017b) and Verloove & al. (2019).

Aloe ×nobilis Haw. [*A. brevifolia* Mill. × *A. perfoliata* L.]

Non-native: C

Distribution: Cc

Remarks: Reported from two locations: L'Ampolla, Baix Camp and Cambrils, Baix Ebre (Aymerich, 2020a); also known from Alcanar, Montsià (P. Aymerich, unpubl. data). Some reports of *A. perfoliata* are due to confusions with this gardening hybrid.

Aloe ×spinosissima Jahand. [*A. humilis* (L.) Mill. × *A. arborescens*]

Non-native: C

Distribution: R

Remarks: Known from Alt Empordà coast, in Llançà and Port de la Selva (Aymerich, 2015e, 2016c).

Aloiampelos ciliaris (Haw.) Klopper & Gideon F. Sm. [*Aloe ciliaris* Haw.]

Non-native: N

Distribution: R Cc ?Cs

Remarks: Known only from suburban areas in Port de la Selva (Alt Empordà) (Aymerich, 2016c) and Gavà. Reports from Cs (Royo, 2006) are probably referable to *Aloe ×delaetii*.

Asphodelus albus Mill. subsp. ***subalpinus*** Nyman [*A. albus* subsp. *delphinensis* (Gren. & Godr.) Z. Díaz & Valdés; *A. albus* auct., non Mill.]

Distribution: Pa Pc Pe ?Ppc Cn

IUCN category: LC

Remarks: See Gutermann (2019) for taxonomy. Sometimes confused with *A. macrocarpus* and *A. cerasiferus* (Aymerich & Sáez, 2015).

Asphodelus ayardii Jahand. & Maire [*A. fistulosus* var. *grandiflorus* Gren. & Godr.]

Distribution: S Cc

IUCN category: LC

Asphodelus cerasiferus J. Gay

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Asphodelus fistulosus L.

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The populations are unstable outside the area of maritime influence and semiarid Ebre basin (S).

Asphodelus macrocarpus Parl. subsp. ***macrocarpus*** [*A. albus* subsp. *villarsii* (Billot) I.B.K. Richardson & Smythies]

Distribution: Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Often confused with *A. albus*. *Asphodelus macrocarpus* subsp. *macrocarpus* is widespread in areas of Mediterranean influence in the Pyrenees.

Asphodelus ramosus L. subsp. ***ramosus*** [*A. aestivus* auct., non Brot.]

Distribution: R

IUCN category: EN

Remarks: Its occurrence in the studied area is only well documented from Portbou and Baix Ter (see Puig & Sáez, 2021).

Asphodelus cerasiferus* × *A. macrocarpus

Distribution: Ppe

Remarks: Some populations show morphological features that suggest the occurrence of events of genetic introgression between *A. macrocarpus* and *A. cerasiferus* (Aymerich, 2003).

Bulbine frutescens (L.) Willd.

Non-native: N

Distribution: R Cn Cc

Remarks: A garden escape; first report from Llançà, Alt Empordà (Giménez, 2012).

× *Gasteraloe beguinii* (Radl) Guillaumin [*Aloe aristata* Haw. × *Gasteria carinata* (Mill.) Duval var. *verrucosa* (Mill.) van Jaarsv.]

Non-native: C

Distribution: Cc

Remarks: Reported from two locations in Penedès and Anoia counties (Gómez-Bellver & al., 2019a).

Gasteria carinata (Mill.) Duval

Non-native: C

Distribution: Cc

Remarks: A very rare garden escape; only observed in Hospitalet de l'Infant, Baix Camp (Aymerich & Gustamante, 2015).

Hemerocallis fulva (L.) L.

Non-native: N

Distribution: Pc Pe Ppe Ae S O Cn

Kniphofia praecox Baker

Non-native: C

Distribution: Pc Ae

Remarks: Known from Avià, Berguedà (Aymerich, 2016) and Bellver de Cerdanya (Aymerich, 2020a).

Simethis mattiazzi (Vand.) Sacc. [*S. planifolia* (L.) Gren. & Godr.]

Distribution: Cn

IUCN category: NT

Remarks: Known from a small area in la Selva plain (Sáez & al., 2010; Garrido & Mercadal, 2017). The latter authors provide detailed data on demography and distribution.

AMARYLLIDACEAE

Agapanthus praecox Willd.

Non-native: N

Distribution: Cn

Remarks: A garden plant reported from Barcelona and Maresme county; see Guardiola & Petit (2020) for its distribution.

Allium cepa L. [incl. *A. ascalonicum* L.]

Non-native: C

Distribution: Pc Ppe Ae O Cs

Remarks: It probably exists throughout the studied area but has rarely been reported as uncultivated.

Allium chamaemoly L.*Distribution:* R +Cn*IUCN category:* LC*Remarks:* Old reports from Cn correspond to highly transformed sites in the metropolitan area of Barcelona.***Allium ericetorum*** Thore*Distribution:* Pa Pc*IUCN category:* NT***Allium fistulosum*** L.*Non-native:* C*Distribution:* Ppe***Allium moly*** L.*Distribution:* Pc Ppc Aw*IUCN category:* LC***Allium moschatum*** L.*Distribution:* Ppc Ppe Aw S R Cc Cs*IUCN category:* LC***Allium neapolitanum*** Cirillo*Non-native:* N*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*Remarks:* There is no consensus on its native status.***Allium nigrum*** L.*Non-native:* C*Distribution:* +Cn*Remarks:* Reported from Montjuïc, Barcelona (Cadevall, 1933) on the basis of data earlier to 20th century. There is no consensus on its native status.***Allium oleraceum* / *paniculatum*** aggr.*Remarks:* The taxonomy of this group is poorly understood and requires a conclusive resolution. Further research is needed in order to clarify the taxonomic status of different plants called *A. paniculatum*. According to analytical treatments, *A. paniculatum* (in strict sense) is an eastern species not occurring in the Iberian Peninsula.***Allium flavum*** L.*Non-native:* C*Distribution:* Cn*Remarks:* Nuet & Panareda (1993) reported this species from a disturbed area in Monistrol de Montserrat (Bages).

Allium longispathum Redoute*Distribution:* ?Pe ?Ae ?Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Usually reported as *A. paniculatum* in a broad sense; its distribution is poorly known. *Allium longispathum* was treated as non-native by Aymerich & Sáez (2019b, sub *Allium dentiferum* Webb & Berthel.).***Allium oleraceum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Allium oporinanthum*** Brullo, Pavone & Salmieri [*A. oleraceum* subsp. *girerdii* J.-M. Tison]*Distribution:* Pc Pe Ppc ?Ppe Aw ?Cn Cc ?Cs*IUCN category:* LC*Remarks:* Usually reported as *A. paniculatum* in a broad sense; its distribution is poorly known. This tetraploid species, which is endemic to eastern Iberian Peninsula and southeastern France, is usually found in Mediterranean and Submediterranean natural habitats.***Allium pallens*** L. [*A. paniculatum* subsp. *pallens* (L.) Richt.; *A. stearnii* Pastor & Valdés; *A. paniculatum* subsp. *stearnii* (Pastor & Valdés) O. Bolòs, Masalles & Vigo]*Distribution:* ?Pe Ppc Ppe Ae Aw S ?O R Cn Cc Cs*IUCN category:* LC*Remarks:* See Brullo & al. (2003) for taxonomy, karyology, chorology and ecology of this circum-Mediterranean species, usually occurring in synanthropic habitats.***Allium polyanthum*** Schult. & Schult. fil. [*A. porrum* subsp. *polyanthum* (Schult. & Schult. fil.) Jauzein & J.-M.Tison; *A. ampeloprasum* subsp. *polyanthum* (Schult. & Schult. fil.) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* R Cn Cc ?Cs*IUCN category:* LC*Remarks:* Tetraploid native plants belonging to the *A. ampeloprasum* group are here referred to *A. polyanthum*. The respective distribution areas of *A. porrum*, *A. polyanthum* and *A. scaberrimum* are not clearly defined at present, due to misidentifications.***Allium porrum*** L. [*A. ampeloprasum* auct., non L., p.p.]*Non-native:* N*Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Tetraploid non-native plants of eastern origin belonging to the *A. ampeloprasum* group are here referred to *A. porrum*. The respective distribution areas of *A. porrum*, *A. polyanthum* and *A. scaberrimum* are not clearly defined at present, due to misidentifications.

Allium pyrenaicum Costa & Vayreda*Distribution:* Subendemic. Ppe O Cn*IUCN category:* NT***Allium roseum*** L.*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Allium sativum*** L.*Non-native:* C*Distribution:* Ppe Ae Cn Cc Cs*Remarks:* Probably more widespread than currently documented.***Allium scaberrimum*** J. Serres [*A. pardoii* Loscos; *A. ampeloprasum* subsp. *pardoii* (Loscos) O. Bolòs & Vigo]*Distribution:* Ppc Ppe Aw S Cc*IUCN category:* LC*Remarks:* It is an hexaploid species belonging to the *A. ampeloprasum* group, endemic to western Mediterranean region (Molina & al., 2018). The respective distribution areas of *A. porrum*, *A. polyanthum* and *A. scaberrimum* are not clearly defined at present, due to misidentifications.***Allium schoenoprasum*** L.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Allium scorodoprasum*** L. subsp. ***rotundum*** (L.) Stearn*Distribution:* Ppc Ae Aw S R Cn Cc Cs*IUCN category:* LC***Allium senescens*** L. subsp. ***montanum*** (F.W. Schmidt) Holub [*A. lusitanicum* Lam.]*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC***Allium sphaerocephalon*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Allium triquetrum*** L.*Non-native:* N*Distribution:* Ae O Cn Cc Cs

Allium tuberosum Spreng.*Non-native:* C*Distribution:* Ae*Remarks:* Reported from Oristà, Lluçanès (Aymerich & Sáez, 2021c).*Allium ursinum* L. subsp. *ursinum**Distribution:* Pa ?Pe Ppe O Cn*IUCN category:* LC*Allium victorialis* L.*Distribution:* Pa Pc Pe Ppe Cn*IUCN category:* LC*Allium vineale* L.*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Clivia miniata* (Lindl.) Bosse*Non-native:* C*Distribution:* Cn Cc*Remarks:* Observed in Blanes (Selva) and Vendrell (Baix Penedès) (Aymerich, 2020a). These plants are identified as *C. miniata*, although we cannot be rule out that they may correspond to *C. nobilis* Lindl.*Galanthus nivalis* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC*Hippeastrum vittatum* (L'Hér.) Herb.*Non-native:* C*Distribution:* Ppe*Remarks:* Observed in 2011 in a natural habitat near Albanyà, Alt Empordà (J. Abuli in biodiversidadvirtual.org). The identity of this species is uncertain, since the taxonomy of *Hippeastrum* is complex.*Leucojum aestivum* L. subsp. *aestivum**Non-native:* N*Distribution:* R*Remarks:* Reported from Empordà (Font, 2000) where it is known from two locations. It cannot be ruled out that it is a native plant since it is probably native in southern France, close to the boundary of R.

Narcissus assoanus Schult. & Schult. fil.*Distribution:* Pa ?Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Larger plants from central Prepyrenees were called *N. palearensis* Romo [*N. assoanus* var. *palearensis* (Romo) Barra]. However, they are not listed as taxonomically distinct in recent treatments.***Narcissus bicolor*** L. [*N. pseudonarcissus* L. subsp. *bicolor* (L.) Baker]*Distribution:* Pa Pc*IUCN category:* LC***Narcissus dubius*** Gouan*Distribution:* Aw S R Cn Cc Cs*IUCN category:* LC***Narcissus jonquilla*** L.*Non-native:* C*Distribution:* O R Cs*Remarks:* Two modern reports from Montsià (Royo, 2006) and Alt Empordà (D. Vilasís, unpubl. data, 2018) counties; it was also reported from O on the basis of data earlier to 20th century.***Narcissus miniatus*** Donn.-Morg., Koop. & Zonn. [*N. serotinus* auct., non L.]*Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* See Koopowitz & al. (2017) for taxonomy.***Narcissus moschatus*** subsp. ***molerói*** (Fern. Casas) Aedo [*N. moleroi* Fern. Casas]*Distribution:* Subendemic. Pe Ppe O*IUCN category:* LC***Narcissus moschatus*** L. subsp. ***moschatus*** [*N. alpestris* Pugsley; *N. pseudonarcissus* subsp. *moschatus* (L.) Baker]*Distribution:* ?Pa Pc Ppc*IUCN category:* LC***Narcissus papyraceus*** Ker. Gawl.*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Sant Feliu de Guíxols area, Baix Empordà (Mallol & López, 2019) and Tagamanent, Vallès Oriental (J. Roma in biodiversityvirtual.org).

***Narcissus poeticus* L.**

Distribution: Pa Pc Pe Ppc Ppe Ae [O] Cn Cc

IUCN category: LC

Remarks: *Narcissus poeticus* subsp. *radiiflorus* (Salisb.) Baker [*N. radiiflorus* Salisb.], which was reported for our area (Bolòs & Vigo, 2001) is conspecific with *N. poeticus* (Tucci & al., 2014).

Narcissus pseudonarcissus* L. subsp. *pseudonarcissus [incl. *N. pseudonarcissus* subsp. *major* (Curtis) Baker; *N. pseudonarcissus* subsp. *pallidiflorus* (Pugsley) A. Fernandes; *N. matiasii* Fern. Casas]

Distribution: Pa Pc [Pe] [Ppe] [O] [Cn]

IUCN category: LC

Remarks: Non-native in eastern Catalonia (Pe, Ppe, O and Cn), where some populations are established from garden escapes. This species probably occurs as non-native in other areas.

Narcissus tazetta* L. subsp. *tazetta

Distribution: [?Pa] [Ae] R [Cn] [Cc] [Cs]

IUCN category: LC

Remarks: Only populations from R are probably native. Reports from Pa require confirmation. Isolated individuals (cultivars grown for ornament) are occasionally seen near gardens in Ppe, Ae and Cn. The taxonomic status of plants called *N. tazetta* subsp. *aureus* (Jord. & Fourr.) Baker, with yellowish tepals, is questionable. These plants, which have been found in Cn, Cc and Ae, are probably garden forms of *N. tazetta*.

***Narcissus ×cardonae* Lloret & Fern. Casas [*N. dubius* × *N. tazetta*]**

Distribution: Cn Cs

Remarks: Known from two locations in human-disturbed areas (Lloret & Fernández Casas, 2009). This taxon probably has arisen from cultivated specimens of *N. tazetta* and *N. dubius*.

***Narcissus ×cyclazetta* Chater & Stace [*N. cyclamineus* DC. × *N. tazetta*]**

Non-native: C

Distribution: Ae

Remarks: A garden escape observed in suburban environments in Berga, Berguedà (Aymerich, 2017b).

***Narcissus ×incomparabilis* Mill. [*N. poeticus* × *N. pseudonarcissus* subsp. *pseudonarcissus*]**

Distribution: Pa Pc [Pe] [Ppe]

Remarks: It is found as casual (escaped from gardens) in Pe and Ppe.

***Narcissus ×medioluteus* Mill. [*N. poeticus* × *N. tazetta*]**

Non-native: N

Distribution: Cc

Remarks: Only known from few locations in Montserrat mountain (Font Quer, 1914, sub *N. biflorus* Curtis; Aymerich & Sáez, 2015; Gómez Bolea & Soriano, 2016).

Narcissus ×montserratii Fern. Casas & Rivas Ponce [*N. bicolor* × *N. poeticus*]

Distribution: Pa

Narcissus ×pujollii Font Quer [*N. assoanus* × *N. dubius*]

Distribution: Aw Cn Cc Cs

Narcissus ×pyrenaicus Dorda, Rivas Ponce & Fern. Casas [*N. bicolor* × *N. pseudonarcissus* subsp. *pseudonarcissus*]

Distribution: Pa

Nothoscordum gracile (Dryand.) Stearn [?*N. borbonicum* Kunth]

Non-native: N

Distribution: Ppc R Cn Cc Cs

Remarks: There is some controversy over the correct name for this species (see Stearn, 1986; Ravenna, 1991; Jacobsen & McNeal, 2002). Pyke (2019a) detected two morphotypes in the studied area. However, there is no solid evidence to assign these morphotypes to concrete scientific names.

Pancratium maritimum L.

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: Virtually extinct in Cn.

Sternbergia colchiciflora Waldst. & Kit.

Distribution: S Cs

IUCN category: CR

Remarks: Only two populations are known, in Terra Alta and Ribera d'Ebre (Sáez & al., 2010).

Sternbergia lutea (L.) Spreng.

Non-native: N

Distribution: Ae Aw S ?O Cn Cc Cs

Remarks: It is usually found close to human-disturbed areas.

Tristagma uniflorum (Lindl.) Traub. [*Ipheion uniflorum* (Lindl.) Raf.]

Non-native: C

Distribution: Cn Cs

Zephyranthes candida (Lindl.) Herb.

Non-native: C

Distribution: Cn

Remarks: Found in Girona area by Joan Coll [in floracatalana.net forum, accessed 22 Sept 2015]

ASPARAGACEAE*Agave americana* L.

Non-native: N

Distribution: Pc Ppe Ae Aw S O R Cn Cc Cs*Agave angustifolia* Haw.

Non-native: C

Distribution: Cc

Remarks: Known from two locations in Ametlla de Mar, Baix Ebre (Sáez & al., 2014; Aymerich, 2020a).

Agave beauleriana Jacobi [*A. franzosinii* P. Sewell]

Non-native: C

Distribution: Cn Cc

Remarks: First record from Tarragona by López-Pujol & Guillot (2015, sub *A. franzosinii*); later found in several coastal areas.*Agave decipiens* Baker

Non-native: C

Distribution: Cc

Remarks: Known from suburban areas in Salou (López-Pujol & al., 2015b).

Agave difformis A. Berger

Non-native: N

Distribution: ?R ?Cn Cc

Remarks: Reported from Tarragona by López-Pujol & al. (2016). There is no consensus about the identity of some populations treated alternatively as *A. difformis* (Mesquida & al., 2016) or *A. lechuguilla* (Aymerich, 2019).*Agave fourcroydes* Lem.

Non-native: N

Distribution: Cn Cc

Remarks: Probably best treated as a mere cultivar of *A. angustifolia*. A small but well-established population of this species was found in coastal areas of Garraf (Sáez & Guillot, 2014); casual elsewhere.*Agave ingens* Berger

Non-native: N

Distribution: R Cc

Remarks: First reports from Baix Penedès and Garraf (Aymerich, 2016b); subsequently found in other locations, and fairly common in Cc. The taxonomy of *A. ingens* is litigious; it may be an *A. americana* cultivar or a taxon of hybrid origin. *Agave ingens* is usually included under the synonymy of *A. americana*.

Agave lechuguilla Torr.*Non-native:* N*Distribution:* R Cn Cc*Remarks:* Known mainly from Baix Ebre coast, in Cc (Aymerich & Gustamante, 2016; Aymerich, 2017b, 2019).*Agave lophantha* Schiede [*A. univitatta* Haw.]*Non-native:* C*Distribution:* R Cc*Remarks:* See Smith & al. (2018) for nomenclature. This species is known from Llançà and Cadaqués, in the northern coast, and also from suburban areas of Tarragona urban area (Aymerich, 2015e; Gómez-Bellver & al., 2019c).*Agave salmiana* subsp. *crassispina* (Trel.) Gentry*Non-native:* C*Distribution:* Aw*Remarks:* Known from Granyena de Segarra (Aymerich, 2020a).*Agave salmiana* Salm-Dyck subsp. *salmiana**Non-native:* N*Distribution:* R Cn Cc Cs*Remarks:* First report from Ametlla de Mar (Sáez & al., 2014); later found in several coastal areas.*Agave salmiana* subsp. *tehuacanensis* (Salm-Dyck) García-Mend. [*A. ferox* K. Koch]*Non-native:* C*Distribution:* R Cn Cc Cs*Agave sisalana* Perrine*Non-native:* N*Distribution:* R Cn Cc Cs*Remarks:* Probably best treated as a mere cultivar of *A. angustifolia*. First reports from L'Hospitalet de l'Infant and Ametlla de Mar (Aymerich & Gustamante, 2015; 2016a); later found elsewhere.*Agave vera-cruz* Mill. [*A. lurida* Aiton]*Non-native:* C*Distribution:* Cc*Remarks:* Reported from Cap de Salou (Tarragonès) by López-Pujol & al. (2015a, sub *A. lurida*).

Agave weberi J. Poiss.*Non-native:* C*Distribution:* Cn Cc

Remarks: Reported from Costa Brava (Sáez & Guillot Ortiz, 2015) and L'Ametlla de Mar (Aymerich & Gustamante, 2016). In the latter location it persists in places where it was formerly cultivated.

Albuca bracteata (Thunb.) J.C. Manning & Goldblatt*Non-native:* C*Distribution:* R

Remarks: Observed once in Llançà (Aymerich, 2016c).

Anthericum liliago L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC*Anthericum ramosum* L.*Distribution:* ?Pa Ppe*IUCN category:* CR

Remarks: Reported from Ppe (Aymerich, 1998) where it has not been recently found (Sáez & al., 2010). Old reports from Lés, Val d'Aran (Coste & Soulié, 1914) require confirmation.

Aphyllanthes monspeliensis L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Asparagus acutifolius* L.*Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Remarks: Its presence in Pa is based upon old reports (Llenas, 1912).

Asparagus aethiopicus L. [*A. sprengeri* Regel]*Non-native:* C*Distribution:* Cn Cc Cs

Remarks: A garden escape found in urban and suburban areas. Sometimes the individuals may persist many years, but no true populations have been observed. This species was also observed as ephemeral (persistence of few months or weeks) in Ae.

Asparagus asparagoides (L.) Druce*Non-native:* N*Distribution:* Cn

Remarks: Reported from suburban areas in Collserola mountain (Aymerich & Sáez, 2021c); Blanes, Selva (Aymerich, 2016d) and Maresme county (Guardiola & Petit, 2020).

Asparagus horridus* L.Distribution:* Cc Cs*IUCN category:* LC***Asparagus officinalis* L.***Non-native:* N*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* It is usually found as casual.***Asparagus prostratus* Dumort. [*A. officinalis* L. subsp. *prostratus* (Dumort.) Corb.]***Distribution:* R*IUCN category:* EN*Remarks:* Only known from Aiguamolls de l'Empordà beach (Aymerich & Sáez, 2021a). Old reports of *A. maritimus* (L.) Mill. from the latter area are referable to this taxon.***Asparagus setaceus* (Kunth) Jessop***Non-native:* N*Distribution:* Cn Cc*Remarks:* Locally naturalised in suburban areas. For its distribution see Aymerich & Gustamante (2015), Aymerich (2017b), Verloove & al. (2019) and Guardiola & Petit (2020).***Aspidistra elatior* Blume***Non-native:* C*Distribution:* Cn Cc*Remarks:* Known from Collbató, Baix Llobregat (Gómez-Bellver & al., 2019c) and Guillerics massif (Gesti & Vilar, unpubl. data).***Bellevalia romana* (L.) Sweet***Non-native:* C*Distribution:* Cn*Remarks:* Reported from Gironès (Bolòs & Vigo, 2001), where it has not been recently found.***Brimeura amethystina* (L.) Chouard [*B. amethystina* subsp. *fontqueri* (Pau) O. Bolòs & Vigo]***Distribution:* Pa Pc Ppc Ppe ?O Cc Cs*IUCN category:* LC*Remarks:* Its presence in O (Girbal & al., 1991) is not supported by herbarium specimens (Sáez, 2013).

Charybdis numidica (Jord. & Fourr.) Speta [*Urginea numidica* (Jord. & Fourr.) Gray]

Distribution: [R] [Cn]Cc Cs

IUCN category: LC

Remarks: Native populations from Cs and southernmost Cc are provisionally attributed to *C. numidica* because bulb tunics are reddish. The confirmation of the tetraploid level for these plants would be convenient, as eastern-Iberian populations were considered hexaploid. Non-native plants (garden escapes) from Cc, Cn and R show also reddish tunics, but it is uncertain whether they belong to the same taxon as the native populations.

Charybdis pancration (Steinh.) Speta [*Urginea maritima* subsp. *pancratium* (Steinh.) K. Richt.]

Non-native: C

Distribution: Cn

Remarks: A chromosome count of $2n=20$ obtained by Pfosser & Speta (2004) was made on plants collected in Costa Brava, near Blanes.

Chlorophytum comosum (Thunb.) Jacques

Non-native: C

Distribution: Cn Cc Cs

Remarks: First report from Baix Ebre: Tortosa (Royo, 2006) and Ametlla de Mar (Aymerich & Gustamante, 2015); later found in Blanes, Selva (Verloove & Aymerich, 2009).

Convallaria majalis L.

Distribution: Pa Pc Pe Ppc Ppe [O]

IUCN category: LC

Dasyilirion serratifolium (Schult. fil.) Zucc.

Non-native: C

Distribution: R Cc

Remarks: Reported from Darnius (Alt Empordà) and Tarragona urban area, probably only persisting after cultivation (Gómez-Bellver & al., 2019a).

Dipcadi serotinum (L.) Medik. subsp. *serotinum*

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Haworthiopsis attenuata (Haw.) G.D. Rowley [*Haworthia attenuata* (Haw.) Haw.]

Non-native: C

Distribution: Cc ?Cs

Remarks: Confirmed observation of a garden throw-out in l'Ametlla de Mar, Baix Ebre (Gómez-Bellver & al., 2019a). Reports due to Royo (2006) and Aymerich (2017) are probably due to confusion with *Gasteraloe* hybrids.

Hyacinthoides ×massartiana Geerinck [*H. hispanica* (Mill.) Rothm. × *H. non-scripta* (L.) Rothm.]

Non-native: C

Distribution: Pe

Remarks: A garden escape found in Camprodon valley, Ripollès (Aymerich, 2020a) and Barcelona metropolitan area (Joaquim Morató in biodiversidadvirtual.org, 2021).

Hyacinthus orientalis L.

Non-native: C

Distribution: Ae Aw ?O Cn Cc

Remarks: Cultivated for ornament; sometimes escaped near gardens.

Leopoldia comosa (L.) Parl. [*Muscari comosum* (L.) Mill.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Leopoldia matritensis (Ruíz Rejón, L. Pascual, C. Ruíz Rejón, Valdés & J.L. Oliv.) Aymerich & L. Sáez [*Muscari matritensis* Ruíz Rejón, L. Pascual, C. Ruíz Rejón, Valdés & J.L. Oliv.]

Distribution: R Cn

IUCN category: DD

Remarks: Reported from Port de la Selva, Alt Empordà (Aymerich & Sáez, 2018) and Santa Coloma de Farners (Gesti & Vilar, 2020).

Loncomelos narbonense (L.) Raf. [*Ornithogalum narbonense* L.]

Distribution: Ppc Ppe S Cn Cc Cs

IUCN category: LC

Loncomelos pyrenaicum (L.) J. Holub subsp. ***pyrenaicum*** [*Ornithogalum pyrenaicum* L. subsp. *pyrenaicum*]

Distribution: Pa Pc Pe Ppe Ae Aw Cn

IUCN category: LC

Maianthemum bifolium (L.) F.W. Schmidt

Distribution: Pe

IUCN category: EN

Remarks: Known only from a single location in Camprodon valley, Ripollès (Sáez & al., 2010).

Melomphis arabica (L.) Raf. [*Ornithogalum arabicum* L.]

Non-native: C

Distribution: Pe S R Cn Cs

Muscari armeniacum Baker*Non-native:* C*Distribution:* Pe Ppe

Remarks: A garden escape reported from the upper basin of Llobregat river, in Castellar de n'Hug (Aymerich, 2014) and Sant Jaume de Frontanyà (J. Escobet in biodiversidadvirtual.org, 2019); also observed in Camprodon valley, Ripollès (Aymerich & Sáez, 2021c).

Muscari atlanticum Boiss. & Reut.*Distribution:* R Cn Cc Cs*IUCN category:* LC

Remarks: Its distribution is poorly known because until recently has been treated as *M. neglectum* in a broad sense. The regions in which *M. atlanticum* has been confirmed by Suárez-Santiago & Blanca (2013) are listed here. *Muscari atlanticum* is apparently restricted to warm areas near the coast.

Muscari baeticum Blanca, Ruiz Rejón & Suár.-Sant.*Distribution:* Pc Pe ?Ppc Ppe Aw*IUCN category:* LC

Remarks: Its distribution is poorly known because until recently has been treated as *M. neglectum* in a broad sense.

Muscari latifolium J. Kirk.*Non-native:* C*Distribution:* Pe

Remarks: A single individual has been found in Vilallonga de Ter, Ripollès (Aymerich, 2019).

Muscari neglectum Ten.*Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Remarks: Probably widespread throughout the studied area, but many reports of *M. neglectum* (in a broad sense) may correspond to other taxa.

Muscari olivetorum Blanca, Ruiz Rejón & Suár.-Sant.*Distribution:* Ppc Cn Cc Cs*IUCN category:* LC

Remarks: Its distribution is poorly known because until recently has been treated as *M. neglectum* in broad sense. The regions in which *M. olivetorum* has been confirmed by Suárez-Santiago & Blanca (2013) are listed here. *Muscari olivetorum* is probably widespread in low altitude areas with dry climate.

Ornithogalum bourgaeum Jord. & Fourr. [*O. orthophyllum* Ten. subsp. *monticolum* (Jord. & Fourr.) O. Bolòs & Vigo]

Distribution: Pc Pe Ppc Ppe Ae ?O Cn

IUCN category: LC

Remarks: Its distribution in the studied area is probably more widespread than currently documented. This species is often misidentified as *O. divergens*.

Ornithogalum divergens Boreau [*O. umbellatum* auct., non L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: There is no consensus on its native status. Its Pyrenean distribution is unclear, since it is often confused with *O. bourgaeum*.

Paradisea liliastrum (L.) Bertol.

Distribution: Pa Pc Ppc

IUCN category: LC

Polygonatum multiflorum (L.) All.

Distribution: Pa Ppe O

IUCN category: LC

Polygonatum odoratum (Mill.) Druce

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs

IUCN category: LC

Polygonatum verticillatum (L.) All.

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Prospero autumnale (L.) Speta [*Scilla autumnalis* L.]

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Prospero obtusifolium (Poir.) Speta [*Scilla obtusifolia* Poir.]

Distribution: Cc Cs

IUCN category: NT

Puschkinia scilloides Adams

Non-native: C

Distribution: Pe

Remarks: Reported from Vilallonga de Ter, Ripollès (Aymerich & Sáez, 2021c).

Ruscus aculeatus L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ruscus ×microglossum Bertol. [*R. hypoglossum* L. × *R. hypophyllum* L.]

Non-native: N

Distribution: Cn

Remarks: A garden escape locally naturalised in Blanes, Selva county (Verloove & Aymerich, 2020).

Scilla hyacinthoides L.

Non-native: N

Distribution: S R Cn Cc

Remarks: A rare garden escape; most of the reports are old.

Scilla lilio-hyacinthus L.

Distribution: Pa Pc Pe Ppe O

IUCN category: LC

Scilla luciliae (Boiss.) Speta [*Chionodoxa luciliae* Boiss.]

Non-native: N

Distribution: Ppc

Remarks: Known from a single location in Soriguera (Pallars Sobirà). According to Aymerich (2017b) this species was erroneously reported as *S. bifolia* L. by Recasens & Mallorques (2009).

Scilla peruviana L.

Non-native: C

Distribution: R Cn

Remarks: There is only one relatively recent report for Cap de Creus (R) (Franquesa, 1995).

Scilla verna Huds. subsp. *verna*

Distribution: Pa Pc

IUCN category: LC

Streptopus amplexifolius (L.) DC.

Distribution: Pa Pc Pe Cn

IUCN category: LC

Yucca aloifolia L.

Non-native: N

Distribution: Ae Aw R Cn Cc Cs

Yucca gigantea Lem.

Non-native: C

Distribution: R Cn Cc

Remarks: First reports due to López-Pujol & Guillot (2014b) and Aymerich (2016a,b,d; 2017b).

Yucca gloriosa L. [incl. *Y. recurvifolia* Salisb.]

Non-native: N

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: *Yucca recurvifolia* Salisb., which is usually regarded as a form or variety of *Y. gloriosa*, has been reported from Cc (López-Pujol & Guillot, 2014a), Cn and Ppe (pers. obs.).

ARECACEAE

Chamaerops humilis L.

Distribution: ?[R] Cn Cc Cs

IUCN category: LC

Remarks: Parellada (2015) postulated an artificial origin for this species in Montgrí massif (R), dating from a plantation carried out at least 400 years ago. The only occurrence (apparently native) in Cn (Montjuïc, Barcelonès) goes back to Costa (1864).

Phoenix canariensis Chabaud

Non-native: N

Distribution: Cn Cc Cs

Remarks: Mostly a casual alien; however this species seems fairly naturalised in few locations of Cc.

Phoenix dactylifera L.

Non-native: C

Distribution: S R Cn Cc Cs

Trachycarpus fortunei (Hook.) H. Wendl.

Non-native: N

Distribution: Ae Aw O Cn

Remarks: Naturalised in some locations of Cn and O (Guix & al., 2001; Oliver, 2009; Aymerich & Sáez 2021c); probably in naturalisation process in places of Ae and Aw (Aymerich, 2017b, 2020a).

Washingtonia filifera (André) H. Wendl. [incl. *W. robusta* H. Wendl.]

Non-native: C

Distribution: R Cn Cc Cs

Remarks: According to Villanueva-Almanza & al. (2018) difficulty exists in establishing clear morphological limits between *W. filifera* and *W. robusta*. The previous authors concluded that *Washingtonia* is composed of one highly variable species and that local differentiation of populations is related to environmental gradients.

COMMELINACEAE*Commelina communis* L.*Non-native:* C*Distribution:* Ppc R ?O Cn*Remarks:* Probably in the process of naturalisation in the lower Tordera basin, Cn (see Verloove & Aymerich, 2020).*Commelina erecta* L.*Non-native:* N*Distribution:* Cn Cc*Remarks:* Reported from Santa Coloma de Cervelló (Baix Llobregat) and Vilassar de Mar (Maresme) (Gómez-Bellver & al., 2019a) and Blanes (Selva) (Verloove & Aymerich, 2020).*Tradescantia fluminensis* Vell.*Non-native:* I*Distribution:* Pe Ppc Ae O R Cn Cc Cs*Remarks:* Mainly invasive in Cn; locally naturalised elsewhere.*Tradescantia pallida* (Rose) D.R. Hunt*Non-native:* C*Distribution:* Ae ?O Cc*Remarks:* First report from Berga (Aymerich, 2016a); later found in coastal areas in southern Catalonia (Verloove & al., 2019). Oliver (2019) also listed this species for Garrotxa.*Tradescantia sillamontana* Matuda*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Barcelona in an urban habitat (Gómez-Bellver & al., 2019a).*Tradescantia zebrina* Bosse*Non-native:* C*Distribution:* Cn*Remarks:* Known from Sant Feliu de Guíxols (Aymerich, 2016a).**PONTEDERIACEAE***Eichhornia crassipes* (Mart.) Solms.*Non-native:* N*Distribution:* ?R Cn Cc Cs*Remarks:* Well-established populations are known from the Ebre Delta (Cs); occasional occurrences elsewhere.

Heteranthera limosa (Sw.) Willd.

Non-native: N

Distribution: S Cs

Remarks: Restricted to rice fields.

Heteranthera reniformis Ruiz & Pav.

Non-native: N

Distribution: R Cs

Remarks: Restricted to rice fields.

Pontederia cordata L.

Non-native: C

Distribution: Cs

Remarks: Reported from a riparian islet in Ebre river (Royo, 2006); also known from an artificial pond in Camprodon, Ripollès (Pe), apparently only cultivated (P. Aymerich, unpubl. data).

CANNACEAE

Canna indica L.

Non-native: C

Distribution: ?S ?O ?R ?Cn Cc Cs

Remarks: Probably, the most common taxon of *Canna* in our area is *C. ×generalis* (see below); however the information is uncertain because this hybrid is often confused with *C. indica*.

Canna ×generalis L.H. Bailey & E.Z. Bailey

Non-native: N

Distribution: Ae ?S O ?R Cn Cs

Remarks: Mainly naturalised in the Ebre Delta (Verloove & al., 2019), where it spreads vegetatively along the margins of ditches. The most common taxon of *Canna* in our area probably is *C. ×generalis*; however the information is uncertain because this hybrid is often confused with *C. indica*.

TYPHACEAE

Sparganium angustifolium Michx.

Distribution: Pa Pc

IUCN category: LC

Sparganium emersum Rehmans subsp. *emersum*

Distribution: Pe ?O ?R ?Cc

IUCN category: VU

Remarks: Known only in a few ditches from Cerdanya plain (Pe) where its populations are panmictic (Aymerich, 2013). Its presence in other areas requires confirmation.

Sparganium erectum L. subsp. *erectum**Distribution*: R ?Cs*IUCN category*: DD***Sparganium erectum*** subsp. *microcarpum* (Neuman) Domin*Distribution*: Pc Pe ?Ppe ?Ae ?Aw ?S ?Cn ?Cc ?Cs*IUCN category*: DD*Remarks*: Listed for Barcelona, Lleida and Tarragona provinces (Medina, 2013).***Sparganium erectum*** subsp. *neglectum* (Beeby) Schinz. & Thell.*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Remarks*: It has been widely reported, but some reports are probably erroneous.***Sparganium erectum*** subsp. *oocarpum* (Celak) Domin*Distribution*: Aw*IUCN category*: DD*Remarks*: It is known on the basis of an old specimen collected in Manlleu (Ter river). The report for Barcelona province (Medina, 2013) refers to this herbarium specimen.***Typha domingensis*** Pers. [*T. angustifolia* L. subsp. *australis* (Schum. & Thonn.) Graebn.]*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Remarks*: Reports of *T. angustifolia* are due to taxonomic confusion with *T. dominguensis*.***Typha latifolia*** L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC**JUNCACEAE*****Juncus acutiflorus*** Hoffm.*Distribution*: Pa Pc Pe Ppc Ppe R Cn*IUCN category*: LC***Juncus acutus*** L. subsp. *acutus**Distribution*: S R Cn Cc Cs*IUCN category*: LC***Juncus acutus*** subsp. *leopoldi* (Parl.) Snogerup*Distribution*: ?R ?Cn*IUCN category*: DD*Remarks*: Its native status is uncertain. This taxon was listed for Girona province without precise location (Romero, 2010a).

Juncus alpinoarticulatus Chaix subsp. *alpinoarticulatus**Distribution:* Pa Pc Pe ?Ppe*IUCN category:* LC*Remarks:* Its occurrence in Ppe requires confirmation.***Juncus articulatus*** L. subsp. *articulatus**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Juncus balticus*** Willd. subsp. *pyrenaicus* (Jeanb. & Timb.-Lagr.) P. Fourn. [*J. pyrenaicus* Jeanb. & Timb.-Lagr.]*Distribution:* Subendemic. Pa Pc Pe Ppc Ppe*IUCN category:* NT***Juncus bufonius*** aggr.*Remarks:* The taxonomy of this aggregate has been very confused. The respective distribution of the species listed here are not clearly defined at present.***Juncus bufonius*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Some reports are probably due to misidentifications with other taxa included within *J. bufonius* aggr.***Juncus foliosus*** Desf. [*J. bufonius* subsp. *foliosus* (Desf.) Maire & Weiller]*Distribution:* Ppe S Cn Cc*IUCN category:* LC*Remarks:* Its distribution is poorly known.***Juncus hybridus*** Brot. [*J. bufonius* subsp. *hybridus* (Brot.) Arcang.]*Distribution:* Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Its distribution is poorly known.***Juncus minutulus*** Prain*Distribution:* ?Pe Cn ?Cc*IUCN category:* LC*Remarks:* Confirmed for Cn (Romero, 2010a); its occurrence in Cc (Torredembarra) requires confirmation.

Juncus ranarius Songeon & E.P. Perrier [*J. bufonius* subsp. *ambiguus* (Guss.) Schinz & Tell.]

Distribution: R Cn ?Cc ?Cs

IUCN category: LC

Remarks: According to Romero (2010a) the presence of this species in Tarragona province is doubtful.

Juncus rechingeri Snogerup

Distribution: Ae Aw Cn Cc Cs

IUCN category: NT

Remarks: See Pérez & al. (2014) for its distribution; also found in Ports massif by R. Curto (unpubl. data).

Juncus bulbosus L. subsp. *bulbosus*

Distribution: Pa Pc Pe R Cc

IUCN category: LC

Juncus capitatus Weigel

Distribution: Pa Pc Pe Ppe O R Cn Cc

IUCN category: LC

Juncus compressus Jacq.

Distribution: Pc Pe Ppc Ppe Ae Aw R C Cc

IUCN category: LC

Juncus conglomeratus L.

Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc

IUCN category: LC

Juncus effusus L.

Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc

IUCN category: LC

Juncus filiformis L.

Distribution: Pa Pc Pe

IUCN category: LC

Juncus fontanesii Laharpe subsp. *fontanesii*

Distribution: Ppc Cn Cc Cs

IUCN category: LC

Remarks: This is a rare and poorly known species in the studied area; most of the available references are old.

Juncus gerardi Loisel. [*J. compressus* subsp. *gerardi* (Loisel.) Rouy]*Distribution:* Ppc S R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably extinct in Cn, where it was reported from surroundings of Barcelona.***Juncus heterophyllus*** Dufour*Distribution:* R ?Cn*IUCN category:* VU*Remarks:* Known only from a few vernal ponds in Alt Empordà (see Sáez & al., 2010); an herbarium specimen from Cn (Girona) requires confirmation.***Juncus inflexus*** L. subsp. *inflexus**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Juncus littoralis*** C.A. Mey. [*J. acutus* subsp. *tomasinii* (Parl.) Trabut]*Distribution:* Cc*IUCN category:* EN*Remarks:* Known only from the Llobregat Delta (González & al., 2016).***Juncus maritimus*** Lam. [incl. *J. pseudoacutus* Pau]*Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Juncus pygmaeus*** Thuill.*Distribution:* Pa Aw R Cn Cc*IUCN category:* LC***Juncus sphaerocarpus*** Funck*Distribution:* Ppc Ae Aw S Cc Cs*IUCN category:* LC*Remarks:* Its distribution is poorly known, due to confusions with other species of the genus.***Juncus squarrosus*** L.*Distribution:* Pc*IUCN category:* LC***Juncus striatus*** E. Mey.*Distribution:* R ?Cc*IUCN category:* VU*Remarks:* Its presence in Cc is based on material collected in the Llobregat Delta by F. Sennen in 1916 and identified as *J. striatus* var. *gracillimus*. The identity of this voucher (kept at BC) requires confirmation.

Juncus subnodulosus Schrank

Distribution: Pa Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Juncus subulatus Forssk.

Distribution: S R +Cn Cc Cs

IUCN category: LC

Juncus tenageia L. fil.

Distribution: Pe Ppe O R Cn Cc

IUCN category: LC

Juncus tenuis Willd.

Non-native: N

Distribution: Pa Pc Pe O Cn

Juncus triglumis L. subsp. *triglumis*

Distribution: Pc Pe

IUCN category: LC

Juncus ×diffusus Hoppe [*J. effusus* × *J. inflexus*]

Distribution: Pc Cc

Luzula alpina Hoppe

Distribution: Pa ?Pc

IUCN category: EN

Remarks: Its occurrence is only well documented on the basis of a specimen collected by P. Font Quer in Circ de Colomers (Pa) in 1934 (BC 77441, det. S. Talavera). This species also occurs in Andorra, near the Pc boundary.

Luzula alpinopilosa (Chaix) Breistr. subsp. *alpinopilosa*

Distribution: Pa Pc

IUCN category: LC

Luzula campestris (L.) DC.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Luzula desvauxii Kunth [*L. glabrata* (Hoppe) Desv. subsp. *desvauxii* (Kunth) Buchenau]

Distribution: Pa Pc Pe

IUCN category: LC

Luzula forsteri (Sm.) Lam. & DC. subsp. ***forsteri****Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC*Remarks:* *Luzula forsteri* subsp. *catalaunica* P. Monts. was reduced to synonymy of *L. forsteri* subsp. *forsteri* by Fernández Piedra & Talavera (2010).***Luzula lutea*** (All.) DC.*Distribution:* Pa Pc Pe*IUCN category:* LC***Luzula multiflora*** subsp. ***monticola*** Kirschner*Distribution:* Pa Pc*IUCN category:* LC***Luzula multiflora*** (Ehrh.) Lej. subsp. ***multiflora****Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC*Remarks:* *Luzula multiflora* subsp. *pyrenaica* (Sennen) P. Monts. was reduced to synonymy of *L. multiflora* subsp. *multiflora* by Fernández Piedra & Talavera (2010).***Luzula nivea*** (L.) DC.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Luzula pediformis*** (Chaix) DC. [*L. nutans* (Vill.) Duval-Jouve]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Luzula pilosa*** (L.) Willd.*Distribution:* Pa Pc Pe Ppe O*IUCN category:* LC***Luzula spicata*** (L.) DC. [*L. hispanica* Chrtek & Krísá]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC*Remarks:* *Luzula spicata* subsp. *monsignatica* P. Monts. was reduced to synonymy of *L. spicata* by Fernández Piedra & Talavera (2010).***Luzula sudetica*** (Willd.) Schult.*Distribution:* Pa Pc ?Ppe*IUCN category:* LC*Remarks:* Its presence in Ppe (Serra del Cadí) requires confirmation (Vigo & al., 2003).

Luzula sylvatica (Huds.) Gaudin subsp. ***sylvatica****Distribution:* Pa Pc Pe Ppc Ppe O Cn Cs*IUCN category:* LC*Remarks:* *Luzula sylvatica* var. *dertosensis* P. Monts. was reduced to synonymy of *L. sylvatica* subsp. *sylvatica* by Fernández Piedra & Talavera (2010).***Oreojuncus trifidus*** (L.) Záv- Drábk. & Kirschner [*Juncus trifidus* L.]*Distribution:* Pa Pc Pe Ppc*IUCN category:* LC**CYPERACEAE*****Bolboschoenus glaucus*** (Lam.) S.G. Smith [*Scirpus maritimus* auct., non L.]*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its distribution is poorly known. *Bolboschoenus glaucus* was usually reported as *Scirpus maritimus* in a broad sense.***Bolboschoenus maritimus*** (L.) Palla [*Scirpus maritimus* L. var. *compactus* (Hoffm.) Meyer]*Distribution:* Ppc ?Ae ?Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Its distribution is poorly known. This species was usually reported as *Scirpus maritimus* in a broad sense.***Bolboschoenus planiculmis*** (F. Schmidt) T.V. Egorova*Distribution:* Cs*IUCN category:* DD*Remarks:* Its native status is uncertain. Jiménez Mejías & Hilpold (2012) reported this species from the Ebre Delta.***Carex acutiformis*** Ehrh.*Distribution:* Pc S O R +Cc Cs*IUCN category:* LC***Carex alba*** Scop.*Distribution:* Ppc Ppe Ae O*IUCN category:* NT***Carex atrata*** L. subsp. ***atrata****Distribution:* Pa Pc Pe Ppe*IUCN category:* LC

Carex brachystachys Schrank*Distribution:* Ppe*IUCN category:* EN

Remarks: The only confirmed report from the studied area (Blasco, 1981) comes from NW Cadí range (Canal de l'Aigua area) where *C. brachystachys* was collected in 1976 (our verification of its identity, based on herbarium specimens, has been confirmed by M. Luceño, 16 Nov 2021). Other occurrences are unclear, require confirmation or are erroneous.

Carex brevicollis DC.*Distribution:* Pe ?Ppc*IUCN category:* VU

Remarks: Apparently restricted to Tosa d'Alp massif (Soriano & Aymerich, 2017). It was also imprecisely reported from Boumort massif in Ppc (Montserrat, 1986).

Carex canescens L. subsp. *canescens* [*C. curta* Gooden.]*Distribution:* Pa Pc*IUCN category:* LC***Carex capillaris*** L.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Carex caryophyllea*** Latourr.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC***Carex curvula*** All. subsp. *curvula**Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Carex curvula*** subsp. *rosae* Gilomen*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Carex davalliana*** Sm.*Distribution:* Pa Pc Pe Ppc Ppe ?O*IUCN category:* LC

Remarks: Its occurrence in O is poorly documented (Oliver & Font, 2009).

Carex demissa Hornem. [*C. flava* subsp. *oedocarpa* (Andersson) O. Bolòs & Vigo]*Distribution:* Pa Pc Pe Ppe Ae R Cn Cc ?Cs*IUCN category:* LC

Remarks: The respective distribution areas of the taxa belonging to the *C. flava* group are not clearly defined at present, due to misidentifications and the existence of hybrids.

Carex depauperata With.*Distribution:* Pe O Cn Cc*IUCN category:* NT***Carex depressa*** Link subsp. ***basilaris*** (Jord.) Kerguelén*Distribution:* Pc R Cn Cc*IUCN category:* LC***Carex diandra*** Schrank*Distribution:* Pa*IUCN category:* EN*Remarks:* Known from a single location in vall d'Aiguamòg (Sáez & al., 2010).***Carex digitata*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Carex distachya*** Desf.*Distribution:* Pe R Cn Cc*IUCN category:* LC***Carex distans*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Carex disticha*** Huds.*Distribution:* Pc Pe Ppe Cn*IUCN category:* LC***Carex divisa*** Huds. [*C. divisa* subsp. *chaetophylla* (Steud.) Nyman]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Luceño (2008) discussed the variation in this species but refrained from accepting infraspecific taxa.***Carex divulsa*** Stokes [*C. muricata* subsp. *divulsa* (Stokes) Celak]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Carex echinata*** Murray*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC

Carex elata All. subsp. *elata**Distribution:* R Cs*IUCN category:* VU*Remarks:* Not found recently in Cs; the last report goes back to Balada (1985).***Carex ericetorum*** Pollich*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Carex extensa*** Gooden.*Distribution:* Ae S Cn Cc Cs*IUCN category:* LC***Carex flacca*** Schreb. [*C. flacca* subsp. *serrulata* (Spreng.) Greuter]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Carex flava*** L. [*C. flava* subsp. *alpina* (Kneuck.) O. Bolòs, Masalles & Vigo]*Distribution:* Pa ?Pc ?Pe*IUCN category:* LC*Remarks:* Apparently pure populations are restricted to Aran valley, whereas in other areas there are hybrid populations with other taxa of the group (Luceño, 2008).***Carex foetida*** All.*Distribution:* Pa*IUCN category:* NT***Carex frigida*** All.*Distribution:* Pa Pc Pe*IUCN category:* LC***Carex grioletii*** Roem.*Distribution:* O Cn*IUCN category:* LC***Carex hallerana*** Asso*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Carex hirta*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC

Carex hispida Willd.*Distribution:* Ppc S R Cc Cs*IUCN category:* LC***Carex hordeistichos*** Vill.*Distribution:* Ppc Ppe Cs*IUCN category:* LC***Carex humilis*** Leyss.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Carex lachenalii*** Schkuhr subsp. *lachenalii**Distribution:* Pa*IUCN category:* VU***Carex lasiocarpa*** Ehrh.*Distribution:* Pa*IUCN category:* VU***Carex leersii*** F.W. Schultz [*C. divulsa* subsp. *leersii* (Kneuck.) W. Koch]*Distribution:* Pa ?Pc ?Pe Ppc ?Ppe Ae Cs*IUCN category:* LC*Remarks:* Most populations could correspond to what was called *C. magacis* A. Mol. & al. (Molina & al., 2008). However, Jiménez-Mejías & Luceño (2011, sub *C. divulsa* subsp. *leersii*) reduced *C. magacis* to synonymy of *C. leersii*.***Carex lepidocarpa*** Tausch [*C. flava* subsp. *lepidocarpa* (Tausch) Lange]*Distribution:* Pa Pc Pe Ppc Ppe Cn Cc Cs*IUCN category:* LC*Remarks:* The respective distribution areas of the taxa belonging to the *C. flava* group are not clearly defined at present, due to misidentifications and the existence of hybrids.***Carex leporina*** L. [*C. ovalis* Gooden.]*Distribution:* Pa Pc Pe Ppe Cn*IUCN category:* LC***Carex limosa*** L.*Distribution:* Pa Pc*IUCN category:* VU***Carex liparocarpos*** Gaudin subsp. *liparocarpos**Distribution:* Pa Pc Pe Ppc Ae Aw S O Cn*IUCN category:* LC

Carex macrostyla Lapeyr.*Distribution:* Pa Pc*IUCN category:* LC***Carex mairei*** Coss. & Germ.*Distribution:* Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Carex montana*** L.*Distribution:* Pc Pe Ppc Ppe Ae O*IUCN category:* LC***Carex muricata*** L.*Distribution:* Pa Pc*IUCN category:* VU

Remarks: Reported from Alt Àneu (Villar, 2007) and Val de Tredós (Molina & al., 2008). Plants from Val de Tredós (Pa) are referable to subsp. *cesanensis* A. Molina & al., although the limits between the two subspecies are unclear (Molina & al., 2008). Jiménez-Mejías & Luceño (2011) reduced *C. muricata* subsp. *cesanensis* to synonymy of typical *C. muricata*.

Carex myosuroides Vill. [*Kobresia myosuroides* (Vill.) Fiori]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Carex nigra*** (L.) Reichard*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Carex oederi*** Retz. [*C. viridula* Michx.; *C. flava* subsp. *viridula* (Michx.) O. Bolòs & Vigo]*Distribution:* Pc Cn*IUCN category:* LC

Remarks: The respective distribution areas of the taxa belonging to the *C. flava* group are not clearly defined at present, due to misidentifications and the existence of hybrids.

Carex oedipostyla Duval-Jouve*Distribution:* Ppe R Cn*IUCN category:* LC***Carex olbiensis*** Jord.*Distribution:* ?Pe Cn Cc Cs*IUCN category:* LC

Remarks: In Pe is known only from the northern slope of Albera massif (Font, 2000), outside the area concerned in this study.

Carex ornithopoda Willd. [*C. ornithopoda* subsp. *ornithopododioides* (Hausm.) Nyman]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Carex otrubae Podp. [*C. cuprina* auct., non (Heuff.) A. Kern.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs

IUCN category: LC

Carex pairae F.W. Schultz [*C. muricata* subsp. *pairae* (F.W. Schultz) Celak; *C. muricata* auct., non L.; *C. muricata* subsp. *lamprocarpa* auct., non Celak]

Distribution: Pc Pe Ppe O Cn Cc ?Cs

IUCN category: LC

Remarks: In Cs there are reports attributed alternatively to *C. pairae* (Bolòs & Vigo, 2001) or *C. divulsa* subsp. *leersii* (Royo, 2007).

Carex pallescens L.

Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Carex panicea L.

Distribution: Pa Pc Pe Ppc Ppe R ?Cn

IUCN category: LC

Remarks: Its presence in Cn (Montseny massif) (Bolòs, 1983, sub *Carex* cf. *panicea*) requires confirmation. *Carex panicea* was also reported from Cs (Port massif), close to the boundary of Cs (Villaescusa, 2000).

Carex paniculata L. subsp. *paniculata*

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Carex parviflora Host [*C. atrata* subsp. *nigra* (Gaudin) Hartm.]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Carex pui Sennen [*C. sylvatica* subsp. *pui* (Sennen) A. Bolòs & O. Bolòs]

Distribution: Ae R Cn Cc Cs

IUCN category: LC

Remarks: See Benítez-Benítez & al. (2017) and Troia & al. (2018) for taxonomy.

Carex pendula Huds.

Distribution: Pa Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Carex pilulifera L. subsp. ***pilulifera****Distribution:* Pa Pc ?Ppe*IUCN category:* LC*Remarks:* Its presence in Ppe (Rosell, 1978) requires confirmation.***Carex praecox*** Schreb.*Distribution:* Ppc Ppe Ae R Cn*IUCN category:* DD***Carex pseudocyperus*** L.*Distribution:* Ppc R Cn*IUCN category:* VU*Remarks:* An old report for Montserrat (Cc) correspond to cultivated plants (Nuet & Panareda, 1993).***Carex pulicaris*** L.*Distribution:* Pa Pc*IUCN category:* LC***Carex punctata*** Gaudin*Distribution:* Pe R Cn Cc*IUCN category:* LC***Carex pyrenaica*** Wahlenb.*Distribution:* Pa Pc Pe*IUCN category:* LC***Carex remota*** L.*Distribution:* Pa Pc Pe Ae O R Cn Cc*IUCN category:* LC***Carex riparia*** Curtis*Distribution:* Ppc Ae S O R Cn Cc Cs*IUCN category:* LC***Carex rostrata*** Stokes*Distribution:* Pa Pc Pe*IUCN category:* LC***Carex rupestris*** All.*Distribution:* Pa Pc Pe ?Ppe*IUCN category:* LC*Remarks:* Its occurrence in Ppe (Gruber, 1978; Vigo & al., 2003) requires confirmation.

Carex sempervirens subsp. ***pseudotristis*** (Domin) Pawl.

Distribution: Pa Pc Pe

IUCN category: LC

Carex sempervirens Vill. subsp. ***sempervirens***

Distribution: Pa Pc Pe Ppc

IUCN category: LC

Carex spicata Huds. [*C. muricata* subsp. *contigua* (Hoppe) Moravec]

Distribution: Pc Pe Ppc Ppc Cn

IUCN category: LC

Carex sylvatica Huds. subsp. ***sylvatica***

Distribution: Pa Pc Pe Ppc Ppc Ae O Cn Cc

IUCN category: LC

Carex tomentosa L.

Distribution: Pc Ppc Ppc Ae Aw Cn

IUCN category: LC

Carex umbrosa subsp. ***buetiana*** (Boiss.) Sóo

Distribution: Pa Pc Pe Ppc Ppc

IUCN category: LC

Carex umbrosa Host subsp. ***umbrosa***

Distribution: Pc Pe Cn

IUCN category: LC

Carex vesicaria L.

Distribution: Pa Pc

IUCN category: LC

Carex demissa × ***C. lepidocarpa***

Distribution: Pa Pc

Remarks: Probably more widespread than currently documented.

Cladium mariscus (L.) Pohl

Distribution: Ppc S R Cn Cc Cs

IUCN category: LC

Cyperus alternifolius L. subsp. ***flabelliformis*** (Rottb.) Kük. [*C. involucratus* Rottb.]

Non-native: N

Distribution: R Cn Cc Cs

Cyperus capitatus Vand.*Distribution:* R Cn Cc Cs*IUCN category:* LC***Cyperus congestus*** Vahl*Non-native:* N*Distribution:* Cn*Remarks:* A fairly characteristic alien associated with the wool-processing industry, reported from Vallès county (Verloove, 2014).***Cyperus difformis*** L.*Non-native:* N*Distribution:* S Cn Cc Cs***Cyperus distachyos*** All. [*C. laevigatus* subsp. *distachyos* (All.) Ball.]*Distribution:* [Cn] Cc Cs*IUCN category:* LC***Cyperus eragrostis*** Lam.*Non-native:* I*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs***Cyperus esculentus*** L.*Non-native:* N*Distribution:* S R Cn Cc Cs*Remarks:* Its non-native status is uncertain.***Cyperus exaltatus*** Retz. [incl. *C. dives* Delile]*Non-native:* N*Distribution:* Cn*Remarks:* It may be a remnant of the alien flora associated with the former wool-processing industry in the vicinity of Sabadell (Verloove, 2014). Reports of *C. imbricatus* Retz. are referable to *C. exaltatus* (Verloove, 2006).***Cyperus flavescens*** L. [*Pycnus flavescens* (L.) Rchb.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cs*IUCN category:* LC***Cyperus flavidus*** Retz. [*Pycnus flavidus* (Retz.) T. Koyama]*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cyperus fuscus*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Cyperus glomeratus L.*Non-native:* N*Distribution:* S*Remarks:* Its non-native status is uncertain. It is known from a single location in Segre river (Balaguer); probably adventive (Castroviejo, 2008; Verloove & Sánchez Gullón, 2008).***Cyperus longus*** L.*Distribution:* Pa Pc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cyperus odoratus*** L. [*C. auricomus* sensu R.A. DeFilips, non Sieber & Spreng.; *C. digitatus* subsp. *auricomus* sensu O. Bolòs & Vigo, non (Spreng.) Kük.]*Non-native:* N*Distribution:* S Cs*Remarks:* See Verloove (2014) for its distribution.***Cyperus papyrus*** L.*Non-native:* C*Distribution:* ?Cn ?Cc Cs*Remarks:* Known from a single location in Ebre river (Royo, 2006); listed without concrete location for Barcelona metropolitan area (Basnou & al., 2015).***Cyperus rotundus*** L.*Distribution:* Ppc Aw S O R Cn Cc Cs*IUCN category:* LC***Cyperus serotinus*** Rottb.*Distribution:* Ppc S R Cn Cc Cs*IUCN category:* LC***Cyperus strigosus*** L. [*C. auricomus* auct., non Spreng.; *C. digitatus* subsp. *auricomus* sensu O. Bolòs & Vigo, non (Spreng.) Kük.]*Non-native:* C*Distribution:* Cn*Remarks:* Collected between 1917 and 1940 in the lower area of the Montseny massif (Sáez & al., 2017). Reports of *C. odoratus* L. from eastern Catalonia are referable to *C. strigosus*.***Eleocharis acicularis*** (L.) Roem. & Schult.*Distribution:* R Cn*IUCN category:* LC

Eleocharis bonariensis Nees*Non-native:* C*Distribution:* Cc*Remarks:* Known only from the Llobregat Delta (González & al., 2016).*Eleocharis mamillata* (H. Lindb. fil.) H. Lindb. fil. subsp. *austriaca* (Hayek) Strandh.
[*E. palustris* subsp. *mamillata* (Lindb. fil.) Beauv.]*Distribution:* Pa Pc*IUCN category:* NT*Eleocharis multicaulis* (Sm.) Desv.*Distribution:* ?Pa ?Pc R*IUCN category:* LC*Remarks:* Reports from Pa and Pc (Ballesteros & al., 1983; Canalís & al., 1984) are doubtful and correspond to an unusual habitat for this species.*Eleocharis palustris* (L.) Roem. & Schult. subsp. *palustris**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* The respective distribution areas of both subspecies recognised within *E. palustris* are not clearly defined at present.*Eleocharis palustris* subsp. *waltersii* Bures & Danihelka [*E. palustris* subsp. *vulgaris* Walters; *E. palustris* subsp. *pyrenaica* Carrillo Ortuño & Ninot]*Distribution:* Pc*IUCN category:* LC*Remarks:* Listed for Girona and Tarragona provinces by Jiménez Mejías & Luceño (2008).*Eleocharis parvula* (Roem. & Schult.) Bluff, Nees & Schauer*Non-native:* N*Distribution:* Cs*Remarks:* Its non-native status is uncertain. The species is known from a single location in the Ebre Delta (Torres, 1998).*Eleocharis quinqueflora* (Hartmann) O. Schwarz*Distribution:* Pa Pc Pe Ppc Ppe Cn Cs*IUCN category:* LC*Eleocharis uniglumis* (Link) Schult. [*E. palustris* subsp. *uniglumis* (Link.) Hartm.]*Distribution:* Ppc Ae Cn Cc*IUCN category:* LC*Eriophorum angustifolium* Honck.*Distribution:* Pa Pc Pe*IUCN category:* LC

Eriophorum latifolium HoppeDistribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Eriophorum vaginatum L.Distribution: Pa Pc Pe

IUCN category: LC

Fimbristylis bisumbellata (Forssk.) Bubani

Non-native: C

Distribution: +Cn

Remarks: Reported from Barcelona and Maresme (Cadevall, 1937); not found recently and apparently vanished.

Isolepis cernua (Vahl) Roem. & Schult. [*Scirpus cernuus* Vahl]Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Isolepis setacea (L.) R. Br. [*Scirpus setaceus* L.]Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc Cs

IUCN category: LC

Schoenoplectiella mucronata (L.) J. Jung & H.K. Choi [*Scirpus mucronatus* L.; *Schoenoplectus mucronatus* (L.) Palla]Distribution: S R Cn Cs

IUCN category: LC

Schoenoplectiella supina (L.) Lye [*Scirpus supinus* L.; *Schoenoplectus supinus* (L.) Palla]Distribution: S O R Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain. For generic delineation see Lye (2003) and (Shiels & al., 2014).

Schoenoplectus lacustris (L.) Palla [*Scirpus lacustris* L.]Distribution: Pc Ae O R ?Cs

IUCN category: DD

Schoenoplectus litoralis (Schrad.) Palla [*Scirpus litoralis* Scrad.]Distribution: S R Cn Cc Cs

IUCN category: LC

Schoenoplectus tabernaemontani (C.C. Gmel.) Palla [*Scirpus lacustris* subsp. *tabernaemontani* (C.C. Gmel.) Syme]Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Schoenus nigricans L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Scirpoides holoschoenus*** (L.) Soják [*Scirpus holoschoenus* L.; *Holoschoenus vulgaris* Link]*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Scirpus sylvaticus*** L.*Distribution:* Pa Pc Pe Ppe*IUCN category:* NT*Remarks:* Restricted to the upper Segre valley and lower Aran valley.***Trichophorum cespitosum*** (L.) Hartm. [*Scirpus cespitosus* L.]*Distribution:* Pa Pc Pe*IUCN category:* LC**POACEAE*****Achnatherum bromoides*** (L.) P. Beauv. [*Stipa bromoides* (L.) Dörf.]*Distribution:* Pc Ppe ?O R Cn Cc*IUCN category:* LC*Remarks:* Its presence in O requires confirmation.***Achnatherum calamagrostis*** (L.) P. Beauv. [*Stipa calamagrostis* (L.) Wahlenb.]*Distribution:* Pa Pc Pe Ppc Ppe O Cc Cs*IUCN category:* LC***Achnatherum paradoxum*** (L.) Banfi, Galasso & Bartolucci [*Piptatherum paradoxum* (L.) P. Beauv.; *Oryzopsis paradoxa* (L.) Nutt.]*Distribution:* Pc Pe Ppc Ppe Ae Aw R Cn Cc Cs*IUCN category:* LC***Aegilops cylindrica*** Host*Non-native:* C*Distribution:* Ppc*Remarks:* Reported from Oliana, Alt Urgell (Guardiola & al., 2016).***Aegilops geniculata*** Roth*Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC

Aegilops neglecta Bertol.*Distribution*: ?Aw R Cn Cc*IUCN category*: LC*Remarks*: Reports from Aw (Guixé & al., 2008) are doubtful.***Aegilops triuncialis*** L.*Distribution*: Pc ?Pe Ppc Ppe S Cn Cc Cs*IUCN category*: LC*Remarks*: Its presence in Albera massif (Pe) requires confirmation.***Aegilops ventricosa*** Tausch*Distribution*: Ae O Cn Cc Cs*IUCN category*: LC***Aeluropus littoralis*** (Gouan) Parl.*Distribution*: S R Cc Cs*IUCN category*: LC×***Agropogon littoralis*** (Sm.) C.E. Hubb. [*Polypogon littoralis* Sm.; *Agrostis stolonifera* × *Polypogon monspeliensis*]*Distribution*: R Cc***Agropyron cristatum*** (L.) Gaertn.*Distribution*: Aw S Cc*IUCN category*: LC*Remarks*: *Agropyron cristatum* var. *pectiniforme* (Roem. & Schult.) H.L. Yang was reported from Aw, Cn and Cc as locally naturalised in waysides and suburban, where it was introduced for revegetation purposes (Pyke, 2008b; Gesti & Vilar, 2019).***Agrostis canina*** L. subsp. *canina**Distribution*: ?Pa Pc Pe Ppc R*IUCN category*: LC***Agrostis capillaris*** L. subsp. *capillaris**Distribution*: Pa Pc Pe Ppc Ppe O R Cn*IUCN category*: LC***Agrostis castellana*** Boiss. & Reut. [*A. capillaris* subsp. *castellana* (Boiss. & Reut.) O. Bolòs Masalles & Vigo; incl. *A. castellana* var. *olivetorum* (Godr. & Gren.) Kerguélen]*Distribution*: Ppc Ppe Ae R Cn Cc Cs*IUCN category*: LC

Agrostis rupestris All. [*A. rupestris* subsp. *pyrenaica* (Pourr.) Dostál]

Distribution: Pa Pc Pe ?Ppc Ppe

IUCN category: LC

Remarks: Diploid and tetraploid plants occur in the studied area (Romero, 1988).

Agrostis schraderiana Bech. [*A. agrostiflora* (Beck) Rauschert]

Distribution: Pc Pe

IUCN category: LC

Agrostis stolonifera L. subsp. *stolonifera*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Agrostis* × *fuilladei P. Fourn. [*A. capillaris* × *A. castellana*]

Distribution: Cn

Remarks: Romero (1988) reported this taxon from Collserola and Montnegre mountains; probably overlooked in other areas.

Agrostis* × *murbeckii Fouill. [*A. capillaris* × *A. stolonifera*]

Remarks: Romero (2021) listed this taxon for Girona province.

Agrostula truncatula (Parl.) P.M. Peterson, Romasch., Soreng & Sylvester subsp. *durieui* (Willk.) P.M. Peterson, Romasch., Quintanar, Soreng & Sylvester [*Agrostis durieui* Willk.; *A. truncatula* subsp. *commixta* Castrov. & Charpin; *Neoschischkinia truncatula* (Parl.) Valdés & H. Scholz subsp. *durieui* (Willk.) Valdés & H. Scholz]

Distribution: Pa

IUCN category: DD

Remarks: See Peterson & al. (2020) for taxonomy. Reported from Montluda mountain (Rivas-Martínez & al., 2012).

Aira caryophyllea L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Remarks: A highly variable species; poorly developed specimens can be easily confused with *A. elegans* Roem. & Schult. (Sáez & al., 2020).

Aira cupaniana Guss.

Distribution: Ppe Ae R Cn Cc

IUCN category: LC

Aira elegans Roem. & Schult. [*A. elegantissima* Schur]

Distribution: Ppc Ae O R Cn

IUCN category: LC

Aira multiculmis Dumort. [*A. caryophyllea* subsp. *plesiantha* (Jord.) K. Richt.; *A. caryophyllea* subsp. *multiculmis* (Dumort.) Bonnier & Layens]

Distribution: O R Cn Cc

IUCN category: LC

Aira praecox L.

Distribution: Pa Cn

IUCN category: DD

Remarks: Reported from Vallès Oriental (Guardiola & al., 2020).

Aira tenorei Guss.

Distribution: Cn

IUCN category: NT

Remarks: It is restricted but locally abundant in Cadiretes massif (L. Sáez, unpubl. data).

Airopsis tenella (Cav.) Coss. & Durieu

Distribution: Cn

IUCN category: VU

Remarks: Reported from a single location in Gavarres massif (see Sáez & al., 2010). This species is also known from northern slope of Albera massif, close to the boundary of Pe.

Alopecurus aequalis Sobol. [*A. geniculatus* subsp. *fulvus* (Sm.) Husnot]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Alopecurus alpinus Vill. [*A. gerardii* Vill., nom. illeg.]

Distribution: Pa Pc ?Pe

IUCN category: LC

Remarks: Its presence in Pe requires confirmation (see Bolòs & Vigo, 2001).

Alopecurus arundinaceus Poir. subsp. *arundinaceus*

Distribution: Pe Ppc [R]

IUCN category: NT

Alopecurus bulbosus Gouan

Distribution: R

IUCN category: NT

Remarks: A report for Aw (Guixé & al., 2008) is in all probability erroneous.

Alopecurus geniculatus L.

Distribution: Pa Pe R

IUCN category: LC

Alopecurus myosuroides Huds.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Alopecurus pratensis*** L. subsp. *pratensis**Distribution:* ?Pa ?Pc ?Pe O Cn*IUCN category:* LC***Alpagrostis alpina*** (Scop.) P.M. Peterson, Romasch., Soreng & Sylvester [*Agrostis alpina* Scop.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Remarks:* See Peterson & al. (2020) for taxonomy of this *Alpagrostis*.***Alpagrostis schleicheri*** (Jord. & Verl.) P.M. Peterson, Romasch., Soreng & Sylvester [*Agrostis schleicheri* Jord. & Verl.; *A. alpina* subsp. *schleicheri* (Jord. & Verl.) Nyman]*Distribution:* Pa Pc Pe Ppc Ppe Cs*IUCN category:* LC***Amelichloa brachychaeta*** (Godr.) Arriaga & Barkworth [*Stipa brachychaeta* Godr.; *Nasella brachychaeta* (Godr.) Barkworth; *Jarava brachychaeta* (Godr.) Peñail.]*Non-native:* C*Distribution:* Cn*Remarks:* It is well-established in waste places near human settlements (Veerlove, 2005).***Amelichloa caudata*** (Trin.) Arriaga & Barkworth [*Stipa caudata* Trin.; *Jarava caudata* (Trin.) Peñail.]*Non-native:* I*Distribution:* R Cn Cc*Remarks:* Fully naturalised in several locations, where it usually grows in stony riverbeds, banks and waste places. Its presence in Cn could be explained by the former introduction of wool (see Verloove, 2005).***Ampelodesmos mauritanicus*** (Poir.) T. Durand & Schinz*Distribution:* Ae R Cn Cc Cs*IUCN category:* LC***Andropogon distachyos*** L.*Distribution:* Pc Pe Ppe S O R Cn Cc Cs*IUCN category:* LC***Anisantha diandra*** (Roth) Tzvelev [*Bromus diandrus* Roth; *B. gussonei* Parl.]*Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Anisantha fasciculata (C. Presl) Nevski [*Bromus fasciculatus* C. Presl]

Distribution: S Cc

IUCN category: LC

Anisantha madritensis (L.) Nevski [*Bromus madritensis* L.]

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Anisantha rigida (Roth) Hyl. [*Bromus rigidus* Roth; *B. diandrus* subsp. *maximus* (Desf.) Soó]

Distribution: Pa ?Pc Pe Ppc Ppe Ae S R Cn Cc Cs

IUCN category: LC

Anisantha rubens (L.) Nevski [*Bromus rubens* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Anisantha sterilis (L.) Nevski [*Bromus sterilis* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Anisantha tectorum (L.) Nevski [*Bromus tectorum* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Anthoxanthum aristatum Boiss. [*A. ovatum* subsp. *aristatum* (Boiss.) R. Litard.; *A. odoratum* subsp. *aristatum* (Boiss.) Trab.]

Distribution: R

IUCN category: LC

Anthoxanthum odoratum L.

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Apera interrupta (L.) P. Beauv.

Distribution: Pc Pe Ppc Aw Cn Cs

IUCN category: LC

Arrhenatherum album (Vahl) W.D. Clayton subsp. ***album*** [incl. *A. elatius* subsp. *erianthum* (Boiss. & Reut.) Trab.]

Distribution: Cc Cs

IUCN category: LC

Arrhenatherum elatius* subsp. *bulbosum (Willd.) Schübl. & G. Martens*Distribution:* Pa Cn Cc Cs*IUCN category:* LC*Remarks:* The occurrence of this species in Pa is based on a specimen collected in Bausen (MA 511562, det. C. Romero Zarco; pers. comm. 20 Dec 2020).***Arrhenatherum elatius*** (L.) J. Presl & C. Presl subsp. *elatius**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Arrhenatherum elatius* subsp. *sardoum*** (E. Schmid) Gamisans [*A. murcicum* Sennen; *A. elatius* subsp. *braun-blanquetii* P. Monts. & L. Villar]*Distribution:* Pc Ppc Ppe ?Aw Cc Cs*IUCN category:* LC*Remarks:* Reports from Aw (Guixé & al., 2008) require confirmation.***Arundo donax*** L.*Distribution:* Non-native: I

Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Arundo micrantha Lam. [*A. mediterranea* Danin; *A. mauritanica* Desf., nom. illeg, non Poir.; *A. plinii* auct., non Turra]*Distribution:* S Cc Cs*IUCN category:* DD*Remarks:* Known from lower basin of Ebre river (Danin & al., 2008). See Hardion & al. (2012) for the nomenclature and taxonomy of this circum-Mediterranean species.***Avellinia festucoides*** (Link) Valdés & H. Scholz [*A. michelii* (Savi) Parl.]*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Avena barbata*** Link subsp. *barbata**Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* *Avena barbata* subsp. *castellana* Romero Zarco [*A. barbata* var. *saxatilis* Lojac.] was reported from several locations in Aragon (southern Huesca province), close to the boundary of S.***Avena byzantina*** C. Koch [*A. sativa* L. subsp. *byzantina* (C. Koch) Romero Zarco]*Non-native:* C*Distribution:* R Cc***Avena fatua*** L. subsp. *fatua**Non-native:* N*Distribution:* Pa Ppc Ppe Ae O Cn Cc Cs

Avena sativa L.

Non-native: C

Distribution: Pc Ppc Ppe Ae Aw S O Cn Cc Cs

Avena sterilis subsp. *ludoviciana* (Durieu) Gillet & Magne [*A. ludoviciana* Durieu]Distribution: Pe Ppc Ppe Aw S O Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Avena sterilis L. subsp. *sterilis*Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Avenella flexuosa (L.) Drejer [*Deschampsia flexuosa* (L.) Trin.]Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn

IUCN category: LC

Avenula pubescens (Huds.) Dumort. subsp. *pubescens*Distribution: Pc Pe Ppc Ppe Ae Aw O Cn ?Cc

IUCN category: LC

Remarks: Reports from Montserrat mountain (Cc) (Braun-Blanquet, 1935) require confirmation. This species is known from Fredes, Castelló Province (Villaescusa, 2000), close to the boundary of Cs.

Axonopus compressus (Sw.) P. Beauv.

Non-native: C

Distribution: Cn

Remarks: Reported from a single location in Barcelona urban area (Montjuïc) where it was found growing on a slope planted with ivy (*Hedera* L. cultivars) (Pyke, 2013b).

Bellardiachloa variegata (Lam.) Kerguélen [*B. violacea* (Bellardi) Chiov.]Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Bothriochloa barbinodis (Lag.) Herter

Non-native: N

Distribution: Pe Ae R Cn

Remarks: First report from La Roca del Vallès (Pyke, 2010). Verloove & Aymerich (2020) reported *B. barbinodis* from several locations in northeastern Catalonia; later found elsewhere. This species may have arrived to our area from southern France by means of road transport.

Bothriochloa ischaemum (L.) Keng [*Dichanthium ischaemum* (L.) Robery]Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Bothriochloa saccharoides (Sw.) Rydb. [*Dichanthium saccharoides* (Sw.) Roberty]

Non-native: C

Distribution: R

Remarks: Cultivated for ornament and locally naturalised in waysides (Font, 2000).

Bouteloua dactyloides (Nutt.) Columbus

Non-native: C

Distribution: Cn Cc

Remarks: Reported from Sant Vicenç dels Horts (Baix Llobregat) (Álvarez & al., 2016) and Sant Feliu de Buixalleu (Selva) (Gómez-Bellver & al., 2019c).

Bouteloua gracilis (Kunth) Griffiths

Non-native: C

Distribution: Cn

Remarks: It is more or less established on rocky slopes near Palafolls (Verloove, 2004).

Brachypodium distachyon (L.) P. Beauv.

Distribution: ?Pe Ppc ?Ppe ?Ae ?Aw S ?O ?R Cn Cc ?Cs

IUCN category: LC

Remarks: The substantial morphologic, cytogenetic and molecular differences detected among the three *B. distachyon* sensu lato cytotypes allow their taxonomic separation into three distinct species (Catalán & al., 2012).

Brachypodium hybridum Catalán, Joch. Müll., Hasterok & Jenkins

Distribution: ?Pe ?Ppc ?Ppe ?Ae ?Aw S ?O R Cn Cc Cs

IUCN category: LC

Remarks: This species is an allotetraploid derived from the cross between *B. stacei* and *B. distachyon*. It differs from *B. distachyon* in its chromosome number ($2n=30$) and its longer lemmas and often longer spikelets and distal glumes (Catalán & al., 2012).

Brachypodium phoenicoides (L.) Roem. & Schult.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Brachypodium pinnatum (L.) P. Beauv. [*B. pinnatum* subsp. *rupestre* (Host) Schübl. & G. Martens]

Distribution: Pa Pc Ppc

IUCN category: LC

Brachypodium retusum (Pers.) P. Beauv.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Brachypodium sylvaticum (Huds.) P. Beauv. subsp. *sylvaticum*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Briza maxima L.

Distribution: O R Cn Cc

IUCN category: LC

Briza media L. subsp. *media*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Briza minor L.

Distribution: Pa O R Cn Cc

IUCN category: LC

Remarks: Reports from Pa (Nègre & al., 1982) are probably erroneous.

Bromopsis benekenii (Lange) Holub [*Bromus benekenii* (Lange) Trimen; *B. ramosus* subsp. *benekenii* (Lange) Schinz & Thell.; *B. ramosus* auct.]

Distribution: Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Its presence in Collserola mountain (Cn) is unclear (see Bolòs & Vigo, 2001).

Bromopsis erecta (Huds.) Fourr. subsp. *erecta* [*Bromus erectus* Huds. subsp. *erectus*]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw ?S O R Cn Cc Cs

IUCN category: LC

Bromopsis inermis (Leyss.) Holub subsp. *inermis* [*Bromus inermis* Leyss. subsp. *inermis*]

Non-native: C

Distribution: Pc Ppe Aw Cn Cs

Bromopsis ramosa (Huds.) Holub [*Bromus ramosus* Huds.]

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Bromus arvensis L.

Non-native: N

Distribution: Pa Pc ?Aw ?R Cc Cs

Remarks: Its non-native status is uncertain. Reports from Aw (Lapraz, 1953; Guixé & al., 2008) and R (Vayreda, 1879) require confirmation.

Bromus commutatus Schrad.

Distribution: Pc Pe Ppc Ppe ?Aw O R Cn Cc Cs

IUCN category: LC

Bromus hordeaceus subsp. ***divaricatus*** (Bonnier & Layens) Kerguélen [*B. hordeaceus* subsp. *molliformis* (Billot) Maire & Weiller]

Distribution: Aw S R Cn Cc

IUCN category: LC

Bromus hordeaceus L. subsp. ***hordeaceus*** [*B. mollis* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw ?S O R Cn Cc Cs

IUCN category: LC

Remarks: *Bromus hordeaceus* subsp. *mediterraneus* (H. Scholz & F.M. Vázquez) H. Scholz [*B. molliformis* Billot subsp. *mediterraneus* Scholz & F.M. Vázquez] was reduced to synonymy of typical *B. hordeaceus* (Acedo & Llamas, 2021).

Bromus intermedius Guss.

Distribution: Ppc Ppe Aw S Cn Cc Cs

IUCN category: LC

Bromus lanceolatus Roth

Distribution: S R Cn Cc Cs

IUCN category: LC

Bromus racemosus L. subsp. ***racemosus***

Distribution: Pa Pc Pe Ppe Ae S O Cn Cc

IUCN category: LC

Bromus secalinus L.

Non-native: C

Distribution: Pc R Cn

Bromus squarrosus L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Calamagrostis arenaria (L.) Roth [*Ammophila arenaria* (L.) Link; incl. *A. arenaria* subsp. *arundinacea* H. Lindb.]

Distribution: R Cn Cc Cs

IUCN category: LC

Calamagrostis arundinacea (L.) Roth

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Calamagrostis epigeios (L.) Roth subsp. ***epigeios****Distribution*: S*IUCN category*: DD*Remarks*: It was collected in Segre River, close to Alcoletge, 20 Apr 1948, O. Bolòs & Braun Blanquet, BC 118029 (A.T. Romero, pers. comm.).***Catabrosa aquatica*** (L.) P. Beauv.*Distribution*: Pa Pc Pe R*IUCN category*: LC***Catapodium hemipoa*** (Spreng.) M. Laínz [*C. rigidum* subsp. *hemipoa* (Spreng.) Stace; incl. *C. occidentale* Paunero; *C. hemipoa* subsp. *occidentale* (Paunero) H. Scholz & S. Scholz; *C. zwierleinii* (Lojac.) Brullo]*Distribution*: R Cn Cc Cs*IUCN category*: LC***Catapodium marinum*** (L.) C.E. Hubb. [*C. loliaceum* (Huds.) Link ; *Desmazeria marina* (L.) Druce]*Distribution*: R Cn Cc Cs*IUCN category*: LC***Catapodium rigidum*** (L.) C.E. Hubb. [*Desmazeria rigida* (L.) Tutin]*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Cenchrus ciliaris*** L.*Non-native*: C*Distribution*: Cn*Remarks*: Reported from roadsides in suburban areas of Barcelona (Pyke, 2003).***Cenchrus clandestinus*** (Chiov.) Morrone [*Pennisetum clandestinum* Chiov.; *Kikuyuochloa clandestina* (Chiov.) H. Scholz]*Non-native*: N*Distribution*: Cn Cc***Cenchrus flaccidus*** (Griseb.) Morrone [*Pennisetum flaccidum* Griseb.]*Non-native*: C*Distribution*: Cn*Remarks*: Reported from a location in Barcelona metropolitan area (Gómez-Bellver & al., 2019a, sub *Pennisetum flaccidum*).***Cenchrus longisetus*** M.C. Johnst. [*Pennisetum villosum* Fresen.]*Non-native*: N*Distribution*: Pc Ppe Aw R Cn Cc Cs

Cenchrus orientalis (Rich.) Morrone [*Pennisetum orientale* Rich.]

Non-native: C

Distribution: Cc

Remarks: Reported from Tarragona by Verloove & al. (2019).

Cenchrus setaceus (Forssk.) Morrone [*Pennisetum setaceum* (Forssk.) Chiov.]

Non-native: N

Distribution: R Cn Cc

Remarks: Cultivated for ornament; locally naturalised (Font, 2000); known from Salou, Tarragonès (Verloove & al., 2019) and Tordera, Selva (F. Verloove, unpubl. data).

Cenchrus spinifex Cav. [*C. incertus* M.A. Curtis]

Non-native: N

Distribution: O Cn Cc

Ceratochloa cathartica (Vahl) Herter [*Bromus catharticus* Vahl]

Non-native: I

Distribution: Pc Ppc Ppe Ae S O R Cn Cc Cs

Chloris gayana Kunth

Non-native: N

Distribution: R Cc Cs

Chloris truncata R. Br.

Non-native: N

Distribution: Cn Cc

Remarks: First report from Cambrils, Baix Camp (Verloove, 2005; Verloove & Sánchez Gullón, 2012); later found elsewhere, mainly in Barcelona metropolitan area (Sánchez Gullón & Verloove 2015; Verloove & al., 2019).

Chloris virgata Sw.

Non-native: N

Distribution: Cc

Remarks: Reported from Cambrils (Baix Camp), where is naturalised in waste places (Vallverdú, 2000; Verloove & Sánchez Gullón, 2012).

Cleistogenes serotina (L.) Keng [*Kengia serotina* (L.) Packer]

Distribution: Pc Pe Ppc Ppe Ae ?Aw O R Cn Cc

IUCN category: LC

Cortaderia selloana (Schult. & Schult. fil.) Asch. & Graebn.

Non-native: I

Distribution: Pc Ppc Ae Aw S O R Cn Cc Cs

Corynephorus articulatus (Desf.) P. Beauv. [*C. divaricatus* subsp. *articulatus* (Desf.) M. Laínz]

Distribution: R ?Cn Cc

IUCN category: DD

Remarks: Its current distribution is narrower than indicated by the historical reports, as a consequence of the loss of its habitat through coastal urban development. Reports from Cn (Lapraz, 1974) are probably due to confusion with *C. divaricatus*.

Corynephorus canescens (L.) P. Beauv.

Distribution: R Cn

IUCN category: LC

Corynephorus divaricatus (Pourr.) Breistr.

Distribution: Ppc R Cn Cc Cs

IUCN category: LC

Remarks: Found in Montsec range (Ppc) by J. Pedrol (pers. comm.).

Cutandia maritima (L.) Benth. [*Scleropoa maritima* (L.) Parl.]

Distribution: R Cn Cc Cs

IUCN category: LC

Cynodon dactylon (L.) Pers.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Cynosurus cristatus L.

Distribution: Pa Pc Pe Ppe Ae O R Cn Cc

IUCN category: LC

Cynosurus echinatus L.

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Cynosurus effusus Link [*C. elegans* subsp. *obliquatus* (Link) Trab.]

Distribution: Cc Cs

IUCN category: LC

Remarks: Reports from O due to Villegas (1993) are probably erroneous.

Dactylis glomerata* L.Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Remarks: A broad concept of *D. glomerata* is provisionally applied here. Several subspecies, almost morphologically indistinguishable, were reported from our area: typical *D. glomerata* and *D. glomerata* subsp. *hispanica* (Roth) Nyman are widely distributed, whereas *D. glomerata* subsp. *lobata* (Drejer) H. Lindb. was reported from Ripollès county (Pe) by Acedo & Llamas (1991, sub *D. glomerata* subsp. *aschersoniana* (Graebn.) Thell.).

Dactyloctenium aegyptium* (L.) Willd.Non-native:* C*Distribution:* Cn Cc

Remarks: Reported from coastal areas in the Llobregat Delta (Verloove & Sánchez Gullón, 2008) and Barcelona (Pyke, 2013b).

Danthonia decumbens* (L.) DC.Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC

***Deschampsia cespitosa* (L.) P. Beauv. subsp. *cespitosa* [*D. caespitosa* subsp. *hispanica* Vivant; *D. media* subsp. *hispanica* (Vivant) O. Bolòs, Masalles & Vigo]**

Distribution: Pa Pc Pe Ppc Ppe O R*IUCN category:* LC

***Deschampsia cespitosa* subsp. *media* (Gouan) K. Richt. [*D. media* (Gouan) Roem. & Schult.]**

Distribution: Pe Ppc Ppe Ae R Cn Cc Cs*IUCN category:* LC

Remarks: Intermediate plants linking subsp. *caespitosa* and subsp. *media* were called *D. media* subsp. *masclanii* Cervi & Romo [*D. cespitosa* var. *masclansii* (Cervi & Romo) O. Bolòs & Vigo].

Digitaria ciliaris* (Retz.) Koeler [*D. sanguinalis* var. *ciliaris* (Retz.) Maire & Weiller]Non-native:* C*Distribution:* R Cn Cc

Remarks: Sometimes confused with *D. sanguinalis* subsp. *pectiniformis*. See Pyke (2008b) and Molero & al. (2016) for its distribution.

Digitaria ischaemum* (Schreb.) Muhl.Distribution:* Ppc O Cn Cc*IUCN category:* LC

Digitaria radicata (J. Presl) Miquel*Non-native*: C*Distribution*: Cn*Remarks*: Reported from Montjuïc, Barcelona (Alonso & Crespo, 2021).***Digitaria sanguinalis*** (L.) Scop. [*D. sanguinalis* subsp. *pectiniformis* Henrard]*Non-native*: N*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks*: Its non-native character is unclear.***Digitaria violascens*** Link*Non-native*: C*Distribution*: S Cn Cc*Remarks*: First reports from Balaguer and the Llobregat Delta area (Verloove & Sánchez Gullón, 2008); later found elsewhere.***Diplachne fusca*** Roem. & Schult. subsp. *uninervia* (J. Presl) P.M. Peterson & N. Snow [*Leptochloa fusca* subsp. *uninervia* (J. Presl) N. Snow]*Non-native*: N*Distribution*: S R Cc Cs*Remarks*: See Snow & al. (2018) for taxonomy. A report of *D. fusca* subsp. *fascicularis* (Lam.) P.M. Peterson & N. Snow (Royo, 2006, sub *Leptochloa fascicularis* (Lam.) A. Gray) is referable to *D. fusca* subsp. *uninervia*.***Drymochloa sylvatica*** (Pollich) Holub [*Festuca altissima* All.]*Distribution*: Pa Pc*IUCN category*: LC*Remarks*: Reports from eastern Pe and O (Romo, 1989b) require confirmation.***Echinaria capitata*** (L.) Desf.*Distribution*: Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category*: LC***Echinochloa colona*** (L.) Link*Non-native*: N*Distribution*: Ppc Ppe S O R Cn Cc Cs*Remarks*: Its non-native status is uncertain.***Echinochloa crus-galli*** (L.) P. Beauv.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Remarks*: Represented in our area by var. *crus-galli* and var. *hispidula* (Retz.) Honda [*E. crus-galli* subsp. *hispidula* (Retz.) Honda].

Echinochloa frumentacea (Roxb.) Link*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Folgueroles, Osona (Pérez-Haase & al., 2013).*Echinochloa oryzicola* (Vasinger) Vasinger [*E. crus-galli* subsp. *oryzicola* (Vasinger) T. Koyama]*Non-native:* C*Distribution:* S R Cc Cs*Remarks:* See Casasayas (1989) for its distribution.*Echinochloa oryzoides* (Ard.) Fritsch [*E. crus-galli* subsp. *oryzoides* (Ard.) Cif. & Giacom.]*Non-native:* C*Distribution:* S R Cc Cs*Remarks:* See Casasayas (1989) and Royo (2006) for its distribution.*Ebrharta erecta* Lam.*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Montjuïc, in Barcelona urban area (Pyke, 2008b).*Ebrharta longiflora* Sm.*Non-native:* N*Distribution:* Cn*Remarks:* Naturalised in Blanes (Selva) and its surroundings (Casasayas, 1989); also reported from Montjuïc (Muñoz Rodríguez, 2020).*Eleusine indica* (L.) Gaertn.*Non-native:* N*Distribution:* Ppc Ae S O R Cn Cc Cs*Eleusine tristachya* (Lam.) Lam. [*E. tristachya* subsp. *barcinonensis* (Willk.) A. Bolòs & O. Bolòs]*Non-native:* I*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*Elymus athericus* (Link) Kerguélen [*Elymus pycnanthus* (Godr.) Melderis; *E. pungens* (Pers.) Melderis subsp. *pycnanthus* (Gord.) O. Bolòs & Vigo; *Elytrigia atherica* (Link) Kerguélen]*Distribution:* R Cn Cc Cs*IUCN category:* DD

Elymus campestris (Gren. & Godr.) Kerguelen [*Elymus pungens* subsp. *campestris* (Godr. & Gren.) Melderis; *Agropyron campestre* Godr. & Gren.; *Elytrigia campestris* (Godr. & Gren.) Kerguelen]

Distribution: Pc Ppc Ppe Ae S R Cn Cc Cs

IUCN category: LC

Elymus caninus (L.) L. [*Agropyron caninum* (L.) P. Beauv.]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs

IUCN category: LC

Elymus elongatus (Host) Runemark [*Thinopyrum elongatum* (Host) D.R. Dewey; *Elytrigia elongata* (Host) Nevski]

Distribution: R Cc Cs

IUCN category: LC

Elymus farctus (Viv.) Melderis subsp. *farctus* [*Thinopyrum junceum* (L.) Á. Löve subsp. *junceum*; *Elytrigia juncea* (L.) Nevski subsp. *juncea*; *Agropyron junceum* subsp. *mediterraneum* Simonet & Guin.; *Elymus farctus* var. *sartorii* sensu O. Bolòs & Vigo]

Distribution: R Cn Cc Cs

IUCN category: LC

Elymus hispidus (Opiz) Melderis [*Thinopyrum intermedium* (Host) Barkworth & D.R. Dewey subsp. *intermedium*; *Agropyron intermedium* (Host.) P. Beauv.; *Elytrigia intermedia* (Host) Nevski]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Plants with more or less hairy spikelets were called *E. hispidus* subsp. *barbulatus* (Schur) Melderis [*Thinopyrum intermedium* (Host) Barkworth & D.R. Dewey subsp. *barbulatum* (Schur) Barkworth & D.R. Dewey; *Elytrigia intermedia* subsp. *trichophora* (Link) Á. Löve & D. Löve]. However, specimens with glabrous or hairy spikelets are largely sympatric and are connected by intermediates. Plants with hairy spikelets were reported from waysides in the Barcelona area (Pyke, 2009) but they also exist in natural populations.

Elymus obtusiflorus (DC.) Conert [*Thinopyrum ponticum* (Podp.) Barkworth & D.R. Dewey; *Elytrigia obtusiflora* (DC.) Tzvelev; *Elymus elongatus* subsp. *ponticus* (Podp.) Melderis]

Non-native: N

Distribution: Pc Ppe Aw S R Cn

Remarks: See Pyke (2008b), Verloove & Sánchez Gullón (2012), Sánchez Gullón & Verloove (2015) and Gesti & Vilar (2020) for its distribution.

Elymus repens (L.) Gould subsp. ***repens*** [*Agropyrum repens* (L.) P. Beauv.; *Elytrigia repens* (L.) Nevski]

Distribution: Pa Pc Pe Ppc Ppe S O Cn Cc Cs

IUCN category: LC

Elymus campestris* × *E. repens

Distribution: Cc

Remarks: Reported from the Llobregat Delta by González & al. (2016).

Enneapogon cenchroides (Roem. & Schult.) C.E. Hubb.

Non-native: C

Distribution: Cn

Remarks: Reported from Montjuïc, Barcelona urban area (Gómez-Bellver & al., 2016).

Eragrostis barrelieri Daveau

Distribution: Pc Ppc Ppe Ae S O R Cn Cc Cs

IUCN category: LC

Eragrostis cilianensis (All.) Janch.

Distribution: Pc Ppc Ae Aw S O R Cn Cc Cs

IUCN category: LC

Eragrostis curvula (Schrud.) Nees

Non-native: N

Distribution: Pc Pe S R Cn Cc

Eragrostis minor Host

Distribution: Pc Pe Ppc Ae S O R Cn Cc Cs

IUCN category: LC

Eragrostis papposa (Roem. & Schult.) Steud.

Distribution: Cc Cs

IUCN category: DD

Eragrostis pectinacea (Michx.) Nees

Non-native: C

Distribution: Cn

Remarks: Casual in streams and cultivated fields in Gironès county (Girbal, 1984; Casasayas, 1989).

Eragrostis pilosa (L.) P. Beauv. subsp. ***pilosa***

Distribution: Pe Ae S O R Cn Cc Cs

IUCN category: LC

Eragrostis virescens J. Presl [*E. mexicana* subsp. *virescens* (J. Presl) S.D. Koch & Sánchez Vega]

Non-native: N

Distribution: R Cn Cc Cs

Remarks: Morphologically close to *E. mexicana* (Hornem.) Link. *Eragrostis neomexicana* L.H. Dewey [= *E. mexicana*] was reported from Cambrils (Cc) by Verloove (2005).

***Festuca* L.**

Remarks: A taxonomically complex genus with some groups of species particularly critical. The taxonomy of the species listed here follows Devesa & al. (2020) with additions and changes as proposed in the recent literature. *Festuca* L. was considered by Devesa & al. (2020: 202) in a broad sense but excluding several mainly annual plants traditionally attributed to independent genera. In our checklist *Festuca* is considered in a strict sense that excludes *Drymochloa* Holub, *Patzkea* G.H. Loos and *Schedonorus* P. Beauv. The distribution of the species listed here is in some cases poorly documented.

***Festuca airoides* Lam. subsp. *airoides* [*F. ovina* L. subsp. *airoides* (Lam.) O. Bolòs & Vigo]**

Distribution: Pa Pc Pe Ppe

IUCN category: LC

***Festuca airoides* subsp. *molinieri* (Litard) O. Bolòs, Vigo, Masales, & Ninot [*F. ovina* L. subsp. *molinieri* (Litard.) O. Bolòs & Vigo; *F. ovina* var. *molinieri* Litardière; *F. niphobia* (St.-Yves) Kerguélen]**

Distribution: Pa Pc ?Pe ?Ppe

IUCN category: DD

Remarks: Reported from central and eastern Pyrenees: Barcelona, Girona and Lleida provinces (Devesa & al., 2013).

***Festuca alpina* Suter**

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: Plants referred to *F. alpina* subsp. *riverae* Chas, Kerguélen & Plonka cannot be distinguished on morphological grounds from those distributed in the central and eastern Alps from Switzerland to the western Carpathians (Foggi & al., 2012).

***Festuca borderei* (Hack.) Hack. [*F. ovina* subsp. *borderei* Hack.]**

Distribution: Pa Pc Pe ?Ppe

IUCN category: LC

Remarks: Devesa & al. (2013) listed *F. borderei* for Barcelona, Girona and Lleida provinces. This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.

Festuca eskia DC.*Distribution:* Pa Pc Pe Ppc*IUCN category:* LC***Festuca gautieri*** (Hack.) K. Richt. [*F. gautieri* subsp. *scoparia* (A. Kern. & Hack.) Kerguélen]*Distribution:* Pa Pc Pe Ppc Ppe ?Ae ?Aw O Cn Cc Cs*IUCN category:* LC*Remarks:* Diploid ($2n=14$) plants were referred to subsp. *scoparia*, whereas typical *F. gautieri* includes tetraploid ($2n=28$) plants. However, no clear morphological discontinuities have been detected to support the recognition of discrete entities (Devesa & al., 2020).***Festuca glacialis*** Bureau*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Festuca glauca*** Vill. [*F. ovina* L. subsp. *glauca* (Vill.) O. Bolòs & Vigo]*Distribution:* Subendemic. Pe R Cn*IUCN category:* LC*Remarks:* Pyke (2013a) and Devesa & al. (2020) included *F. ruscinonensis* Rivas Mart. & Fuente [*F. ovina* L. f. *villiflora* Litard. (non *F. villiflora* Steud.)] in the synonymy of *F. glauca*.***Festuca heterophylla*** subsp. *braun-blanquetii* Fuente, Ortúñez & Ferrero Lom [*F. braun-blanquetii* (Fuente, Ortúñez & Ferrero Lom.) Rivas Mart., Fern. Gonz. & Loidi]*Distribution:* ?Pa ?Pc*IUCN category:* DD*Remarks:* Listed for Lleida province by Devesa & al. (2020).***Festuca heterophylla*** Lam. subsp. *heterophylla* [*F. rubra* subsp. *heterophylla* (Lam.) Hack.]*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cc ?Cs*IUCN category:* LC*Remarks:* Reports from Ports massif (Cs) due to Torres (1989) are erroneous (Bolòs & Vigo, 2001).***Festuca hystrix*** Boiss.*Distribution:* Cc Cs*IUCN category:* LC

Festuca inops De Not. subsp. ***inops*** [*F. gracilior* (Hack.) Markgr.-Dann.; *F. ovina* subsp. *gracilior* (Hackel) O. Bolòs & Vigo]

Distribution: Pc Ppc Ppe Ae Aw O Cc Cs

IUCN category: LC

Remarks: *Festuca michaelis* Cebolla & Rivas and *F. ovina* var. *tarraconensis* Litard. were reduced to synonymy of typical *F. inops* (Devesa & al., 2020).

Festuca inops subsp. ***occitanica*** (Litard.) Mart.-Sagarra & Devesa [*F. occitanica* (Litard.) Auquier & Kerguélen; *F. ovina* subsp. *occitanica* (Litard.) O. Bolòs & Vigo]

Distribution: Pc Ppe

IUCN category: DD

Remarks: Its distribution is poorly known; it was reported by Fuente & Ortúñez (1994b), Ninot & al. (2010) and Pyke (2013a).

Festuca lambinonii Kerguélen [*F. marginata* subsp. *alopecuroides* (Hack.) K. Richter; *F. ovina* subvar. *platyphylla* St.-Yves; *F. arvernensis* subsp. *costei* auct., non *F. costei* (St.-Yves) Markgr.-Dann; *F. longifolia* auct., non Thuill.; *F. ovina* subsp. *caesia* sensu O. Bolòs & Vigo]

Distribution: Pa Pc Pe ?Ppc Ppe O Cn

IUCN category: LC

Remarks: See López & al. (2017) for its distribution.

Festuca lemanii Bastard

Distribution: Pc Pe Ppc Ppe Ae O R Cn Cc

IUCN category: LC

Remarks: See Cebolla & Ponce (2003), Pyke (2013a), Sáez & al. (2015), Molero & al. (2016) and González & al. (2019) for its distribution. This species has been used in seed mixtures, so can occur in road verges and railway banks.

Festuca liviensis (Verg.) Markgr.-Dann. [*F. ovina* subsp. *liviensis* (Verg.) O. Bolòs, Masalles & Vigo]

Distribution: Subendemic. ?Pa Pc Pe Ppe

IUCN category: LC

Remarks: Endemic to central and eastern Pyrenees (Devesa & al., 2013). Reports for Ppc are probably based on confusion with *F. inops* subsp. *inops*.

Festuca marginata subsp. ***andresmolinae*** Fuente & Ortúñez

Distribution: Ppc Ppe Cn Cc Cs

IUCN category: LC

Remarks: See López & al. (2017) for its distribution.

Festuca marginata (Hack.) K. Richter subsp. ***marginata*** [*F. timbalii* (Hack.) Kerguélen; *F. hervieri* (St.-Yves) Patzke]

Distribution: Pe Ppe

IUCN category: LC

Remarks: Its distribution is poorly known; it was reported from Llivia by López & al. (2017). The latter authors reduced *F. marginata* subsp. *gallica* (Charrel) Ardenghi & Foggi to synonymy of typical *F. marginata*. Reports of *F. marginata* subsp. *marginata* from Montseny massif (Litardière in Bolòs & Vigo, 2001) are probably due to confusion with *F. lambinonii* or *F. marginata* subsp. *andresmolinae*.

Festuca nigrescens Lam. [*F. rubra* subsp. *commutata* (Gaudin) Markgr.-Dann.; *F. microphylla* (St.-Yves) Patzke]

Distribution: ?Pa Pc ?Pe Ppc ?Ppe O R Cn Cc ?Cs

IUCN category: LC

Remarks: *Festuca nigrescens* subsp. *microphylla* (St.-Yves) Markgr.-Dann. [*F. microphylla* (St.-Yves) Patzke] was reduced to synonymy of *F. nigrescens* (Devesa & al., 2020).

Festuca ochroleuca subsp. ***heteroidea*** (Verg.) Markgr.-Dann. [*F. heteroidea* (Verg.) Jauzein & J.M. Tison; *F. ovina* L. subsp. subsp. *ochroleuca* (Timb.-Lagr.) O. Bolòs & Vigo]

Distribution: Ppe Cn

IUCN category: DD

Remarks: Reported by Fuente & Ortúñez (1994b) and Pérez-Haase & al. (2013).

Festuca ochroleuca Timb.-Lagr. ***ochroleuca*** [*F. ovina* subsp. *ochroleuca* (Timb.-Lagr.) O. Bolòs & Vigo]

Distribution: ?Pa ?Pc

IUCN category: DD

Remarks: Devesa & al. (2020) listed this taxon for Lleida province.

Festuca pyrenaica Reut. [*F. rubra* subsp. *pyrenaica* (Reut.) Hack.]

Distribution: Pa Pc

IUCN category: LC

Festuca rivularis Boiss. [*F. rubra* subsp. *rivularis* (Boiss.) O. Bolòs, Masalles & Vigo]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Festuca rubra subsp. ***juncea*** (Hack.) K. Richt.

Distribution: Pa Pc Pe ?Ppe

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *F. rubra* by Devesa & al. (2013) is poorly known. Pyrenean reports of *F. nevadensis* (Hack.) K. Richt. (Litardière, 1945; Vigo, 1983) are referable to *F. rubra* subsp. *juncea* (Fuente García & Sánchez Mata, 1989).

Festuca rubra L. subsp. ***rubra****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw ?S O R Cn*IUCN category:* LC*Remarks:* *Festuca heteromalla* Pourr. was reduced to synonymy of typical *F. rubra* (Devesa & al., 2020).*Festuca stricta* Host subsp. ***trachyphylla*** (Hack.) Joch. Müll. [*F. brevipila* Tracey; *F. trachyphylla* (Hack.) Krajina, nom. illeg.]*Non-native:* C*Distribution:* Ae*Remarks:* Reported from waysides in Manresa (Pyke, 2003); this species was probably included in seed mixtures for revegetation purposes.***Festuca trichophylla*** subsp. ***asperifolia*** (St.-Yves) Al-Bermani [*F. rubra* subsp. *asperifolia* (St.-Yves) Markgr.-Dann.]*Distribution:* Pc*IUCN category:* LC***Festuca trichophylla*** (Gaudin) K. Richt. subsp. ***trichophylla*** [*F. rubra* subsp. *trichophylla* Gaudin; *F. rubra* subsp. *yvesiana* sensu O. Bolòs & Vigo]*Distribution:* ?Pc Pe Ppc Ppe Aw R Cn Cc Cs*IUCN category:* LC*Remarks:* According to Devesa & al. (2020) *F. paucispicula* Fuente & Sánchez Mata [*F. rubra* subsp. *font-queri* Litard.], *F. trichophylla* subsp. *meridionalis* Pyke & Molero and the decaploid *F. dertosensis* Pyke & L. Sáez should be included within the variability of *F. trichophylla* subsp. *trichophylla* without any taxonomic designation.***Festuca valesiaca*** Gaudin*Non-native:* N*Distribution:* Cc*Remarks:* See Pyke (2008b) for its distribution and relationship with *F. stricta* subsp. *trachyphylla*.***Festuca yvesii*** Sennen & Pau subsp. ***yvesii*** [*F. durissima* (Hack.) Kerguelén; *F. indigesta* subsp. *durissima* (Hack.) O. Bolòs, Vigo, Masalles & Ninot; *F. laevigata* auct., non Gaudin; *F. ovina* subsp. *curvula* sensu O. Bolòs & Vigo, non Gaudin; *F. ovina* var. *cagiriensis* sensu O. Bolòs & Vigo, non Timb.-Lagr.]*Distribution:* Subendemic. Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Gastridium phleoides*** (Nees & Meyen) C.E. Hubb.*Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably overlooked and more common than known (Pyke 2008a).

Gastridium ventricosum (Gouan) Schinz & Thell.

Distribution: Ae R Cn Cc Cs

IUCN category: LC

Gaudinia fragilis (L.) P. Beauv.

Distribution: Pe R Cn Cc

IUCN category: LC

Glyceria declinata Bréb. [*G. fluitans* subsp. *declinata* (Bréb.) O. Bolòs, Masalles & Vigo]

Distribution: Pc Pe O R

IUCN category: LC

Glyceria fluitans (L.) R. Br.

Distribution: Pa Pc Pe Ae R Cn

IUCN category: LC

Glyceria notata Chevall. [*G. plicata* (Fr.) Fr.; *G. fluitans* subsp. *plicata* (Fr.) St.-Lag.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Helictochloa bromoides (Gouan) Romero Zarco subsp. *bromoides* [*Avenula bromoides* (Gouan) H. Scholz subsp. *bromoides*]

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Reports of *H. bromoides* subsp. *pauneroi* (Romero Zarco) Romero Zarco require confirmation.

Helictochloa marginata (Lowe) Romero Zarco [*Avenula lodunensis* Kerguelen; *A. sulcata* (Boiss.) Dumort.]

Distribution: Pa Pc Ppe

IUCN category: LC

Helictochloa pratensis subsp. *amethystea* (Braun-Blanq.) Romero Zarco [*Avena pratensis* subsp. *amethystea* Braun-Blanq.; *Helictochloa pratensis* subsp. *requienii* (Mutel) H. Scholz; *Avenula pratensis* subsp. *requienii* (Mutel) Romero Zarco]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O ?Cn ?Cc

IUCN category: LC

Helictochloa pratensis subsp. *gonzaloi* (Sennen) Romero Zarco [*Avenula pratensis* subsp. *gonzaloi* (Sennen) Romero Zarco]

Distribution: ?Ppc Ae R Cn Cc Cs

IUCN category: LC

Helictochloa pratensis subsp. ***iberica*** (St.-Yves) Romero Zarco [*Avenula pratensis* subsp. *iberica* (St.-Yves) O. Bolòs & Vigo; *A. mirandana* (Sennen) Holub]

Distribution: Pc Pe Ppc Ppe Ae Aw ?S O R Cn Cc Cs

IUCN category: LC

Helictochloa pratensis (L.) Romero Zarco subsp. ***pratensis*** [*Avenula pratensis* (L.) Dumort. subsp. *pratensis*]

Distribution: Pa Pe Ppe O Cn

IUCN category: LC

Helictochloa versicolor (Vill.) Romero Zarco subsp. ***versicolor*** [*Avenula versicolor* (Vill.) M. Laínz subsp. *versicolor*]

Distribution: Pa Pc Pe ?Ppe

IUCN category: LC

Remarks: Its presence in Ppe requires confirmation.

Helictotrichon filifolium (Lag.) Henrard subsp. ***filifolium***

Distribution: Cs

IUCN category: DD

Helictotrichon sedenense subsp. ***gervaisii*** Romero Zarco [*H. sedenense* var. *gervaisii* (Romero Zarco) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Pa Pc

IUCN category: DD

Remarks: Its occurrence is only well documented from Port de Viella (Röser, 1989; Romero Zarco, 1996) and Aigüestortes area (BC 95124, det. C. Romero Zarco).

Helictotrichon sedenense (DC.) Holub subsp. ***sedenense***

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Heteropogon contortus (L.) Roem. & Schult.

Distribution: Pc Ppc Ppe O R Cn Cc Cs

IUCN category: LC

Holcus lanatus L. subsp. ***lanatus***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Holcus lanatus subsp. ***vaginatus*** (Pérez Lara) M. Seq. & Castrov.

Distribution: R

IUCN category: DD

Remarks: Sequeria (2020) listed this taxon for Girona province. This report is based on a specimen collected in Cap de Creus by J. Molero in 1978 (BCN 20080).

Holcus mollis L.

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc

IUCN category: LC

Hordelymus europaeus (L.) Harz.

Distribution: Pa Pc

IUCN category: LC

Remarks: Old reports from Alt Urgell (Ppc?) and Camprodon (Pe?) require confirmation (Bolòs & Vigo, 2001).

Hordeum geniculatum All. [*H. hystrix* Roth; *H. marinum* Huds. subsp. *gussoneanum* (Parl.) Thell.]

Distribution: Cn Cs

IUCN category: DD

Remarks: See Pyke (2019b) for its distribution.

Hordeum glaucum Steud. [*H. murinum* subsp. *glaucum* (Steud.) Tzvelev]

Distribution: S Cn Cs

IUCN category: LC

Remarks: Reported by León & al. (2014).

Hordeum marinum Huds.

Distribution: S R Cn Cc Cs

IUCN category: LC

Hordeum murinum subsp. ***leporinum*** (Link) Arcang. [*H. leporinum* Link]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Sometimes confused with *H. glaucum* (León & al., 2014).

Hordeum murinum L. subsp. ***murinum***

Distribution: Pa Pc Pe Ppe Ae Aw O ?Cn ?Cc ?Cs

IUCN category: LC

Remarks: Often confused with *H. murinum* subsp. *leporinum* (León & al., 2014).

Hordeum secalinum Schreb.*Distribution:* Pa R Cn*IUCN category:* LC***Hordeum vulgare*** L. subsp. *vulgare**Non-native:* C*Remarks:* See Blattner (2018) for taxonomy. Cultivated two-rowed and six-rowed barley varieties are sometimes found as escaped. Both varieties were sometimes treated at species or subspecies level [*H. vulgare* subsp. *distichon* L.; *H. vulgare* subsp. *distichon* (L.) Körn.; *H. hexastichon* L. *H. vulgare* subsp. *hexastichon* (L.) Celak.].***Hyparrhenia hirta*** (L.) Stapf*Distribution:* Ppe Ae O R Cn Cc Cs*IUCN category:* LC***Hyparrhenia sinaica*** (Delile) G. López [*H. hirta* subsp. *pubescens* (Andersson) Paunero]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Imperata cylindrica*** (L.) Raeusch.*Distribution:* Aw S R Cc Cs*IUCN category:* LC***Jarava plumosa*** (Spreng.) S.W.L. Jacobs & J. Everett [*Calamagrostis plumosa* Spreng.; *Stipa papposa* Nees]*Non-native:* N*Distribution:* Cn Cc*Remarks:* The species, which is believed to have been introduced with wool (Casasayas & Farràs, 1985), is naturalised in disturbed roadsides, ruderalised pastures and lawns. See also Vilar & al. (2018), Verloove & al. (2019) and Guardiola & Petit (2020).***Koeleria pyramidata*** (Lam.) P. Beauv. subsp. *pyramidata* [incl. *K. macrantha* (Ledeb.) Schult.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC*Remarks:* Records of *K. splendens* C. Presl, are referable to *K. pyramidata* (Quintanar & Castroviejo, 2013).***Koeleria pyramidata*** subsp. *schroeteriana* (Domin) Quintanar & Castrov. [*K. eriostachya* subsp. *schroeteriana* Domin; *K. eriostachya* var. *pyrenaica* Domin]*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Remarks:* Reported by Quintanar & Castroviejo (2013).

Koeleria spicata (L.) Barberá, Quintanar, Soreng, & P.M. Peterson subsp. ***ovatipaniculata*** (Vasey) Barberá, Quintanar, Soreng, & P.M. Peterson [*Trisetum spicatum* (L.) K. Richt. subsp. *ovatipaniculatum* Jonsell]

Distribution: Pc

IUCN category: DD

Remarks: Reported from Espot Valley and Montsent de Pallars (Guardiola & al., 2013). Its distribution in high mountain areas is probably more widespread than currently documented.

Koeleria vallesiana (Honck.) Gaudin subsp. ***vallesiana*** [*K. vallesiana* subsp. *mediterranea* Braun-Blanq.; *K. vallesiana* subsp. *humilis* Braun-Blanq.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lagurus ovatus L. subsp. ***ovatus***

Distribution: R Cn Cc Cs

IUCN category: LC

Lamarckia aurea (L.) Moench

Distribution: Ppe S R Cn Cc Cs

IUCN category: LC

Leersia oryzoides (L.) Sw.

Distribution: Ae R Cn Cc Cs

IUCN category: LC

Leptochloa crinita (Lag.) P.M. Peterson & N. Snow [*Trichloris crinita* (Lag.) Parodi]

Non-native: C

Distribution: Cc

Remarks: Reported from Viladecans by Álvarez & al. (2016).

Lolium multiflorum Lam. [*L. multiflorum* subsp. *italicum* Schinz & R. Keller]

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Lolium perenne L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lolium rigidum Gaudin [*L. parabolicae* Samp.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lolium temulentum L. [*L. temulentum* subsp. *arvense* (With.) Tzvelev]

Non-native: N

Distribution: Pa Pe Ppc Ppe Ae Aw S R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Lygeum spartum L.

Distribution: S Cn Cc Cs

IUCN category: LC

Macrochloa tenacissima (L.) Kunth [*Stipa tenacissima* L.]

Distribution: Cc ?Cs

IUCN category: NT

Melica amethystina Pourr. [*M. baubini* All.]

Distribution: R

IUCN category: DD

Remarks: Its presence has been confirmed for our area, based on a specimen (MA 10120) collected in Port Bou (P. Cantó, pers. comm., 10 Dec 2020).

Melica chilensis J. Presl

Non-native: N

Distribution: Cc

Remarks: Reported from the Tarragona port area (Verloove & al., 2019).

Melica ciliata L. subsp. *ciliata*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *M. ciliata* are not clearly defined at present.

Melica ciliata subsp. *magnolii* (Gren. & Godr.) K. Richt.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *M. ciliata* are not clearly defined at present.

Melica minuta subsp. *latifolia* (Coss.) Valdes & Mateos [*M. major* auct., non Sm.; *M. arrecta* auct., non Kunze]

Distribution: R Cn Cc Cs

IUCN category: LC

Melica minuta L. subsp. *minuta*

Distribution: Pe Ppc R Cn Cc Cs

IUCN category: LC

Melica nutans L.*Distribution:* Pa Pc Pe Ppc Ppe Ae*IUCN category:* LC***Melica uniflora*** Retz.*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC***Mibora minima*** (L.) Desv. subsp. *minima**Distribution:* R Cn*IUCN category:* LC***Micropyrum tenellum*** (L.) Link*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Milium effusum*** L. subsp. *effusum**Distribution:* Pa Pc Pe Ppc O Cn Cs*IUCN category:* LC*Remarks:* A report for Aw (Guixé & al., 2008) is in all probability erroneous.***Milium vernale*** M. Bieb. subsp. *montianum* (Parl.) K. Richt. [*M. montianum* Parl.]*Distribution:* Cc Cs*IUCN category:* NT***Molineriella minuta*** (L.) Rouy*Distribution:* Cn*IUCN category:* NT***Molinia caerulea*** (L.) Moench [*M. caerulea* subsp. *altissima* (Link) Domin; *M. arundinacea* auct., non Schrank]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Moorochloa eruciformis*** (Sm.) Veldkamp [*Brachiaria eruciformis* (Sm.) Griseb.; *Echinochloa eruciformis* (Sm.) Rchb.]*Distribution:* Ppc S O R Cn*IUCN category:* LC***Muhlenbergia schreberi*** J.F. Gmel.*Non-native:* N*Distribution:* Cn*Remarks:* Reported from Bordils (Gironès) where it is established since the early 20th century (Pyke, 2008) and Santa Coloma de Farners (Selva) (Gesti & Vilar, 2019).

Narduroides salzmannii (Boiss.) Rouy [*Catapodium salzmannii* (Boiss.) Boiss.]

Distribution: S Cc Cs

IUCN category: LC

Remarks: Probably under-recorded. Its populations might be strongly fluctuating. For its distribution see Batriu & Mercadé (2020).

Nardus stricta L.

Distribution: Pa Pc Pe Ppc Ppe ?O Cn

IUCN category: LC

Nassella neesiana (Trin. & Rupr.) Barkworth [*Stipa neesiana* Trin. & Rupr.]

Non-native: N

Distribution: O R Cn

Remarks: Reports of *N. mucronata* (Kunth) R.W. Pohl due to Font & al. (2001) are due to confusion with *N. neesiana* (Verloove, 2005).

Nassella tenuissima (Trin.) Barkworth

Non-native: C

Distribution: Cn Cc

Remarks: First report from Viladecans, Baix Llobregat (Álvarez & al., 2016).

Nassella trichotoma (Nees) Arechav. [*Stipa trichotoma* Nees]

Non-native: N

Distribution: Cn

Remarks: This species, which is regarded as an introduction from wool, is naturalised in waste places, roadsides and more or less ruderalised pastures (Verloove, 2005).

Neoschischkinia nebulosa (Boiss. & Reut.) Tzvelev [*Agrostis nebulosa* Boiss. & Reut.]

Distribution: Cs

IUCN category: DD

Remarks: Probably adventive; reported from a single location in Ports massif (Arrufat & al., 2008; Sáez & al., 2010).

Oloptum miliaceum (L.) Röser & Hamasha [*Oryzopsis miliacea* (L.) Asch. & Schweinf.;

Piptatherum miliaceum (L.) Coss.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Oloptum thomasi (Duby) Banfi & Galasso [*Oryzopsis miliacea* subsp. *thomasi* (Duby)

K. Richt.; *Piptatherum miliaceum* subsp. *thomasi* (Duby) Freitag]

Distribution: R Cn Cc Cs

IUCN category: LC

Oplismenus undulatifolius (Ard.) Roem. & Schult.*Non-native:* N*Distribution:* O

Remarks: A re-evaluation of the available data of this species (whose native status was largely disputed) allows to conclude that it is an allochthonous element of the flora in the studied area (Aymerich & Sáez, 2021; Sáez & Crespo, 2021), as was already established by Scholz (1981).

Oreochloa elegans Sennen [*O. blanka* Deyl; *O. disticha* subsp. *blanka* (Deyl) P. Küpfer]*Distribution:* Pa Pc Pe*IUCN category:* LC***Oryza sativa*** L*Non-native:* C*Distribution:* Cs

Remarks: Cultivated and sometimes sporadic in the Ebre Delta (Curcó, 2007).

Panicum capillare L.*Non-native:* N*Distribution:* Pc Ppc Ppe Ae S O Cn Cc Cs***Panicum capillare*** subsp. *hillmanii* (Chase) Freckmann & Lelong*Non-native:* C*Distribution:* Cc

Remarks: Reported from Cubelles, Garraf (Verloove & al., 2019).

Panicum dichotomiflorum Michx.*Non-native:* N*Distribution:* S O R Cn Cc Cs***Panicum miliaceum*** L. subsp. *miliaceum**Non-native:* N*Distribution:* Pa Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Panicum philadelphicum*** Trin. subsp. *gattingeri* (Nash) Freckmann & Lelong [*P. gattingeri* (Nash) Nash]*Non-native:* C*Distribution:* S

Remarks: Reported from Segre river in Balaguer (Verloove & Sánchez Gullón, 2008).

Panicum repens L.*Distribution:* Cn Cc Cs*IUCN category:* LC

Parapholis cylindrica (Willd.) Romero Zarco [*Hainardia cylindrica* (Willd.) Greuter]

Distribution: S R Cn Cc Cs

IUCN category: LC

Parapholis filiformis (Roth) C.E. Hubb. [*Lepturus filiformis* (Roth) Trin.; *Pholiurus incurvus* subsp. *filiformis* (Roth) A. Camus]

Distribution: S R Cn Cc Cs

IUCN category: LC

Parapholis incurva (L.) C.E. Hubb. subsp. ***incurva*** [*Lepturus incurvus* (L.) Druce; *Pholiurus incurvus* (L.) Schinz & Thell.]

Distribution: Ppc Ppe Aw S R Cn Cc Cs

IUCN category: LC

Paspalum dilatatum Poir.

Non-native: I

Distribution: Ae Aw S O R Cn Cc Cs

Paspalum distichum L. [*P. paspalodes* (Michx.) Scribn.]

Non-native: I

Distribution: Pe Ae Aw S O R Cn Cc Cs

Paspalum notatum Flüggé

Non-native: N

Distribution: Pc O R Cn Cc Cs

Remarks: Cultivated and locally naturalised in waysides; represented in the studied area by var. *saurae* Parodi.

Paspalum vaginatum Sw.

Non-native: I

Distribution: R Cn Cc Cs

Patzkea paniculata (L.) G.H. Loos subsp. ***paniculata*** [*Festuca paniculata* (L.) Schinz & Thell. subsp. *paniculata*]

Distribution: Pa Pc Pe

IUCN category: LC

Patzkea paniculata subsp. ***spadicea*** (L.) G.H. Loos [*Festuca paniculata* subsp. *spadicea* (L.) Litard.; *F. paniculata* subsp. *consobrina* (Timb.-Lagr.) Markgr.-Dann.]

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Phalaris aquatica L.

Distribution: Ppe R Cn Cc Cs

IUCN category: LC

Phalaris arundinacea L.*Distribution:* Pc Pe Ppc Ppe S O R Cn Cc Cs*IUCN category:* LC***Phalaris brachystachys*** Link [*P. canariensis* subsp. *brachystachys* (Link) Posp.]*Distribution:* ?S O R Cn Cc Cs*IUCN category:* LC***Phalaris canariensis*** L.*Non-native:* N*Distribution:* Pe Ppe Ae Aw S O R Cn Cc Cs***Phalaris coerulea*** Desf.*Distribution:* Cn*IUCN category:* DD*Remarks:* Probably only sporadic in Terrassa (Vallès), where it was known on the basis of an old reference (see Bolòs, 1950).***Phalaris minor*** Retz.*Distribution:* Aw S O R Cn Cc Cs*IUCN category:* LC***Phalaris paradoxa*** L.*Distribution:* R Cn Cc Cs*IUCN category:* LC***Phalaris stenoptera*** Hack.*Non-native:* N*Distribution:* Cn Cc*Remarks:* See Pyke (2008a) for its distribution and relationship with *P. aquatica*.***Pbleum alpinum*** L. subsp. *alpinum* [*P. alpinum* subsp. *commutatum* (Gaudin) K. Richt.]*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Remarks:* Reports of *P. rhaeticum* (Humphries) Rauschert [*P. alpinum* subsp. *rhaeticum* Humphries] are based on confusion with *P. alpinum*.***Pbleum arenarium*** L.*Distribution:* R Cn Cc*IUCN category:* VU***Pbleum paniculatum*** Huds. subsp. *paniculatum**Distribution:* Ppc Ae Aw S O Cn Cc Cs*IUCN category:* LC

Phleum phleoides (L.) H. Karst.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Phleum pratense*** L. [*P. nodosum* L.; *P. bertolonii* DC.; *P. pratense* subsp. *serotinum* (Jord.) Berher]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Phragmites australis*** subsp. ***altissimus*** (Benth.) W.D. Clayton [*P. australis* subsp. *chrysanthus* (Mabille) Kerguélen]*Distribution:* S R Cc Cs*IUCN category:* LC***Phragmites australis*** (Cav.) Steud. subsp. ***australis****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Phyllostachys aurea*** Rivière & C. Rivière*Non-native:* N*Distribution:* ?Ppe Ae Aw O Cn ?Cc*Remarks:* Its presence is probably due to persistence in abandoned gardens through rhizome propagation. Due to the difficulty of identification of *Phyllostachys* species based on morphological characters other species of the genus may have gone overlooked.***Phyllostachys bambusoides*** Siebold & Zucc.*Non-native:* N*Distribution:* Cn*Remarks:* Reported from Ter river, close to Girona (Lifé "Recuperació d'hàbitats riparis del riu Ter", 2010).***Phyllostachys flexuosa*** Rivière & C. Rivière*Non-native:* N*Distribution:* ?Ppe Cc Cs*Remarks:* Persistent in abandoned gardens through rhizome propagation. It is sometimes cultivated and known to be locally naturalised (Royo, 2006).***Piptatherum coerulescens*** (Desf.) P. Beauv. [*Oryzopsis coerulescens* (Desf.) Hack.]*Distribution:* Ppc Ppe Aw O R Cn Cc Cs*IUCN category:* LC

Pleioblastus simonii (Carrière) Nakai [*Arundinaria simonii* (Carrière) Rivière & C. Rivière]

Non-native: N

Distribution: Cn

Remarks: Found in Guillerics massif (J. Gesti & L. Vilar, unpubl. data).

Poa alpina L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: Small plants with short, stiff leaves with non-thickened, or up to 0.05 mm thick, margins and very contracted panicles were designated as *P. alpina* var. *brevifolia* (Gaudin) Godr. [*P. alpina* subsp. *brevifolia* Gaudin] (Ortega-Olivencia & Devesa, 2018). *Poa alpina* var. *molinerii* (Balb.) Endl. [*P. molinerii* Balb.] was reported from Clot del Munyidor (Alta Ribagorça, Pc) (Ortega-Olivencia & Devesa, 2018). This variety comprises plants having leaves with whitish, cartilaginous, thickened (0.1-0.15 mm) margins that, together with the middle underside vein, form a clear, visible contrast to the green leaf blade, the latter mostly flat or conduplicate and rigid.

Poa annua L. subsp. *annua*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Poa bulbosa L. subsp. *bulbosa*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Poa cenisia All. [*P. fontqueri* Braun-Blanq.]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Poa chaixii Vill.

Distribution: Pa Pc Pe

IUCN category: LC

Poa compressa L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Poa flaccidula Boiss. & Reut.

Distribution: ?Pc Ppc Ppe Cc Cs

IUCN category: LC

Poa glauca Vahl subsp. ***glauca*** [*P. nemoralis* subsp. *glauca* (Vahl) Gaudin]

Distribution: Pa Pc Pe

IUCN category: LC

Poa infirma Kunth [*P. annua* subsp. *exilis* (Freyn) Murb.]

Distribution: S R Cn Cc Cs

IUCN category: LC

Poa laxa Haenke subsp. ***laxa***

Distribution: Pa Pc Pe

IUCN category: LC

Poa maroccana Nannf.

Distribution: Cn

IUCN category: DD

Remarks: It is an autotetraploid originating from *P. infirma*. Brullo & al. (2020) reported *P. maroccana* from L'Hospitalet de Llobregat.

Poa minor Gaudin subsp. ***minor***

Distribution: Pa Pc Pe

IUCN category: DD

Remarks: Its distribution is poorly known (see Sáez & al., 2010). Ortega-Olivencia & Devesa (2018) reported this species from Coll de Finestrelles, Puigmal massif (Pe).

Poa nemoralis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Poa pratensis L. subsp. ***pratensis***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Plants with narrow basal and shoot leaves (0.5-1.3 mm wide), linear or setaceous and convolute were designated as *P. pratensis* var. *angustifolia* (L.) Sm. [*Poa angustifolia* L.; *P. pratensis* subsp. *angustifolia* (L.) Dumort.] (Ortega-Olivencia & Devesa, 2018). *Poa pratensis* var. *minor* Ehrh. [*P. humilis* Hoffm.; *P. pratensis* L. subsp. *irrigata* (Lindm.) H. Lindb.; *P. subcaerulea* Sm.] was reported as naturalised in Barcelona and its surroundings by Pyke (2003, sub *P. subcaerulea*). Ortega-Olivencia & Devesa (2018) recognised this taxon at the varietal level.

Poa supina Schrad. [*P. annua* subsp. *varia* Gaudin]

Distribution: Pa Pc Pe Ppc Ppe ?O

IUCN category: LC

Remarks: Its presence in O requires confirmation.

Poa trivialis L. subsp. *trivialis**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* *Poa trivialis* subsp. *feratiana* (Boiss. & Reut.) A.M. Hern. [*Poa feratiana* Boiss. & Reut.] and *P. trivialis* subsp. *sylvicola* (Guss.) H. Lindb. fil. [*P. sylvicola* Guss.] were reduced to synonymy of *P. trivialis* by Ortega-Olivencia & Devesa (2018).***Poa bulbosa*** subsp. *bulbosa* × *P. compressa**Distribution:* Cc*Remarks:* Reported by Molero & al. (2016).***Polypogon maritimus*** Willd. subsp. *maritimus**Distribution:* S R Cc Cs*IUCN category:* LC***Polypogon maritimus*** subsp. *subspathaceus* (Req.) K. Richt. [*P. subspathaceus* Req.]*Distribution:* R*IUCN category:* DD*Remarks:* The occurrence of this species is documented from Llers area (Alt Empordà) and Cap de Creus Peninsula (Malagarriga, 1977; Franquesa, 1995).***Polypogon monspeliensis*** (L.) Desf.*Distribution:* Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Polypogon viridis*** (Gouan) Breistr.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Pseudosasa japonica*** (Steud.) Nakai [*Arundinaria japonica* Steud.]*Non-native:* C*Distribution:* Ppe Aw O Cn*Remarks:* Cultivated for ornament; sometimes escaped.***Psilurus incurvus*** (Gouan) Schinz & Thell.*Distribution:* Pc Ppc Ppe Aw S R Cn Cc Cs*IUCN category:* LC***Puccinellia distans*** (Jacq.) Parl. subsp. *distans**Non-native:* C*Distribution:* S Cn Cc*Remarks:* Reports from Cs are probably due to confusion with *P. fasciculata* (Curcó, 2007).

Puccinellia fasciculata (Torr.) E.P. Bicknell

Distribution: Ppc Ppe Aw S R Cn Cc Cs

IUCN category: LC

Puccinellia festuciformis (Host) Parl. subsp. *festuciformis*

Distribution: R

IUCN category: LC

Puccinellia festuciformis subsp. *lagascana* Julià & J.M. Monts.

Distribution: S R Cn

IUCN category: LC

Puccinellia hispanica Julià & J.M. Monts.

Distribution: Ppc S

IUCN category: LC

Rostraria cristata (L.) Tzvelev [*Lophochloa cristata* (L.) Hyl.; *Koeleria phleoides* (Vill.) Pers.]

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Rostraria litorea (All.) Holub [*Lophochloa pubescens* (Lam.) H. Scholz; *Koeleria pubescens* (Lam.) P. Beauv.]

Distribution: R Cn Cc

IUCN category: LC

Rostraria pumila (Desf.) Tzvelev [*Lophochloa pumila* (Desf.) Bor; *Koeleria pumila* (Desf.) Domin]

Non-native: C

Distribution: Cs

Remarks: Its presence has been only confirmed in the Ebre Delta (Curcó & Guerao, 2019).

×***Schedololium holmbergii*** (Dorfl.) Soreng & Terrell [*Festuca arundinacea* × *Lolium perenne*; ×*Festulolium holmbergii* (Dörfl.) P. Fourn.]

Distribution: Pe

×***Schedololium loliaceum*** (Huds.) Holub [*Schedonorus pratensis* × *Lolium perenne*; *Festuca* × *loliacea* Huds.; ×*Festulolium loliaceum* (Huds.) P. Fourn.; *Festulolium* × *ascendens* Asch. & Graebn.]

Distribution: Pc Pe Ppe

Schedonorus arundinaceus (Schreb.) Dumort. subsp. ***arundinaceus*** [*Festuca arundinacea* Schreb.; *F. elatior* L. subsp. *arundinacea* (Schreb.) Hackel]

Distribution: Pa Pc Pe Ppc Ppe Ae ?Aw O R Cn Cc Cs

IUCN category: LC

Schedonorus giganteus (L.) Holub [*Festuca gigantea* (L.) Vill.]

Distribution: Pa Pe Ppe O

IUCN category: LC

Schedonorus interruptus (Desf.) Tzvelev [*Festuca interrupta* Desf., *F. arundinacea* subsp. *interrupta* (Desf.) Tzvelev; *F. arundinacea* subsp. *fenas* (Lag.) Arcang.]

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its distribution is poorly known; listed for Barcelona and Lleida provinces by Devesa & al. (2013).

Schedonorus pratensis (Huds.) P. Beauv. subsp. ***pratensis*** [*Festuca pratensis* Huds. subsp. *pratensis*; *F. elatior* subsp. *pratensis* (Huds.) Hack.]

Distribution: Pa Pc Pe Ppc Ppe O [Cn]

IUCN category: LC

Remarks: Introduced in Cn (Pérez-Haase & al., 2013).

Schismus barbatus (L.) Thell.

Distribution: S R Cn Cc Cs

IUCN category: LC

Sclerochloa dura (L.) P. Beauv.

Distribution: Pe Ppe S

IUCN category: LC

Secale cereale L.

Non-native: N

Distribution: Pc Pe Ppc Ppe Aw S O Cn Cc Cs

Secale strictum (C. Presl) C. Presl [*S. montanum* Guss.]

Non-native: N

Distribution: Pc

Remarks: Found in Rubió (Pallars Sobirà county) by X. Font in 2017 (pers. comm.).

Sesleria caerulea (L.) Ard. [*S. albicans* Schult.]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc

IUCN category: LC

Setaria adhaerens (Forssk.) Chiov. [*S. verticillata* subsp. *aparine* (Steud.) T. Durand & Schinz]

Distribution: S Cn Cc Cs

IUCN category: LC

Remarks: Crespo (2021b) listed for the studied area var. *adhaerens* and var. *fontqueri* Calduch [*S. verticillata* var. *fontqueri* (Calduch) O. Bolòs & Vigo; *S. adhaerens* var. *antrorsa* H. Scholz], the latter for Tarragona province (indicated by a question mark).

Setaria faberi R.A.W. Herrm.

Non-native: C

Distribution: S Cn

Setaria italica (L.) P. Beauv.

Non-native: N

Distribution: Pc Pe Ppe Ae Aw O R Cn Cc Cs

Setaria parviflora (Poir.) Kerguélen [*S. geniculata* P. Beauv.]

Non-native: N

Distribution: Aw S O R Cn Cc Cs

Setaria pumila (Poir.) Roem. & Schult.

Distribution: Pa Pc ?Pe Ppc Ppe Ae S O R Cn Cc Cs

IUCN category: LC

Setaria verticillata (L.) P. Beauv.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Represented by var. *verticillata* and var. *ambigua* (Guss.) K. Richt. [*S. verticilliformis* Dumort.] (see Crespo, 2021b).

Setaria viridis (L.) P. Beauv.

Non-native: C

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Sorghum bicolor (L.) Moench

Non-native: C

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

Sorghum halepense (L.) Pers.

Non-native: I

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Spartina patens (Aiton) Muhl. [*S. versicolor* Fabre; *S. juncea* (Michx.) Willd.; *Sporobolus pumilus* (Roth) P.M. Peterson & Saarela]

Non-native: N

Distribution: R C Cc Cs

Remarks: Fernández Prieto & al. (2011) concluded that the European plant identified as *Spartina versicolor* Fabre [*Sporobolus versicolor* P.M. Peterson & Saarela] is identical to North American *Spartina patens* (Aiton) Muhl. [*Sporobolus pumilus* (Roth) P.M. Peterson & Saarela] and therefore it should be treated as the same species. Baumel & al. (2016) shared the same point of view: European and African populations of *Spartina versicolor* are in fact North American *S. patens* introduced before or at the beginning of the 19th century.

Sphenopus divaricatus (Gouan) Rchb. subsp. *divaricatus*

Distribution: Ppc S R Cc Cs

IUCN category: LC

Sporobolus aculeatus (L.) P.M. Peterson [*Crypsis aculeata* (L.) Aiton]

Distribution: R Cc

IUCN category: LC

Sporobolus alopecuroides (Piller & Mitterp.) P.M. Peterson [*Crypsis alopecuroides* (Piller & Mitterp.) Schrad.]

Distribution: Pa

IUCN category: DD

Remarks: Llenas (1912) reported *Crypsis alopecuroides* from Pla de Beret, Aran valley, but Bolòs & Vigo (2001) excluded it from their flora. Heras & Muñoz Rodríguez (2021) listed this species for Lleida province based on a collection made by M. Llenas in Pla de Beret (July 1909, BC 66739).

Sporobolus cryptandrus (Torr.) A. Gray

Non-native: C

Distribution: Cn

Remarks: Reported by F. Verloove in Nobis & al. (2015) based on a collection made by J. Font.

Sporobolus indicus (L.) R. Br. [*S. fertilis* sec. Kerguélen]

Non-native: I

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Sporobolus pungens (Schreb.) Kunth

Distribution: S R Cn Cc Cs

IUCN category: LC

Sporobolus schoenoides (L.) P.M. Peterson [*Crypsis schoenoides* (L.) Lam.]

Distribution: Ppc R

IUCN category: LC

Sporobolus vaginiflorus (A. Gray) A.W. Wood

Non-native: C

Distribution: Cn

Remarks: Reported from Vilanova de Sau, Osona (Pérez-Haase & al., 2013).

Stenotaphrum secundatum (Walter) Kuntze

Non-native: N

Distribution: R Cn Cc Cs

Stipa barbata Desf.

Distribution: Aw S

IUCN category: LC

Stipa capillata L.

Distribution: Pe Ppe Ae Aw S R Cs

IUCN category: LC

Stipa iberica Martinovský [*S. pennata* subsp. *iberica* (Martinovský) O. Bolòs, Masalles & Vigo; *S. pennata* auct., non L.; *S. eriocalis* auct., non Borbás]

Distribution: Pa Pc Ppc Ppe Pe Ae Aw S O Cc Cs

IUCN category: LC

Stipa lagascae Roem. & Schult.

Distribution: Aw S

IUCN category: LC

Stipa offneri Breistr.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Stipellula capensis (Thunb.) Röser & Hamasha [*Stipa capensis* Thunb.; *S. tortilis* Desf.]

Distribution: R Cn Cc Cs

IUCN category: LC

Stipellula parviflora (Desf.) Röser & Hamasha [*Stipa parviflora* Desf.]

Distribution: Pc Pe Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Taeniatherum caput-medusae (L.) Nevski*Distribution:* Cc*IUCN category:* DD*Remarks:* Reported from a single location in Albarca, Priorat (Molero, 1982). This species is known from several locations in Baix Cinca, close to the boundary of S.***Tragus racemosus*** (L.) All.*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Tripidium ravennae*** (L.) H. Scholz [*Saccharum ravennae* (L.) Murray]*Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Trisetaria loeflingiana*** (L.) Paunero [*T. cavanillesii* (Trin.) Maire]*Distribution:* Ae Aw S Cs*IUCN category:* LC***Trisetaria panicea*** (Lam.) Paunero [*Trisetum paniceum* (Lam.) Pers.]*Distribution:* R Cn Cc Cs*IUCN category:* LC***Trisetum alpestre*** (Host) P. Beauv. [*T. baregense* Laffitte & Miégev.; *T. flavescens* subsp. *baregense* (Laffitte & Miégev.) O. Bolòs, Masalles & Vigo]*Distribution:* Pa*IUCN category:* LC*Remarks:* See Barberá & al. (2018) for taxonomy.***Trisetum flavescens*** (L.) P. Beauv. subsp. *flavescens**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Triticum aestivum*** L. subsp. *aestivum**Non-native:* C*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Triticum turgidum*** subsp. *durum* (Desf.) Husn.*Non-native:* C*Distribution:* Ppe Ae R Cn***Triticum turgidum*** L. subsp. *turgidum**Non-native:* C*Distribution:* Pe Cc

Urochloa maxima (Jacq.) R.D. Webster [*Panicum maximum* Jacq.; *Megathyrsus maximus* (Jacq.) B.K. Simon & S.W.L. Jacobs]

Non-native: N

Distribution: Cc

Remarks: Reported from Cambrils and Sant Feliu de Llobregat by Verloove (2005) and Pyke (2013b) respectively.

Urochloa platyphylla (C. Wright) R.D. Webster [*Panicum platyphyllum* C. Wright; *Brachiaria platyphylla* (C. Wright) Nash]

Non-native: C

Distribution: S

Remarks: A single collection site for this species is known: Benavent de Segrià (Recasens & Conesa, 1995).

Ventenata dubia (Leers) Coss.

Distribution: Pe

IUCN category: DD

Vulpia ciliata Dumort. subsp. *ciliata*

Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Vulpia geniculata (L.) Link

Distribution: Cn Cc

IUCN category: LC

Remarks: First concrete report for Falset (Molero & al., 2006); later found elsewhere.

Vulpia membranacea (L.) Dumort. *membranacea*

Distribution: R Cc Cs

IUCN category: LC

Vulpia membranacea subsp. *fasciculata* (Forssk.) O. Bolòs, Masalles & Vigo [*V. fasciculata* (Forssk.) Fritsch]

Distribution: R Cn Cc Cs

IUCN category: LC

Vulpia myuros (L.) C.C. Gmel. subsp. *myuros* [*V. megalura* (Nutt.) Rydb.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Vulpia myuros subsp. *sciuroides* (Roth) Rouy [incl. *V. bromoides* (L.) Gray; *V. muralis* (Kunth) Nees]

Distribution: Pe Ae O R Cn Cc Cs

IUCN category: LC

Remarks: See Muñoz Rodríguez & Devesa (2020) for taxonomy.

Vulpia unilateralis (L.) Stace subsp. *unilateralis**Distribution:* Pa Pc Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Vulpia unilateralis*** subsp. *montana* (Boiss. & Reut.) Cabezudo, Devesa, R. Tormo, F. Vázquez & J.M. Nieto*Distribution:* ?Pe ?O ?R ?Cn*IUCN category:* DD*Remarks:* Listed for Girona province by Muñoz Rodríguez & Devesa (2020).***Wangenheimia lima*** (L.) Trin.*Distribution:* S*IUCN category:* LC***Zea mays*** L. subsp. *mays**Non-native:* C*Distribution:* Pe Ppc Ppe Aw S O R Cn Cc Cs***Zea mays*** subsp. *mexicana* (Schrad.) Iltis*Non-native:* N*Distribution:* Aw S**PROBABLE SISTER OF EUDICOTS****CERATOPHYLLACEAE*****Ceratophyllum demersum*** L.*Distribution:* S Cn +Cc Cs*IUCN category:* LC*Remarks:* Also reported from a location in Alta Cerdanya (France) very close (<0.5 km) to the boundary of Pe.***Ceratophyllum submersum*** L.*Distribution:* R*IUCN category:* CR*Remarks:* An old report for Estany de Puigcerdà (Pe) (Vayreda, 1882) is probably due to confusion with *C. demersum*.

EUDICOTS

PAPAVERACEAE

Chelidonium majus L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Corydalis solida (L.) Clairv. subsp. *solida*

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Eschscholzia californica Cham.

Non-native: N

Distribution: Pc Aw O R Cn Cc Cs

Fumaria barnolae Sennen & Pau subsp. *barnolae* [*F. gaillardotii* subsp. *major* (Maire) O. Bolòs & Vigo]

Distribution: Ppe R Cn Cc Cs

IUCN category: LC

Fumaria bastardii Boreau

Distribution: S R Cn Cc Cs

IUCN category: LC

Fumaria bicolor Nicotra

Distribution: R

IUCN category: EN

Remarks: Reported from Cap de Creus (Noble & al., 2018).

Fumaria capreolata L.

Distribution: Ppc Ae Aw S O R Cn Cc Cs

IUCN category: LC

Fumaria densiflora DC.

Distribution: Ppc Ppe Aw S R Cn Cc Cs

IUCN category: LC

Fumaria faurei (Pugsley) Lidén [*F. mirabilis* Pugsley subsp. *faurei* (Pugsley) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: S

IUCN category: DD

Fumaria gaillardotii Boiss.*Distribution*: Aw O R Cn Cc Cs*IUCN category*: LC***Fumaria muralis*** W.D.J. Koch subsp. *muralis* [*F. muralis* subsp. *boraei* (Jord.) Pugsley]*Distribution*: R Cn Cs*IUCN category*: LC***Fumaria officinalis*** L. subsp. *officinalis**Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Remarks*: Both subspecies of *F. officinalis* are sometimes difficult to separate, the diagnostic characters are somewhat variable and intermediates are not rare.***Fumaria officinalis*** subsp. *wirtgenii* (Koch) Arcang.*Distribution*: Pc Pe Ppc R Cn Cc Cs*IUCN category*: LC***Fumaria parviflora*** Lam.*Distribution*: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category*: LC***Fumaria petteri*** Rchb. subsp. *calcarata* (Cadevall) Lidén & A. Soler*Distribution*: ?R Cn Cc Cs*IUCN category*: DD*Remarks*: This species was also listed for Girona province without precise location (Lidén, 1986b).***Fumaria reuteri*** Boiss.*Distribution*: Cn Cc Cs*IUCN category*: LC***Fumaria vaillantii*** Loisel. subsp. *vaillantii**Distribution*: Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category*: LC***Glaucium corniculatum*** (L.) J.H. Rudolph*Distribution*: Pc Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category*: LC*Remarks*: Probably only casual in northern and montane areas.***Glaucium flavum*** Crantz*Distribution*: S R Cn Cc Cs*IUCN category*: LC

Hypocoum imberbe Sm. [*H. procumbens* subsp. *grandiflorum* (Benth.) Pau]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Hypocoum pendulum L.

Distribution: Aw S Cs

IUCN category: LC

Papaver alpinum L. [*P. aurantiacum* Loisel., *P. rhaeticum* Leresche; *P. lapeyrousianum* Greuter & Burdet; *P. alpinum* subsp. *suaveolens* (P. Fourn.) O. Bolòs & Vigo]

Distribution: Pc Pe

IUCN category: DD

Remarks: Its generic assignment is unclear (Kadereit & al., 2016). Schönswetter & al. (2009) did not find arguments to recognise more than one species within *P. alpinum* in a broad sense. Accordingly, we include within *P. alpinum* plants with narrow petals (usually referred to *P. lapeyrousianum*) and those with wide petals (usually called *P. aurantiacum* or *P. rhaeticum*).

Papaver cambricum L. [*Meconopsis cambrica* (L.) Vig.]

Distribution: Pa Pc Ppe

IUCN category: LC

Papaver dubium L. subsp. *dubium*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Papaver dubium subsp. *lecoqii* (Lamotte) Syme

Distribution: Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Papaver pinnatifidum Moris

Distribution: Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Papaver rhoeas L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Papaver somniferum subsp. ***setigerum*** (DC.) Arcang.

Distribution: [Pe] Ppc Ppe Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Papaver somniferum L. subsp. ***somniferum***

Non-native: N

Distribution: Ppc Ae S O R Cn Cc Cs

Remarks: Usually a casual alien, but a naturalised population, large and long-term persistent, is known from S (Pla d'Urgell).

Platycapnos spicata (L.) Bernh.

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Platycapnos tenuiloba Pomel subsp. ***tenuiloba*** [*P. spicata* subsp. *grandiflora* (Rouy) Losa & Rivas Goday]

Distribution: S Cc Cs

IUCN category: LC

Roemeria argemone (L.) C. Morales, R. Mend. & Romero García [*Papaver argemone* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Roemeria hispida (Lam.) Stace [*Papaver hispidum* Lam.; *P. hybridum* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Roemeria hybrida (L.) DC. subsp. ***hybrida***

Distribution: Pc Pe Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Sarcocapnos enneaphylla (L.) DC.

Distribution: Pc Ppc Ppe Ae R Cn Cc Cs

IUCN category: LC

BERBERIDACEAE

Berberis garciae Pau [*B. vulgaris* L. subsp. *seroi* O. Bolòs & Vigo]

Distribution: [Pc] [Ppe] [Ae] [+Aw] Cc Cs

IUCN category: VU

Remarks: Apparently naturalised in northern Catalonia.

Berberis julianae C.K. Schneid.

Non-native: N

Distribution: Ppe Cn

Remarks: Known from Ripoll and Sant Joan de les Abadesses, Ripollès (Aymerich, 2020a) and Sant Quirze Safaja, Moianès (Aymerich & Sáez, 2021c).

Berberis vulgaris L.

Non-native: C

Distribution: Pe Ae Cn

Remarks: An extremely rare species known from Cerdanya plain (Aymerich, 2015a) Montseny massif (Gómez-Bellver & al., 2016) and Seva, Plana de Vic (D. Vilasís, pers. comm.). Long-term persistent, but no true populations are known.

Berberis × *ottawensis* C.K. Schneid. [*B. thunbergii* × *B. vulgaris*]

Non-native: C

Distribution: Pc Pe

Remarks: Known from few locations in Cerdanya and Ripollès (Aymerich, 2019, 2020a). Probably only a relic of cultivation in Pc (Vall Ferrera), where it was used in roadsides restoration (P. Aymerich, pers. obs.).

Mahonia aquifolium (Pursh) Nutt. [*Berberis aquifolium* Pursh]

Non-native: C

Distribution: Ppe

Remarks: Plants morphologically referable to this species are known only from Ripoll, Ripollès (Aymerich, 2020a).

Mahonia japonica (Thunb.) DC. [*Berberis japonica* (Thunb.) R. Br.]

Non-native: C

Remarks: Listed as casual in Andreu & al. (2012) without precise location. We do not know the background of this report.

Mahonia × *decumbens* Stace [*M. aquifolium* × *M. repens* (Lindl.) G. Don]

Non-native: N

Distribution: Pe Ppe Ae Aw O Cn Cc

Remarks: Most reports of *M. aquifolium* are referable to *M.* × *decumbens* (Aymerich, 2019).

Nandina domestica Thumb.

Non-native: C

Distribution: Cn

Remarks: This species reproduces itself spontaneously by seeds in urban gardens in Barcelona (L. Gustamante, pers. comm.).

RANUNCULACEAE

Aconitum anthora L.

Distribution: Pa Pc Pe Ppc Ppe O

IUCN category: LC

Aconitum lycoctomum L. [*A. vulparia* subsp. *ranunculifolium* (Rchb.) M. Lániz; *A. pyrenaicum* subsp. *lamarckii* (Rchb.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Remarks: Utelli & al. (2000) conclude that there is one single yellow-flowered taxon in southern and central Europe of *Aconitum* subgen. *Lycoctonum*: *A. lycoctonum* L. Utelli & al. (2000) did not detect any distinct groups within the yellow-flowered taxa in central and southern Europe which can be separated into subspecies.

Aconitum napellus L. subsp. *vulgare* Rouy & Foucaud

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Actaea spicata L.

Distribution: Pa Pc Pe Ppc Ppe O +Cn

IUCN category: LC

Remarks: Not found recently in Montseny massif (Sáez & al., 2015).

Adonis aestivalis L. subsp. *aestivalis*

Non-native: N

Distribution: Pe

Remarks: Its non-native status is uncertain.

Adonis aestivalis subsp. *squarrosa* (Steven) Nyman [*A. aestivalis* subsp. *provincialis* (DC.) C.H. Steinb.]

Non-native: N

Distribution: ?Pe Aw S

Adonis annua L. [*A. annua* subsp. *castellana* (Pau) C.H. Steinb.; *A. annua* subsp. *cupaniana* (Guss.) C.H. Steinb.]

Non-native: N

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Adonis flammea Jacq. [*A. flammea* subsp. *polypetala* (Lange) C.H. Steinb.]

Non-native: N

Distribution: ?Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs

Remarks: Its non-native status is uncertain.

Adonis microcarpa DC.*Distribution:* Ae Aw S Cc Cs*IUCN category:* LC***Adonis pyrenaica*** DC.*Distribution:* ?Pa Pc Pe Ppc Ppe*IUCN category:* LC***Adonis vernalis*** L.*Distribution:* Pe Ppe*IUCN category:* NT***Anemonastrum narcissiflorum*** (L.) Holub subsp. ***narcissiflorum*** [*Anemone narcissiflora* L. subsp. *narcissiflora*]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Anemone coronaria*** L.*Non-native:* N*Distribution:* Cs*Remarks:* Locally naturalised in orange fields at barranc de Núvols, Amposta (Montsià) where it was first found in March 1996 by R. Balada (pers. comm., 21 July 2019).***Anemone nemorosa*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Anemone palmata*** L.*Distribution:* R Cc Cs*IUCN category:* VU***Anemone ranunculoides*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Aquilegia puii*** Font Quer [*A. vulgaris* subsp. *puii* (Font Quer) O. Bolòs & Vigo]*Distribution:* Endemic. Cs*IUCN category:* EN*Remarks:* A distinct species endemic to Ports massif. It was confused with the widespread *A. vulgaris* (Martinell & al., 2011). The name *Aquilegia puii* was formally lectotypified by J. Molero & L. Sáez in Nardi (2014).***Aquilegia pyrenaica*** DC.*Distribution:* Pa Pc*IUCN category:* LC

Aquilegia viscosa Gouan subsp. ***montsiciana*** (Font Quer) O. Bolòs & Vigo

Distribution: Subendemic. Pe Ppc Ppe

IUCN category: LC

Aquilegia vulgaris L. subsp. ***vulgaris***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Caltha palustris L.

Distribution: Pa Pc Pe Ppc Ppe O

IUCN category: LC

Ceratocephala falcata (L.) Pers. [*Ranunculus falcatus* L.]

Distribution: Ppc Aw S Cc

IUCN category: LC

Clematis flammula L.

Distribution: Pe Ppc Ppe Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Clematis recta L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc ?Cs

IUCN category: LC

Clematis vitalba L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Consolida ajacis (L.) Schur [*Delphinium ajacis* L.]

Non-native: C

Distribution: Pa Pc Ae Aw S R Cc

Consolida orientalis (J. Gay) Schrödinger [*C. hispanica* (Costa) Greuter & Burdet]

Non-native: C

Distribution: Cs

Remarks: Observed, probably as accidental, in several locations of Montsià and Baix Ebre (Royo, 2006).

Consolida pubescens (DC.) Soó [*Delphinium pubescens* DC.]

Distribution: ?Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs

IUCN category: LC

Delphinium bolosii C. Blanché & Molero [*D. fissum* subsp. *bolosii* (C. Blanché & Molero) O. Bolòs & Vigo]

Distribution: Subendemic. Ppc Cn Cc

IUCN category: VU

Remarks: This species is more widely distributed in the Iberian Peninsula than first assumed; several populations exist in the Iberian System. Phylogeographic analyses using cpDNA reveal that *D. mansanetianum* Pitarch, Peris & Sanchis (described from Mosqueruela, Teruel province) is genetically closely related to *D. bolosii* (Ramírez-Rodríguez & al., 2019). The taxonomic treatment of the complex *D. fissum* subsp. *fissum*, *D. fissum* subsp. *sordidum* and *D. bolosii* is unclear; all these taxa are probably best treated as *D. fissum* subspecies.

Delphinium gracile DC. [*D. peregrinum* subsp. *gracile* (DC.) O. Bolòs & Vigo]

Distribution: Aw S R Cc Cs

IUCN category: LC

Delphinium montanum DC. [*D. elatum* subsp. *montanum* (DC.) Nyman; *D. elatum* auct.]

Distribution: Subendemic. Pe Ppe

IUCN category: NT

Delphinium verdunense Balb. [*D. peregrinum* subsp. *verdunense* (Balb.) Cout.; *D. halteratum* subsp. *verdunense* (Balb.) Graebn. & P. Graebn.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ficaria ambigua Boreau [*F. verna* subsp. *fertilis* (Laegaard) Stace; *Ranunculus ficaria* subsp. *fertilis* Laegaard]

Distribution: Pa Pc Pe Ppe Ae Aw O R Cn Cc

IUCN category: LC

Remarks: See Veldkamp (2015) and Zonneveld (2015) for systematics. The presence of *F. verna* Huds. [*Ranunculus ficaria* L. subsp. *bulbilifer* Lambinon] is excluded since no plants with axillary bulbs have been found in the studied area. Reports of *F. grandiflora* Robert [*Ranunculus ficaria* subsp. *ficariiformis* Rouy & Foucaud] appear to be attributable to large-flowered forms of *F. ambigua*, although some occurrences due to gardening escapes cannot be excluded.

Helleborus foetidus L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Helleborus niger L.

Non-native: C

Distribution: Ae

Remarks: Reported as a relic of cultivation in an abandoned garden in Berga (Aymerich, 2017b).

Helleborus viridis L. subsp. ***occidentalis*** (Reut.) Schiffn.

Distribution: Pa Pc Pe Ppc Ppe Aw O Cn

IUCN category: LC

Hepatica nobilis Schreb. [*Anemone hepatica* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: See Hoot & al. (2012) for a formal reclassification of *Anemone*.

Isopyrum thalictroides L.

Distribution: Pa O

IUCN category: NT

Nigella damascena L.

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Nigella gallica Jord.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Nigella nigellastrum (L.) Willk. [*Garidella nigellastrum* L.]

Distribution: S

IUCN category: EN

Pulsatilla alpina (L.) Delarbre subsp. ***apiifolia*** (Scop.) Nyman [*Anemone alpina* L. subsp. *apiifolia* (Scop.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe ?Ppc

IUCN category: LC

Pulsatilla alpina subsp. ***cantabrica*** M. Laínz [*Anemone alpina* subsp. *cantabrica* (M. Laínz) B. Bock]

Distribution: Pa

IUCN category: DD

Remarks: Reported from Còth de Varradòs area (Benito Alonso & Montserrat, 2000).

Pulsatilla alpina subsp. ***font-queri*** M. Laínz & P. Monts. [*Anemone alpina* subsp. *font-queri* (M. Laínz & P. Monts.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Pulsatilla rubra Delarbre [*Anemone pulsatilla* subsp. *rubra* (Delarbre) Rouy & Foucaud]

Distribution: Ppc ?Ppe

IUCN category: LC

Remarks: Also known from Cerdanya plain in French territory near the boundary of Pe. Old reports from Ppe require confirmation.

Pulsatilla vernalis (L.) Mill. [*Anemone vernalis* L.]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Ranunculus aconitifolius L.

Distribution: Pa Pc Pe

IUCN category: LC

Ranunculus acris subsp. *despectus* M. Laínz

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Reports of *R. acris* subsp. *friesianus* (Jord.) Rouy & Foucaud and *R. acris* L. subsp. *acris* should be referred to this taxon (Cook & al., 1986).

Ranunculus alpestris L.

Distribution: Pa Pc

IUCN category: LC

Ranunculus amplexicaulis L.

Distribution: Pa Pc

IUCN category: LC

Ranunculus angustifolius DC. [*R. pyrenaicus* subsp. *angustifolius* (DC.) Rouy & Foucaud]

Distribution: Pc Pe

IUCN category: LC

Remarks: It was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.

Ranunculus aquatilis L.

Distribution: Pa Pc Pe ?Cn

IUCN category: LC

Remarks: Many reports of this species correspond to other species included in the subgenus *Batrachium*.

Ranunculus arvensis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ranunculus baudotii Godr. [*R. peltatus* subsp. *baudotii* (Godr.) C.D.K. Cook]

Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Ranunculus bulbosus subsp. *aleae* (Willk.) Rouy & Foucaud

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ranunculus bulbosus L. subsp. *bulbosus* [*R. bulbosus* subsp. *bulbifer* (Jord.) J.B. Neves]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Subsp. *bulbifer* is not worthy of taxonomic recognition. *Ranunculus bulbosus* subsp. *bulbosus* is represented by var. *hispanicus* Freyn (Cook & al., 1986).

Ranunculus carinthiacus Hoppe [*R. montanus* subsp. *carinthiacus* (Hoppe) Arcang.]

Distribution: ?Pa Pc ?Pe

IUCN category: LC

Remarks: Not listed for the studied area by Cook & al. (1986). This species has been reported from French Pyrenees close to the boundary of Pe.

Ranunculus carlittensis (Sennen) Grau [*R. auricomus* L. subsp. *carlittensis* (Sennen)

Molero, J. Pujadas & Romo]

Distribution: Pc Pe Ppc Ppe Cn

IUCN category: LC

Ranunculus envalirensis Grau [*R. auricomus* L. subsp. *envalirensis* (Grau) Molero, J.

Pujadas & Romo]

Distribution: Subendemic. Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Probably not subendemic, since *R. cebennensis* has been reduced to synonymy of *R. envalirensis* by Karbstein & al. (2020).

Ranunculus flammula L.

Distribution: Pa Pc Pe O R

IUCN category: LC

Ranunculus glacialis L.

Distribution: Pa Pc Pe

IUCN category: LC

Ranunculus gramineus L.

Distribution: Pa Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ranunculus gouanii Willd. [*R. montanus* subsp. *gouanii* (Willd.) Cadevall]

Distribution: Pa Pc ?Pe ?Ppc ?O

IUCN category: LC

Ranunculus hederaceus L.

Distribution: Pc Pe ?Cn

IUCN category: NT

Ranunculus lingua L

Distribution: [Ppc] [Pe] +O +R

IUCN category: EW

Remarks: Native populations in R are long ago extinct (Sáez & al., 2010). Recently this species has been introduced in artificial ponds in Guàrdia d'Ares, Alt Urgell (Tarragó & Casals, 2019) and Camprodon (Ripollès county).

Ranunculus muricatus L.

Distribution: Pc Pe Ppe Ae Aw O R Cn Cc

IUCN category: LC

Ranunculus monspeliacus L.

Distribution: Pe R Cn Cc

IUCN category: LC

Ranunculus nodiflorus L.

Distribution: Pe

IUCN category: CR

Remarks: Known from a small temporary pond in the Albera massif (Font & al., 1998).

Ranunculus ophioglossifolius Vill.

Distribution: Pe R Cn

IUCN category: LC

Ranunculus paludosus Poir. subsp. *paludosus*

Distribution: Pe Ae Aw R Cn Cc

IUCN category: LC

Ranunculus parviflorus L.

Distribution: Pe Ae Aw O R Cn Cc Cs

IUCN category: LC

Ranunculus parnassifolius L. subsp. *parnassifolius*

Distribution: ?Pa Pc Pe

IUCN category: LC

Remarks: No morphological character or combination of characters is able to distinguish the plants as belonging to different ploidy levels (or subspecies) either in the Cantabrian

Mountains or in the Pyrenees (Cires & al., 2010, 2012). *Ranunculus parnassifolius* subsp. *parnassifolius* (diploid and tetraploid) occurs in the Pyrenees whereas the tetraploid *R. parnassifolius* subsp. *heterocarpus* P. Küpfer is restricted to the Alps (Cires & al., 2012). Sáez & al. (2010) regarded *R. parnassifolius* subsp. *parnassifolius* as subendemic; however the new taxonomic proposal (Cires & al., 2012) determines that most of its distribution area is outside the geographical coverage considered in this checklist.

Ranunculus peltatus Schrank

Distribution: ?Pc ?Ppc Ppe Ae Aw R ?Cn ?Cc ?Cs

IUCN category: LC

Ranunculus penicillatus (Dumort.) Bab. [*R. aquatilis* auct. non L.]

Distribution: R

IUCN category: DD

Ranunculus pseudofluitans (Syme) Baker & Foggit [*R. penicillatus* subsp. *pseudofluitans* (Syme) S.D. Webster]

Distribution: Pc Pe Ppc Ppe Ae Aw R Cn

IUCN category: LC

Remarks: This species has clearly expanded its range since 1990.

Ranunculus platanifolius L. [*R. aconitifolius* subsp. *platanifolius* (L.) Rikli]

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Ranunculus pyrenaicus L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Ranunculus repens L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ranunculus ruscinonensis Landolt [*R. montanus* subsp. *ruscinonensis* (Landolt) O. Bolòs & Font Quer]

Distribution: Subendemic. Pa Pc Pe Ppc Ppe O

IUCN category: LC

Ranunculus sardous Crantz

Distribution: Pe Ae O R Cn Cc Cs

IUCN category: LC

Ranunculus sceleratus L.

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Ranunculus thora L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Ranunculus trichophyllus*** Chaix*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Remarks: Pyrenean reports of *R. trichophyllus* subsp. *eradicatus* (Laest.) C.D.K. Cook, a taxonomic synonym of *R. confervoides* (Fr.) Fr.] and *R. trichophyllus* subsp. *lutulentus* E.P. Perrier & Songeon (Margalef Mir, 1981; Canalis & al., 1984; Ballesteros, 1989; Carrillo & Ninot, 1992a) are referable to small forms of *R. trichophyllus*. *Ranunculus confervoides* has a restricted Arctic-boreal distribution only in northern Europe (Wiegleb & al., 2017).

Ranunculus trilobus Desf. [*R. sardous* subsp. *trilobus* (Desf.) Rouy & Foucaud]*Distribution:* Pe S O R Cn Cc Cs*IUCN category:* LC***Ranunculus tripartitus*** DC.*Distribution:* ?Pc ?Pe R Cn*IUCN category:* LC***Ranunculus tuberosus*** Lapeyr. [*R. serpens* Schrank subsp. *nemosus* (DC.) G. López]*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Thalictrum alpinum*** L.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Thalictrum aquilegifolium*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Thalictrum foetidum*** L. subsp. *foetidum**Distribution:* Ppe*IUCN category:* EN

Remarks: Known from a single location in Tosa d'Alp massif (Hand, 2001; Aymerich & Sáez, 2021a).

Thalictrum lucidum L. [*T. mediterraneum* Jord.; *T. morisonii* auct., *T. morisonii* var. *maritimum* sensu O. Bolòs & Vigo in Montserrat (1986)]*Distribution:* R*IUCN category:* VU

Thalictrum maritimum Léon Dufour [*T. morisonii* subsp. *maritimum* (Léon Dufour) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Cs

IUCN category: CR

Remarks: Restricted to a small area in the Ebre Delta (els Ullals) (see Curcó, 2003; Sáez & al., 2010).

Thalictrum minus L. subsp. *saxatile* Ces. [*T. foetidum* subsp. *valentinum* O. Bolòs & Vigo; *T. pubescens* DC., nom. illeg.; *T. minus* var. *pyrenaicum* (Jord.) O. Bolòs & Vigo; *T. minus* auct.; *T. foetidum* auct.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Thalictrum simplex L. subsp. *simplex* [*T. flavum* subsp. *simplex* (L.) O. Bolòs & Vigo; *T. flavum* subsp. *costae* (Debeaux) Rouy & Foucaud; *T. flavum* subsp. *flavum* sensu O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppe O R

IUCN category: LC

Thalictrum tuberosum L.

Distribution: ?Pc Ppc Ppe Ae Aw S ?O Cn Cc Cs

IUCN category: LC

Trollius europaeus L.

Distribution: Pa Pc Pe Ppc Ppe O

IUCN category: LC

PLATANACEAE

Platanus orientalis L. var. *acerifolia* Aiton [*P. ×hispanica* Münchh.]

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: It is found, generally, as casual; rarely locally naturalised.

BUXACEAE

Buxus sempervirens L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

PAEONIACEAE

Paeonia officinalis L. subsp. *microcarpa* Nyman [*P. officinalis* subsp. *humilis* (Retz.) Cullen & Heywood]

Distribution: Pe Ppc Ppe Cc Cs

IUCN category: LC

ALTINGIACEAE

Liquidambar styraciflua L.

Non-native: C

Distribution: Ppe ?O

Remarks: Reported from Sant Joan de les Abadesses, Ripollès (Aymerich, 2019); also listed for Garrotxa county (Oliver, 2019).

GROSSULARIACEAE

Ribes alpinum L.

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Ribes petraeum Wulfen

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Ribes rubrum L.

Non-native: N

Distribution: ?Pa Pe +O Cn

Remarks: Only available recent data from Cerdanya plain (Pe) (Aymerich, 2014) and Guillerics (Cn) (Pérez-Haase & al., 2013). Information concerning *R. rubrum* from other areas is unclear. Some reports are probably referable to cultivated plants or based on confusion with *R. petraeum*.

Ribes uva-crispa L.

Distribution: Pa Pc Pe [Ppe] [Aw] [Cc]

IUCN category: LC

Remarks: Formerly cultivated (outside of the axial Pyrenees), currently escaped or locally naturalised; probably extinct in Aw and Cc.

Ribes ×varoi G. Blanca [*R. alpinum* × *R. petraeum*]

Distribution: Pa Pe

SAXIFRAGACEAE*Bergenia crassifolia* (L.) Fritsch*Non-native:* C*Distribution:* Ppe Ae ?O*Remarks:* Cultivated for ornament; some specimens can be locally escaped near gardens. Known from Berguedà and Osona (Aymerich, 2013d; 2016a); also listed for Garrotxa (Oliver, 2019).*Chrysosplenium alternifolium* L.*Distribution:* Pe*IUCN category:* VU*Remarks:* Restricted to two small areas in Cerdanya mountains; more widespread in eastern French Pyrenees.*Chrysosplenium oppositifolium* L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC*Micranthes clusii* (Gouan) Fern. Prieto, V. Vázquez, Vallines & Cires [*Saxifraga clusii* Gouan]*Distribution:* Pa Pc Pe*IUCN category:* LC*Micranthes stellaris* (L.) Galasso, Banfi & Soldano subsp. *stellaris* [*Saxifraga stellaris* L.]*Distribution:* Pa Pc Pe*IUCN category:* LC*Saxifraga aizoides* L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Saxifraga androsacea* L.*Distribution:* Pa Pc Pe*IUCN category:* LC*Saxifraga aquatica* Lapeyr.*Distribution:* Pa Pc Pe*IUCN category:* LC*Remarks:* This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is probably outside the geographical coverage considered in this checklist.

Saxifraga aretioides Lapeyr.*Distribution:* Pa*IUCN category:* VU*Remarks:* Recent information on this species is poor (Guardiola & al., 2011).***Saxifraga aspera*** L.*Distribution:* Pc Pe*IUCN category:* LC***Saxifraga bryoides*** L.*Distribution:* Pa Pc Pe*IUCN category:* LC***Saxifraga caesia*** L.*Distribution:* Pa Pc Ppe*IUCN category:* LC***Saxifraga catalaunica*** Boiss. & Reut. [*S. callosa* Sm. subsp. *catalaunica* (Boiss. & Reut.) D.A. Webb]*Distribution:* Endemic. Cn Cc*IUCN category:* NT*Remarks:* Endemic to Montserrat and Sant Llorenç del Munt mountains.***Saxifraga fragilis*** Schrank subsp. *fragilis**Distribution:* Ppc Ppe Q Cn Cc Cs*IUCN category:* LC***Saxifraga fragosoi*** Sennen [*S. hypnoides* L. subsp. *continentalis* Engl. & Irmsch.]*Distribution:* Pe*IUCN category:* VU*Remarks:* Only known from a few locations in Albera massif (Sáez & al., 2010).***Saxifraga genesiana*** P. Vargas [*S. geranioides* subsp. *genesiana* (P. Vargas) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* Endemic. Cn*IUCN category:* NT*Remarks:* Endemic to Montseny and Guillerics massifs.***Saxifraga geranioides*** L.*Distribution:* Subendemic. Pa Pc Pe*IUCN category:* LC*Remarks:* Reports for Puigsacalm massif (Ppe) are due to confusion with *S. fragilis*.

Saxifraga granulata L. subsp. *granulata**Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc*IUCN category:* LC***Saxifraga hirsuta*** L. subsp. *hirsuta**Distribution:* Pa*IUCN category:* LC*Remarks:* Currently only known from the lower Aran valley, where it penetrates from the France. Old reports from the upper Aran valley require confirmation.***Saxifraga intricata*** Lapeyr.*Distribution:* Pa Pc*IUCN category:* LC***Saxifraga longifolia*** Lapeyr.*Distribution:* Pa Pc Pe Ppc Ppe Ae ?Aw O Cs*IUCN category:* LC***Saxifraga media*** Gouan*Distribution:* Subendemic. Pa Pc Pe Ppe*IUCN category:* LC***Saxifraga moschata*** Wulfen [*S. moschata* subsp. *fastigiata* (Luizet) P. Fourn.]*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Saxifraga oppositifolia*** L. subsp. *oppositifolia**Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Remarks:* Plants with alternate leaves (*S. oppositifolia* subsp. *paradoxa* D.A. Webb; *S. oppositifolia* var. *alternifolia* Engler) can be found growing together with typical *S. oppositifolia*. According to Winkler & al. (2013) *S. oppositifolia* subsp. *paradoxa* should not be taxonomically recognised and should be sunk into typical *S. oppositifolia*.***Saxifraga paniculata*** Mill. subsp. *paniculata**Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Saxifraga pentadactylis*** Lapeyr. subsp. *pentadactylis**Distribution:* Pa Pc Pe*IUCN category:* LC***Saxifraga praetermissa*** D.A. Webb*Distribution:* Pa Pc Pe*IUCN category:* LC

Saxifraga pubescens subsp. ***iratiana*** (F.W. Schultz) Engl. & Irmsch.

Distribution: Pa Pc

IUCN category: LC

Saxifraga pubescens Pourr. subsp. ***pubescens***

Distribution: Subendemic. Pa Pc Pe

IUCN category: LC

Saxifraga retusa Gouan subsp. ***retusa***

Distribution: Pc

IUCN category: NT

Saxifraga rotundifolia L. subsp. ***rotundifolia***

Distribution: Pc Pe Ppe O

IUCN category: LC

Saxifraga stolonifera Curtis

Non-native: N

Distribution: O

Remarks: It occurs as a garden escape in Garrotxa (Campos & Fàbregas, 1999).

Saxifraga tridactylites L.

Distribution: Pa Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Saxifraga umbrosa L.

Distribution: Pa Pc Ppc

IUCN category: LC

Saxifraga vayredana Luizet

Distribution: Endemic. Cn

IUCN category: LC

Remarks: Endemic from Montseny and Guilleries massifs.

Saxifraga* × *baregensis Rouy & E.G. Camus [*S. intricata* × *S. moschata*]

Distribution: Pa

Saxifraga* × *bubaniiana Engl. & Irmsch. [*S. geranioides* × *S. pubescens* subsp. *pubescens*]

Distribution: Pe

Saxifraga* × *cadevallii Louizet & Soulié [*S. genesiana* × *S. vayredana*]

Distribution: Cn

Saxifraga* × *capitata Lapeyr. [*S. aquatica* × *S. praetermissa*]

Distribution: Pc Pe

Saxifraga × *ciliaris* Lapeyr. [*S. moschata* × *S. praetermissa*]

Distribution: Pa

Saxifraga × *costei* Luizet & Soulié [*S. geranioides* × *S. moschata*]

Distribution: Pa Pe

Saxifraga × *gautieri* Rouy [*S. geranioides* × *S. media*]

Distribution: Pe

Saxifraga × *jeanpertii* Luizet [*S. moschata* × *S. pubescens* subsp. *pubescens*]

Distribution: Pe

Saxifraga × *leveillei* H.J. Coste & Soulié [*S. geranioides* × *S. pubescens* subsp. *iratiana*]

Distribution: Pa

Saxifraga × *lecomtei* Luizet & Soulié [*S. geranioides* × *S. pentadactylis*]

Distribution: Pe

Saxifraga × *martyii* Luizet & Soulié [*S. moschata* × *S. pentadactylis*]

Distribution: Pe

Saxifraga × *verguini* Luizet & Soulié [*S. pubescens* subsp. *pubescens* × *S. pentadactylis*]

Distribution: Pe

Saxifraga × *yvesii* Neyraut & Verg. [*S. geranioides* × *S. intricata*]

Distribution: Pa

CRASSULACEAE

Aeonium arboreum (L.) Webb & Berthel.

Non-native: N

Distribution: R Cn Cc Cs

Aeonium canariense (L.) Webb & Berthel.

Non-native: C

Distribution: Cn

Remarks: Observed in suburban areas of Barcelona (Collserola mountain) probably as relic of cultivation (A. Rossell, <http://flora-vall-margenat.galeon.com/>).

Aeonium haworthii Webb & Berthel.

Non-native: C

Distribution: R Cn Cc

Remarks: Reported from several coastal locations (Aymerich, 2016b, 2017b; Gómez-Bellver & al., 2019b).

Aeonium lindleyi Webb & Berthel.

Non-native: C

Distribution: Cn

Remarks: Observed in suburban areas of Barcelona (Collserola mountain), probably as relic of cultivation (A. Rossell, <http://flora-vall-margenat.galeon.com/>).

Cotyledon orbiculata L. [*C. macrantha* A. Berger]

Non-native: N

Distribution: R Cn Cc Cs

Remarks: Aymerich (2015e) published the first report; later this species was found in other coastal areas (Gómez-Bellver & al., 2019; Verloove & al., 2019). Specimens with non-glaucous leaves, which were called *C. macrantha* are known from R, Cc and Cs.

Crassula arborescens (Mill.) Willd.

Non-native: C

Distribution: Cc ?Cs

Remarks: Only confirmed from a single location in Salou, Tarragonès (Gómez-Bellver & al., 2019c). A report for Santa Bàrbara (Cs) requires confirmation (Torres & al., 2003) since a confusion with *C. ovata* (Mill.) Druce is possible.

Crassula campestris (Eckl. & Zeyh.) Endl.

Distribution: R Cc

IUCN category: NT

Remarks: There is no consensus on its native status in the Iberian Peninsula; published sources treat it as either exotic or native.

Crassula multicava Lem.

Non-native: N

Distribution: R Cn Cc

Remarks: Aymerich & Gustamante (2015) published the first report; later this species was found in other coastal areas (Aymerich, 2016b, 2017b; Gómez-Bellver & al., 2019b; Verloove & al., 2019).

Crassula muscosa L. [*C. lycopodioides* Lam.]

Non-native: N

Distribution: R Cn Cc Cs

Crassula nudicaulis L.

Non-native: C

Distribution: R Cn

Remarks: Its identity requires confirmation; known from Cadaqués, Alt Empordà (Aymerich, 2016c) and Begur, Baix Empordà (Aymerich, 2019).

Crassula ovata (Mill.) Druce*Non-native*: C*Distribution*: R Cn Cc Cs*Remarks*: A common garden escape in coastal areas, but no true populations are known.*Crassula pubescens* Thunb. subsp. *radicans* (Haw.) Toelken*Non-native*: N*Distribution*: R*Remarks*: Known only from Port de la Selva (Alt Empordà) where it occurs in suburban areas (Aymerich, 2016c).*Crassula tetragona* L. subsp. *robusta* (Toelken) Toelken*Non-native*: N*Distribution*: R Cc Cs*Remarks*: Reported as naturalised mainly in Alt Empordà coast (Giménez, 2012; Aymerich, 2015e); later found elsewhere, probably only as casual.*Crassula tillaea* Lest.-Garl.*Distribution*: O R Cn Cc*IUCN category*: LC*Remarks*: Also reported from a location in Castelló province close to the boundary of Cs (Royo, 2006).*Crassula vaillantii* (Willd.) Roth*Distribution*: R Cc*IUCN category*: NT*Remarks*: A collection from Montroig in 1921 (Sáez & al., 2000) is the only known occurrence in southern Catalonia.*Graptopetalum paraguayense* (N.E. Br.) E. Walther*Non-native*: C*Distribution*: Ae Aw Cn Cc*Remarks*: A garden escape found in urban and suburban habitats. First report from Artés (Sáez & Guillot, 2014); later found elsewhere (Aymerich & Gustamante, 2015; Aymerich, 2015e,b; Gómez-Bellver & al., 2019b).× *Graptosedum* G.D. Rowley cv. "Francesco Baldi" [*Graptopetalum amethystinum* (Rose) E. Walther × ?*Sedum pachyphyllum*]*Non-native*: C*Distribution*: Cn Cc*Remarks*: Known from Palamós, Baix Empordà (Gómez-Bellver & al., 2019a) and Calafell, Baix Penedès (Aymerich, 2020a).

Hylotelephium maximum (L.) Holub [*Sedum maximum* (L.) Suter; *S. telephium* L. subsp. *maximum* (L.) Schinz]

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Remarks: Often cultivated in rural gardening; many populations are naturalised.

Hylotelephium spectabile (Boreau) H. Ohba [*Sedum spectabile* Boreau]

Non-native: C

Distribution: Aw

Remarks: A garden scape in Santpedor, Bages (Aymerich, 2016c).

Hylotelephium telephium (L.) H. Ohba [*Sedum telephium* L.; *S. telephium* subsp. *fabaria* (Koch) Kirschl.]

Distribution: Pa Pc Pe ?Cn

IUCN category: LC

Kalanchoe daigremontiana Raym.-Hamet & H. Perrier [*Bryophyllum daigremontianum* (Raym.-Hamet & H. Perrier) A. Berger]

Non-native: C

Distribution: Cn

Remarks: It was found growing spontaneously in a garden in Blanes (Gómez-Bellver & al., 2020) and Collserola; often confused with *K. ×houghtonii*.

Kalanchoe fedtschenkoi Raym.-Hamet & H. Perrier

Non-native: C

Distribution: R Cc Cs

Remarks: Rarely escaped or persistent after cultivation (Aymerich, 2016b; Mesquida & al., 2017).

Kalanchoe sexangularis N.E. Br.

Non-native: C

Distribution: Cc Cs

Remarks: Reported from Ametlla de Mar, Baix Ebre and La Ràpita, Montsià (Aymerich & Gustamante, 2016; Mesquida & al., 2017).

Kalanchoe tubiflora (Harv.) Raym.-Hamet [*Bryophyllum tubiflorum* Harvey; *Kalanchoe delagoensis* Eckl. & Zeyh.]

Non-native: C

Distribution: R Cn Cc

Remarks: Figueiredo & Smith (2017) provided information about the correct name for this species. First report from El Vendrell (Guillot Ortiz & al., 2015), later found elsewhere (Aymerich & Gustamante, 2016; Aymerich, 2016c; Mesquida & al. 2017).

Kalanchoe ×houghtonii D.B. Ward [*K. daigremontiana* × *K. tubiflora*]

Non-native: N

Distribution: Ae R ?O Cn Cc Cs

Remarks: Casual in non-coastal areas (Ae).

Petrosedum forsterianum (Sm.) Grulich [*Sedum forsterianum* Sm.]

Distribution: Cc

IUCN category: NT

Remarks: Its occurrence is only confirmed from Prades mountains.

Petrosedum montanum (E. P. Perrier & Songeon) Grulich [*Sedum montanum* E. P. Perrier & Songeon subsp. *montanum*, *S. rupestre* subsp. *montanum* (E. P. Perrier & Songeon) Hegi & Em. Schmid.]

Distribution: Pc Pe Ppe

IUCN category: LC

Petrosedum rupestre (L.) P.V. Heath [*Sedum rupestre* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn

IUCN category: LC

Petrosedum sediforme (Jacq.) Grulich subsp. *sediforme* [*Sedum sediforme* (Jacq.) Pau]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Phedimus spurius (M. Bieb.) Hart [*Sedum spurium* M. Bieb.]

Non-native: N

Distribution: Pc

Remarks: Known from three locations in Pallars county: Espot, Alins and Cabdella (Carrillo & Ninot, 1992a; Aymerich, 2017b).

Rhodiola rosea L. [*Sedum roseum* (L.) Scop.]

Distribution: Pa Pc

IUCN category: LC

Sedum acre L. subsp. *acre*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sedum album L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sedum alpestre Vill.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Sedum andegavense (DC.) Desv.*Distribution:* R Cn Cc*IUCN category:* LC***Sedum anglicum*** Huds.*Distribution:* Pa Pc Pe*IUCN category:* LC*Remarks:* Pyrenean populations were referred to subsp. *pyrenaicum* Lange (Bolòs & Vigo, 1990). However, the taxonomic value of this subspecies is uncertain; it was not listed as taxonomically distinct by Castroviejo & Velayos (1997) and Tison & al. (2014).***Sedum annuum*** L.*Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Sedum atratum*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Sedum brevifolium*** DC.*Distribution:* Pa Pc Pe Ppe Cn*IUCN category:* LC***Sedum caespitosum*** (Cav.) DC.*Distribution:* Ppe Aw S R Cn Cc*IUCN category:* LC*Remarks:* Probably sporadic in Ppe and Aw, where it occurs in roadsides.***Sedum candolleianum*** G. López [*S. candollei* Raym.-Hamet; *Mucizonia sedoides* (DC.) D.A. Webb]*Distribution:* Pa Pc Pe*IUCN category:* LC***Sedum cepaea*** L.*Distribution:* Pa Pc Pe Ppe O R Cn*IUCN category:* LC***Sedum dasyphyllum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Some specimens from Southern Catalonia are referable to subsp. *glanduliferum* (Guss.) Nyman. Castroviejo & Velayos (1997) also listed this subspecies for Girona province.

Sedum hirsutum All. subsp. *hirsutum**Distribution:* Pa Pc Pe Ppc Ppe R Cn Cc*IUCN category:* LC***Sedum palmeri*** S. Watson*Non-native:* C*Distribution:* Ae ?O Cn Cc*Remarks:* A garden escape usually found in urban habitats (roofs and walls). See Aymerich & Sáez (2015) and Verloove & al. (2019) for its distribution.***Sedum praealtum*** A. DC. [*S. dendroideum* subsp. *praealtum* (A. DC.) R. T. Clausen]*Non-native:* C*Distribution:* Ppe Ae R Cn Cc Cs*Remarks:* Initially reported from Tarragona province (Guillot & van der Meer, 2010). Reports of *S. dendroideum* should refer to *S. praealtum*. Probably this species is in the process of naturalisation in some Costa Brava cliffs.***Sedum rubens*** L.*Distribution:* O R Cn ?Cc*IUCN category:* LC*Remarks:* Its presence in Cc (muntanyes de Prades) requires confirmation.***Sedum ×rubrotinctum*** R.T. Clausen [*S. pachyphyllum* Rose × *S. stablii* Solms]*Non-native:* C*Distribution:* Aw R Cn Cc*Remarks:* Sometimes cultivated in gardens, occasionally escaped in suburban areas.***Sedum sarmentosum*** Bunge*Non-native:* C*Distribution:* Pa Pc*Remarks:* Naturalised in synanthropic habitats of lower Aran Valley and Vall Fosca (Castroviejo & Velayos 1995; Aymerich, 2019).***Sedum spathulifolium*** Hook. [*Gormaniana spathulifolia* (Hook.) Á. Löve & D. Löve]*Non-native:* C*Distribution:* Cs*Remarks:* Only observed in an urban habitat from Amposta, Montsià (Royo, 2006).***Sedum villosum*** L.*Distribution:* Pa Pc Pe*IUCN category:* LC

Sempervivum arachnoideum* L.Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Remarks:* *Sempervivum arachnoideum* subsp. *tomentosum* (C.B. Lehm. & Schnittsp.) Schinz & Thell. was reported from Pyrenees. It is a form of *S. arachnoideum* of very limited taxonomic value (Rosselló, 1997). Several reports are probably referable to *S. fauconnetii*.***Sempervivum fauconnetii* Reut.***Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Remarks:* Apparently originated through hybridisation between *S. tectorum* and *S. arachnoideum*. It constitutes large populations in Serra del Cadí and its surroundings (Ppe, Pe), whereas it is scarce in limestone areas in Pc and Pa.***Sempervivum montanum* L. subsp. *montanum****Distribution:* Pa Pc Pe Ppe Cn*IUCN category:* LC***Sempervivum tectorum* L. subsp. *tectorum*** [incl. *S. tectorum* subsp. *alpinum* (Griseb & Schenk) Wettst.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw Q R Cn Cc Cs*IUCN category:* LC*Remarks:* Cultivated in rural gardening, some populations are naturalised. It is probably naturalised in R, Ae and Aw.***Sempervivum xbarbulatum* Schott [*S. arachnoideum* × *S. montanum*]***Distribution:* Pa Pc Pe***Sempervivum xschotii* C.B. Lehm. & Schnittsp. [*S. montanum* × *S. tectorum*]***Distribution:* Pa Pc Pe*Remarks:* Some populations in absence of *S. montanum* are known in limestone areas of Pe.***Umbilicus rupestris* (Salisb.) Dandy***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S Q R Cn Cc Cs*IUCN category:* LC**HALORAGACEAE*****Myriophyllum alterniflorum* DC.***Distribution:* Pa Pc R*IUCN category:* LC

Myriophyllum aquaticum (Vell.) Verdc.

Non-native: N

Distribution: Cn

Remarks: Casasayas (1989) reported this species for two artificial ponds in Barcelona metropolitan area. Also found in Fogars de la Selva, Montnegre range (data from Montengre Natural Park, 2019).

Myriophyllum spicatum L.

Distribution: Pa Pe Ppc Ppe Ae S O R Cn Cc Cs

IUCN category: LC

Myriophyllum verticillatum L.

Distribution: Ppc Cn Cs

IUCN category: VU

Remarks: Probably extinct in Cn. Some reports for O, Ae, Cc (and in areas with confirmed presence) are probably based on confusion with *M. spicatum*.

VITACEAE

Nekemias arborea (L.) J. Wen & Boggan [*Ampelopsis arborea* (L.) Koehne]

Non-native: C

Distribution: Ae

Remarks: A single location is known in middle bassin of Llobregat river, close to Berga (Aymerich, Aymerich, 2020a).

Parthenocissus inserta (A. Kern.) Fritsch

Non-native: I

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc

Remarks: Mainly invasive in Ae, O and Cn. Reports of *P. quinquefolia* (L.) Planch. are due to confusion with *P. inserta*.

Parthenocissus tricuspidata (Siebold & Zucc.) Planch.

Non-native: C

Distribution: Pc Ae Cn Cc

Remarks: A rare garden escape found in urban and suburban habitats (see Casasayas, 1989; Gómez-Bellver & al., 2019a).

Vitis labrusca L.

Non-native: C

Distribution: Ppe Cc Cn

Vitis riparia Michx.

Non-native: I

Distribution: Pa Pc Ppc Ppe Ae R Cn Cc

Remarks: It has invasive character in the upper valley of Segre river (Aymerich, 2013a).

Vitis rupestris Scheele*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*Remarks:* It is the more widespread alien species of the genus *Vitis*.*Vitis vinifera* subsp. *sylvestris* (C.C. Gmel.) Hegi*Distribution:* ?Pe ?Ppc Ppe Cn ?Cs*IUCN category:* VU*Remarks:* The existence of populations in Cn and Ppe was confirmed by Arnold (1998) and Aymerich (2015a), respectively. Some reports from Pe, Ppc and Cs require confirmation.*Vitis vinifera* L. subsp. *vinifera**Non-native:* C*Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* So far is unknown that this taxon would constitute naturalised populations. Several reports of *V. vinifera* outside cultivation areas are probably due to confusion with hybrids or American species of the genus.*Vitis* × *bacoi* Ardenghi, Galasso & Banfi [*V. riparia* × *V. vinifera*]*Non-native:* N*Distribution:* Pc Ppc Ppe Ae Cn*Remarks:* See Aymerich (2017b) for its distribution. This taxon is probably overlooked.*Vitis* × *gallica* F.M. Vázquez [*V. berlandieri* Planch. × *V. vinifera*]*Non-native:* C*Distribution:* Aw*Remarks:* Reported from two locations in the middle basin of Llobregat river (Aymerich, 2013b).*Vitis* × *goliath* Ardenghi, Galasso & Banfi [*V. riparia* × *V. rupestris* × *V. vinifera*]*Non-native:* N*Distribution:* Aw Cn Cc*Remarks:* Reported from Pla de Bages, Moianès, middle bassin of Segre river and Baix Llobregat (Aymerich, 2016a, 2017b; Gómez-Bellver & al., 2019c); also observed in Espinelves (P. Aymerich, unpubl. data).*Vitis* × *instabilis* Ardenghi, Galasso, Banfi & Lastrucci [*V. riparia* × *V. rupestris*]*Non-native:* N*Distribution:* Ppe Ae Aw S R Cn Cc*Remarks:* A fairly common hybrid, first reported from middle Llobregat basin and Montseny massif (Aymerich, 2013b; Sáez & al., 2015a); later found elsewhere.

Vitis × *koberi* Ardenghi, Galasso, Banfi & Lastrucci [*V. berlandieri* × *V. riparia*]

Non-native: N

Distribution: Ppe Aw Cc

Remarks: First report from Pla de Bages, Moianès and eastern Prepyrenees (Aymerich, 2016a) as casual alien. Mainly naturalised in Penedès area, Cc (Aymerich, 2020a).

Vitis × *ruggeri* Ardenghi, Galasso, Banfi & Lastrucci [*V. berlandieri* × *V. rupestris*]

Non-native: C

Distribution: Ppe Cc

Remarks: See Aymerich (2013) and Verloove & al. (2019) for its distribution.

ZYGOPHYLLACEAE

Fagonia cretica L.

Non-native: N

Distribution: Cc

Remarks: Locally naturalised in Plana de Sant Jordi, Baix Ebre (A. Buiria & D. Mesa, unpubl. data).

Tetraena alba (L. fil.) Beier & Thulin [*Zygophyllum album* L. fil.]

Distribution: Cs

IUCN category: VU

Remarks: Restricted to Ebre Delta.

Tribulus terrestris L.

Non-native: N

Distribution: Pc Ppc Aw S R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Zygophyllum fabago L.

Non-native: N

Distribution: Aw S R Cc Cs

Remarks: Some populations are unstable or sporadic.

FABACEAE

Acacia baileyana F. Muell.

Non-native: C

Distribution: Cn Cc Cs

Remarks: BDBC mapped several occurrences of this species in southern Catalonia based on observations of R. Balada. These occurrences have been confirmed by R. Balada (pers. comm., June 2020).

Acacia dealbata Link

Non-native: N

Distribution: Pe O R Cn Cc

Acacia decurrens (J.C. Wendl.) Willd.

Non-native: C

Distribution: Cn

Remarks: Known from Barcelona suburban areas, in Collserola mountain.

Acacia longifolia (Andrews) Willd.

Non-native: N

Distribution: R Cn Cc Cs

Acacia melanoxylon R. Br.

Non-native: N

Distribution: Cn

Acacia provincialis A. Camus [*A. retinodes* auct., non Schldt.]

Non-native: C

Distribution: Cn Cc Cs

Remarks: See O'Leary (2007) for taxonomy.

Acacia pycnantha Benth.

Non-native: C

Distribution: Cn

Remarks: Reported from Palamós coast, Baix Empordà (Mallol & Maynés, 2008b).

Acacia rostellifera Benth.

Non-native: C

Distribution: Cc

Remarks: Reported from Viladecans (Barcelona metropolitan area) by Álvarez & al. (2016).

Acacia saligna (Labill.) Wendl.

Non-native: N

Distribution: Cn

Albizia julibrissin Durazz.

Non-native: N

Distribution: Ppe O Cn Cc

Adenocarpus telonensis (Loisel.) DC.

Distribution: Cn Cc

IUCN category: LC

Anthyllis cytisoides* L.Distribution:* R Cn Cc Cs*IUCN category:* LC***Anthyllis montana* L.***Distribution:* Pa Pc Pe Ppc Ppe Cc Cs*IUCN category:* LC***Anthyllis vulneraria* L. subsp. *alpestris* (Schult.) Asch. & Graebn.***Distribution:* Pa Pc ?Pe ?Ppe ?Cs*IUCN category:* LC*Remarks:* Its presence in eastern Pyrenees and Ports massif (Benedí, 1998, 2000) requires confirmation.***Anthyllis vulneraria* subsp. *gandogeri* (Sagorski) W. Becker [*A. vulneraria* subsp. *fontqueri* (Rothm.) A. Bolòs]***Distribution:* Pc Pe Ppc Ppe Ae Aw Cn Cc Cs*IUCN category:* LC***Anthyllis vulneraria* subsp. *sampaioana* (Rothm.) Vasc. [*A. vulneraria* subsp. *forondae* (Sennen) Cullen]***Distribution:* Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Anthyllis vulneraria* subsp. *vulnerarioides* (All.) Arcang. [*A. vulneraria* subsp. *dertosensis* (Rothm.) Font Quer; *A. vulneraria* subsp. *multifolia* (W. Becker) O. Bolòs & Vigo]***Distribution:* Pa Pc Pe Ppc Ppe Cs*IUCN category:* LC*Remarks:* Populations from Ports massif (Cs) were treated as *A. vulneraria* subsp. *dertosensis* (Rothm.) Font Quer, whereas some populations from Pe were called *A. vulneraria* subsp. *multifolia* (W. Becker) O. Bolòs & Vigo. These names were treated as synonyms of *A. vulneraria* subsp. *vulnerarioides* by Benedí (1998).***Amorpha fruticosa* L.***Non-native:* N*Distribution:* R*Remarks:* Reported, as locally naturalised, from a small area in lower basin of Ter river (Gesti & Fàbregas, 2000).***Anagyris foetida* L.***Non-native:* N*Distribution:* +Ae +Aw +O R +Cn +Cc Cs*Remarks:* Formerly cultivated. Most populations listed in the bibliography are declining or have disappeared.

Argyrolobium zanonii (Turra) P.W. Ball subsp. ***zanonii***

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Astragalus alopecuroides L. subsp. ***alopecuroides***

Distribution: Ae Aw S

IUCN category: LC

Astragalus alpinus L.

Distribution: Pa Pc Pe

IUCN category: LC

Astragalus australis (L.) Lam.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Astragalus austriacus Jacq.

Distribution: Ae

IUCN category: VU

Astragalus boeticus L.

Non-native: N

Distribution: Cc

Remarks: Formerly cultivated and locally naturalised in the area of Barcelona (Willkomm & Lange, 1877; Álvarez & al., 2016).

Astragalus danicus Retz.

Distribution: Pc Ppc Ppe

IUCN category: LC

Astragalus depressus L.

Distribution: Pc Pe Ppc Ppe Cs

IUCN category: LC

Astragalus echinatus Murray

Distribution: Ppc Ae S Cn Cc Cs

IUCN category: LC

Astragalus epiglottis L.

Distribution: Cn Cc

IUCN category: NT

Astragalus glycyphyllos L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Astragalus hamosus* L.Distribution:* Pc Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Astragalus hypoglottis* L. subsp. *hypoglottis* [*A. purpureus* Lam.]***Distribution:* Pc Pe Ppc Ppe Ae Aw Cc Cs*IUCN category:* LC***Astragalus incanus* L. subsp. *incanus****Distribution:* Ppc Ae Aw S Cn Cc Cs*IUCN category:* LC***Astragalus monspessulanus* subsp. *gypsophyllus* Rouy [*A. monspessulanus* subsp. *chlorocyaneus* (Boiss. & Reut.) Rivas Goday & Borja]***Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Astragalus monspessulanus* L. subsp. *monspessulanus****Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Astragalus pelecinus* (L.) Barneby subsp. *pelecinus* [*Biserrula pelecinus* L. subsp. *pelecinus*]***Distribution:* R Cn Cc*IUCN category:* LC***Astragalus penduliflorus* Lam.***Distribution:* Pa Pc*IUCN category:* EN***Astragalus scorpioides* Willd.***Non-native:* C*Distribution:* +R*Remarks:* Reported from Alt Empordà county, between Llers and Hostalets (Sennen, 1912).***Astragalus sempervirens* Lam. [*A. sempervirens* subsp. *catalaunicus* (Braun-Blanq.) M. Laínz; *A. nevadensis* subsp. *catalaunicus* Braun-Blanq.]***Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Remarks:* Pyrenean reports of *A. nevadensis* Boiss. (Font Quer, 1920) are due to confusion with *A. sempervirens*.

Astragalus sesameus L.*Distribution:* Pe Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Astragalus stella*** L.*Distribution:* Pc Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Astragalus tragacantha*** L. [*A. massiliensis* (Mill.) Lam.]*Distribution:* R Cn*IUCN category:* LC***Astragalus turolensis*** Pau*Distribution:* Ppc S*IUCN category:* NT***Bauhinia forficata*** Link subsp. *pruinosa* (Vogel) Fortunato & Wunderlin*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Blanes, Selva (Verloove & Aymerich, 2020). A report of *B. grandiflora* Blanco from the urban area of Barcelona (Casasayas, 1989) probably belongs to *B. forficata*, that is often known as “*B. grandiflora*” in gardening.***Bituminaria bituminosa*** (L.) C.H. Stirt. [*Psoralea bituminosa* L.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Ceratonia siliqua*** L.*Non-native:* I*Distribution:* R Cn Cc Cs*Remarks:* An old introduction widely cultivated. In southern coastal areas this plant is able to colonise natural habitats (open scrub and rocky places); probably casual elsewhere.***Cercis siliquastrum*** L.*Non-native:* N*Distribution:* Ppe Ae Aw O R Cn Cc Cs*Remarks:* Locally naturalised populations exist in Aw (Aymerich, 2013b); probably casual elsewhere.***Cicer arietinum*** L.*Non-native:* C*Distribution:* Pe Ppe O Cn*Remarks:* Widely cultivated and occasionally escaped.

Colutea arborescens* L.Distribution:* ?Pa Pe Cn Cc ?Cs*IUCN category:* DD*Remarks:* Its distribution in northeastern Iberian Peninsula needs to be assessed. Here we provide the areas that correspond to locations indicated by Talavera & Arista (1998). Royo (2006) suggested the presence of *C. arborescens* in Ports massif (Cs). It is unknown if reports from Pa are referable to *C. arborescens* or *C. brevialata*.***Colutea brevialata* Lange [*C. arborescens* subsp. *gallica* Browicz]***Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs*IUCN category:* LC*Remarks:* Usually reported as *C. arborescens* in a broad sense. It is unknown if reports from Pa are referable to *C. brevialata* or *C. arborescens*.***Colutea hispanica* Talavera & Arista [*C. arborescens* subsp. *hispanica* (Talavera & Arista)**

Mateo & M.B. Crespo]

Distribution: S Cs*IUCN category:* LC***Coronilla juncea* L.***Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* Occurrences in Cn and R could be due to accidental introductions.***Coronilla lotoides* W.D.J. Koch [*C. minima* subsp. *lotoides* (W.D.J. Koch) Nyman]***Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Coronilla minima* L. subsp. *minima****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Coronilla repanda* (Poir.) Guss. subsp. *dura* (Cav.) Cout.***Distribution:* Pe*IUCN category:* CR*Remarks:* Reported from a single location in Albera massif (Font & al., 1998).***Coronilla scorpioides* (L.) W.D.J. Koch***Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Coronilla valentina* L. subsp. *glauca* (L.) Batt. [*C. glauca* L.]***Non-native:* I*Distribution:* Ae Aw R Cn Cc Cs

Cytisophyllum sessilifolium (L.) O. Lang*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cytisus arboreus*** (Desf.) DC. subsp. ***catalaunicus*** (Webb) Maire [*Sarothamnus arboreus* (Desf.) Webb subsp. *catalaunicus* (Webb) C. Vicioso]*Distribution:* Pe R Cn*IUCN category:* LC***Cytisus fontanesii*** Spach subsp. ***fontanesii*** [*Genista biflora* (Desf.) DC.]*Distribution:* S Cc Cs*IUCN category:* LC***Cytisus grandiflorus*** (Brot.) DC. [*Sarothamnus grandiflorus* (DC.) Willk.]*Non-native:* C*Distribution:* Pe*Remarks:* Known only from Salines massif, where it was grown for the rehabilitation of roadsides in the 90s (Aymerich, 2017c). It is unknown if this species has become naturalised.***Cytisus heterochrous*** Colmeiro [*Genista patens* DC.; *Teline patens* (DC.) Talavera & P.E. Gibbs]*Distribution:* Ppc Ae Aw Cc Cs*IUCN category:* LC***Cytisus infestus*** (C. Presl) Guss. [*Calicotome infesta* (C. Presl) Guss.; *C. spinosa* subsp. *infesta* (C. Presl) Burnat]*Distribution:* ?Pe R +Cn*IUCN category:* LC*Remarks:* Its presence in Montjuic (Cn) is based upon an old herbarium specimen (Sáez & al., 2010). For its distribution see Aymerich (2017c).***Cytisus lotoides*** Pourr. [*Chamaecytisus supinus* L. var. *gallicus* (A. Kern.) C. Vicioso]*Distribution:* Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC***Cytisus oromediterraneus*** (G. López & C.E. Jarvis) Rivas Mart., T.E. Díaz, Fern. Prieto, Loidi & Penas [*Genista balansae* (Boiss.) Rouy subsp. *europaea* (G. López & C.E. Jarvis) O. Bolòs & Vigo; *Cytisus balansae* subsp. *europaeus* (G. López & C.E. Jarvis) Muñoz Garm.]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC

Cytisus scoparius (L.) Link subsp. ***scoparius*** [*Sarothamnus scoparius* (L.) Wimm. subsp. *scoparius*]

Distribution: Pa [Pc] Pe Ppe O R Cn Cc

IUCN category: LC

Remarks: Its presence in Pc and western Ppe is due to plantations or adventive occurrences.

Cytisus spinosus (L.) Lam. [*Calicotome spinosa* (L.) Link]

Distribution: Pe Cn Cc Cs

IUCN category: LC

Remarks: Occurrences from Pc, Ppc and Ppe (Lloret & al., 2009) are erroneous.

Cytisus striatus (Hill) Rothm.

Non-native: N

Distribution: Pe

Remarks: Locally naturalised in roadsides in Salines massif (Aymerich, 2017c).

Cytisus villosus Pourr. [*Genista triflora* Rouy]

Distribution: Pe Ppe O R Cn Cc

IUCN category: LC

Dorycnopsis gerardii (L.) Boiss. [*Anthyllis gerardii* L.]

Distribution: R Cn

IUCN category: LC

Echinopartum horridum (Vahl.) Rothm. [*Genista horrida* (Vahl) DC.]

Distribution: Pc Ppc

IUCN category: LC

Erinacea anthyllis Link subsp. ***anthyllis***

Distribution: Ppc Ppe Cc Cs

IUCN category: LC

Erythrostemon gilliesii (Hook.) Klotzsch [*Caesalpinia gilliesii* (Hook.) D. Dietr.]

Non-native: C

Distribution: Aw S Cc Cs

Remarks: First report from Aldover, lower Ebre basin (Royo, 2006); later found elsewhere (Gómez-Bellver & al., 2019c; Verloove & al., 2019; Aymerich, 2020).

Ervilia hirsuta (L.) Opiz [*Vicia hirsuta* (L.) Gray]

Distribution: Pa Pc Pe Ppc Ppe Ae S O R Cn Cc Cs

IUCN category: LC

Ervilia monanthos (L.) Opiz [*Ervum monanthos* L.; *Ervilia articulata* (Hornem.) H. Schaefer; *Vicia articulata* Hornem.]

Non-native: N

Distribution: R Cn Cc

Remarks: See Gutermann (2019) for taxonomy. There is no consensus on its native status.

Ervilia sativa Link [*Vicia ervilia* (L.) Willd.]

Non-native: C

Distribution: Ppc Ae Aw R Cn Cc Cs

Remarks: This species was formerly cultivated. It is currently casual or vanished in several areas.

Ervum gracile DC. [*Vicia parviflora* Cav.; *V. tetrasperma* subsp. *gracilis* (Loisel.) Hook]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ervum pubescens DC. [*Vicia pubescens* (DC.) Link; *V. tetrasperma* subsp. *pubescens* Bonnier & Layens]

Distribution: Ae Cn Cc Cs

IUCN category: LC

Ervum tetraspermum L. [*Vicia tetrasperma* (L.) Schreb.]

Distribution: Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Galega officinalis L.

Non-native: N

Distribution: Pe Ppc +Ae +Cn

Remarks: Known only from two recent locations in Cerdanya plain (Aymerich, 2014) and Tremp, Pallars Jussà (J.L. López Retamero in <http://www.herbario.ian-ani.org/>). Reports from other areas date back to the 19th century.

Genista anglica L.

Distribution: Pe Ppe

IUCN category: NT

Genista hispanica L. subsp. *hispanica*

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Genista linifolia L. subsp. *linifolia* [*Teline linifolia* (L.) Webb subsp. *linifolia*]

Distribution: Cn

IUCN category: LC

Genista monspessulana (L.) L.A.S. Johnson [*Teline monspessulana* (L.) K. Koch]

Distribution: Pe R Cn Cc

IUCN category: LC

Genista multicaulis Lam. [*G. cinerea* (Vill.) DC. subsp. *ausetana* O. Bolòs & Vigo; *G. ausetana* (O. Bolòs & Vigo) Talavera]

Distribution: Pc Pe Ppc Ppe Ae Aw O Cn Cc

IUCN category: LC

Remarks: *Genista multicaulis* Lam. is conspecific with *G. ausetana*. This is suggested by the examination of the type material (Talavera, 1999; L. Sáez, pers. obs.). Therefore, *G. multicaulis* is the earlier available name for the plant called *G. ausetana* (Aymerich & Sáez, 2015). This species was also reported from Castelló province, close to the boundary of Cs.

Genista pilosa L.

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn

IUCN category: LC

Genista sagittalis L. [*Chamaespartium sagittale* (L.) P.E. Gibbs subsp. *sagittale*]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn

IUCN category: LC

Genista scorpius (L.) DC.

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its presence in Pa (Font, 1993) requires confirmation.

Genista teretifolia Willk.

Distribution: Ppc

IUCN category: DD

Remarks: Reported from a single location in Serra del Montsec (Sáez & Soriano, 2000). This location represents the eastern limit of its distribution range.

Genista tinctoria L.

Distribution: Pa Pc Pe Ppe ?Aw O R Cn

IUCN category: LC

Remarks: Its presence as a native species in Aw requires confirmation. Two reports from this area are referable to cultivated specimens.

Gleditsia triacanthos L.

Non-native: N

Distribution: Ppe Aw S O R Cn Cc Cs

Remarks: Naturalised populations are scarce, it is generally found as casual.

Glycine max (L.) Merr.*Non-native*: C*Distribution*: Cn*Remarks*: Reported from Vilanova de Sau, Osona (Pérez-Haase & al., 2013).*Glycyrrhiza glabra* L.*Distribution*: [Ae] [Aw] S [O] [Cn] [Cc] Cs*IUCN category*: LC*Remarks*: Populations from the lower basin of Ebre and Segre rivers are probably native; cultivated and locally naturalised elsewhere.*Hedysarum boveanum* Basiner subsp. *europaeum* Guitt. & Kerguelen [*H. confertum* auct.]*Distribution*: Ae Aw S Cn Cc Cs*IUCN category*: LC*Hedysarum coronarium* L.*Non-native*: C*Distribution*: Cn Cc Cs*Hedysarum glomeratum* F. Dietr. [*H. spinosissimum* subsp. *capitatum* (Rouy) Asch. & Graebn.]*Distribution*: Cc Cs*IUCN category*: LC*Hedysarum spinosissimum* L. subsp. *spinosissimum**Distribution*: S +Cn Cc Cs*IUCN category*: LC*Remarks*: Probably extinct in Cn, where only old reports (currently corresponding to highly urbanised areas in Barcelona) are available.*Hippocrepis biflora* Spreng. [*H. unisiliquosa* L. subsp. *biflora* (Spreng.) O. Bolòs & Vigo]*Distribution*: Cn Cc*IUCN category*: LC*Hippocrepis ciliata* Willd. [*H. multisiliquosa* L. subsp. *ciliata* (Willd.) Maire]*Distribution*: Ppc Ae Aw S R Cn Cc Cs*IUCN category*: LC*Hippocrepis commutata* Pau [*H. comosa* subsp. *scabra* (DC.) O. Bolòs & Vigo]*Distribution*: S*IUCN category*: LC

Hippocrepis comosa L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn ?Cs*IUCN category:* LC***Hippocrepis emerus*** (L.) Lassen subsp. ***emerus*** [*Coronilla emerus* L.; *Emerus major* Mill.]*Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Hippocrepis frutescens*** Sennen [*H. comosa* subsp. *scorpioides* (Benth.) O. Bolòs, Vigo, Masalles & Ninot, p.p.]*Distribution:* S ?Cn Cc Cs*IUCN category:* LC***Hippocrepis scorpioides*** Benth. [*H. comosa* subsp. *scorpioides* (Benth.) O. Bolòs, Vigo, Masalles & Ninot, p.p., *H. comosa* subsp. *glauca* p.p.]*Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Laburnum anagyroides*** Medik.*Non-native:* N*Distribution:* Pe Ppe Ae O Cn*Remarks:* A naturalised population is known in upper basin of Llobregat river (Aymerich, 2000); usually rare and sporadic elsewhere.***Lathyrus angulatus*** L.*Distribution:* Pc Ppc O R Cn Cc*IUCN category:* LC***Lathyrus annuus*** L.*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Lathyrus aphaca*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Lathyrus baubini*** Genty [*L. filiformis* subsp. *ensifolius* (Lapeyr.) Gams]*Distribution:* Pa*IUCN category:* VU***Lathyrus cicera*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Lathyrus cirrhosus Ser.*Distribution:* Pc Pe Ppe Cn Cc*IUCN category:* LC***Lathyrus clymenum*** L.*Distribution:* Ppc Aw O Cn Cc Cs*IUCN category:* LC***Lathyrus filiformis*** (Lam.) J. Gay*Distribution:* Ppc Ppe Ae Aw Cn Cc Cs*IUCN category:* LC***Lathyrus hirsutus*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Lathyrus inconspicuus*** L.*Distribution:* Ppc Aw O R Cn Cc Cs*IUCN category:* LC***Lathyrus latifolius*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Lathyrus linifolius*** (Reichard) Bässler*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cc*IUCN category:* LC***Lathyrus niger*** (L.) Bernh.*Distribution:* Pa Pc Pe Ppc Ppe O Cn Cc*IUCN category:* LC***Lathyrus nissolia*** L.*Distribution:* Pc Ppe R Cn Cc Cs*IUCN category:* LC***Lathyrus occidentalis*** (Fisch. & C.A. Mey.) Fritsch [*L. laevigatus* (Waldst. & Kit.) Gren. subsp. *occidentalis* (Fisch. & C.A. Mey.) Breistr.]*Distribution:* Pa Pc Pe Ppe O*IUCN category:* LC***Lathyrus ochrus*** (L.) DC.*Distribution:* R Cn Cc*IUCN category:* LC

Lathyrus odoratus L.*Non-native*: C*Distribution*: Aw R Cn Cc Cs*Lathyrus oleraceus* subsp. *biflorus* (Raf.) H. Schaefer, Coulot & Rabaute [*Pisum sativum* subsp. *elatius* (M. Bieb.) Asch. & Graebn.]*Distribution*: Ppc R Cn Cc Cs*IUCN category*: LC*Lathyrus oleraceus* Lam. subsp. *oleraceus* [*Pisum sativum* L. subsp. *sativum*]*Non-native*: C*Distribution*: Pe Ppe R*Remarks*: Widely cultivated, sometimes escaped.*Lathyrus pannonicus* (Jacq.) Garcke*Distribution*: Ppc Ppe*IUCN category*: LC*Remarks*: Pyrenean and Iberian populations were usually referred to subsp. *longestipulatus* M. Lainz, although some specimens are morphologically close to subsp. *asphodeloides* (Gouan) Bassler (Southern France). Molecular data (Schlee & al., 2011) do not support the splitting of *L. pannonicus* into subspecies.*Lathyrus pratensis* L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC*Lathyrus sativus* L.*Non-native*: C*Distribution*: Ppe Aw Cn Cc*Remarks*: Formerly cultivated, sometimes escaped; not observed since 1968.*Lathyrus setifolius* L.*Distribution*: Ppc Ppe Aw R Cn Cc Cs*IUCN category*: LC*Lathyrus sphaericus* Retz.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC*Lathyrus sylvestris* L. [*L. sylvestris* subsp. *pyrenaicus* (Jord.) O. Bolos & Vigo]*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC*Remarks*: Reports from Cn are erroneous.

Lathyrus tingitanus L.*Non-native:* I*Distribution:* R Cn Cc Cs*Lathyrus tuberosus* L.*Non-native:* N*Distribution:* Pe Ppe Ae O R Cn Cs*Remarks:* This species usually constitutes unstable populations in cultivated fields and waysides. It is relatively common and persistent only in Cerdanya plain (Pe).*Lathyrus vernus* (L.) Bernh. subsp. *vernus**Distribution:* Pa Pe Ppc Ppe*IUCN category:* LC*Leucaena leucocephala* (Lam.) de Wit subsp. *glabrata* (Rose) Zárate*Non-native:* N*Distribution:* Cn Cc Cs*Remarks:* The first reports were provided by Casasayas (1989); later found elsewhere (Sanz & al., 2004a; Gómez-Bellver & al. (2019a; Balada & Arasa, 2019; Verloove & al., 2019; Senar & Cardero, 2019; Aymerich, 2020).*Lotus alpinus* (DC.) Ramond [*L. corniculatus* subsp. *alpinus* (DC.) Rothm.]*Distribution:* Pa Pe Ppc Ppe*IUCN category:* LC*Lotus angustissimus* L.*Distribution:* Pa O R Cn Cc*IUCN category:* LC*Lotus conimbricensis* Brot.*Distribution:* R Cn*IUCN category:* VU*Lotus corniculatus* L.*Distribution:* Pa Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Specimens referable to var. *sativus* Hyl. were widely planted on road slopes, so these plants could have been naturalised.*Lotus creticus* L.*Non-native:* N*Distribution:* Cc Cs*Remarks:* Used in coastal dune restoration in the Deltas of Ebre and Llobregat rivers.

Lotus cytisoides L. [*L. creticus* subsp. *cytisoides* (L.) Arcang.]

Distribution: Cc

IUCN category: CR

Remarks: It was reported from few coastal locations (Batalla & Masclans, 1950; Bolòs & Vigo, 1984b; Sáez & al., 2010). *Lotus cytisoides* was not found since the middle of the 20th century and has probably become extinct in some locations due to coastal urban development.

Lotus delortii F.W. Schultz [*L. corniculatus* subsp. *delortii* (F.W. Schultz) O. Bolòs & Vigo]

Distribution: Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs

IUCN category: LC

Lotus dorycnium L. [*Dorycnium pentaphyllum* Scop.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lotus edulis L.

Distribution: R Cn Cc

IUCN category: LC

Lotus herbaceus (Vill.) Jauzein subsp. *gracilis* (Jord.) Jauzein [*Dorycnium gracile* Jord.; *D. pentaphyllum* Scop. subsp. *gracile* (Jord.) Rouy]

Distribution: S R Cc Cs

IUCN category: LC

Lotus hirsutus L. [*Dorycnium hirsutum* (L.) Ser.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lotus hispidus DC. [*L. angustissimus* subsp. *suaveolens* (Pers.) O. Bolòs & Vigo]

Distribution: Ppe S R Cn

IUCN category: LC

Lotus maritimus L. [*Tetragonolobus maritimus* (L.) Rothm.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lotus ornithopodioides L.

Distribution: R Cn Cc

IUCN category: LC

Remarks: Also reported from northern Castelló province, close to the boundary of Cs.

Lotus parviflorus Desf.*Distribution:* Cn*IUCN category:* VU*Remarks:* Known only from a small area in Serra de Cadiretes (Sáez & al., 2010).***Lotus pedunculatus*** Cav.*Distribution:* Pa Pc Pe Ppe Cn ?Cs*IUCN category:* LC*Remarks:* Its presence in Cs requires confirmation (Royo, 2006).***Lotus preslii*** Ten. [*L. corniculatus* subsp. *preslii* (Ten.) P. Fourn.]*Distribution:* S R Cc*IUCN category:* LC***Lotus rectus*** L. [*Dorycnium rectum* (L.) Ser.]*Distribution:* Ppc Ppe Aw S R Cn Cc Cs*IUCN category:* LC***Lotus tenuis*** Willd. [*L. glaber* Mill.; *L. corniculatus* subsp. *tenuifolius* (L.) P. Fourn.]*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Lupinus albus*** L.*Non-native:* C*Distribution:* +O +R Cn +Cc*Remarks:* Formerly cultivated in vegetable gardens, sometimes escaped. Most records date back to the second half of the 19th century or the first half of the 20th century; recently found in Guilleries massif (Gesti & Vilar, unpubl. data).***Lupinus angustifolius*** L. [*L. angustifolius* subsp. *reticulatus* (Desv.) Arcang.]*Distribution:* Aw R Cn Cc*IUCN category:* LC*Remarks:* According to Castroviejo & Pascual (1999) plants from coastal habitats called *L. angustifolius* subsp. *reticulatus* are not worthy of taxonomic recognition.***Lupinus ×regalis*** Russell [*L. arboreus* Sims × *L. polyphyllus* Lindl.]*Non-native:* C*Distribution:* Pe ?O*Remarks:* See Aymerich (2019). A report of *L. polyphyllus* from Serra del Moixeró (Farràs & al., 1981) should be referred to *L. ×regalis*. Oliver (2019) listed this hybrid for Garrotxa.***Medicago arabica*** (L.) Huds.*Distribution:* Pe Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Medicago arborea L.*Non-native:* C*Distribution:* R Cn Cc***Medicago ciliaris*** (L.) All.*Non-native:* C*Distribution:* S ?R*Remarks:* Probably adventive in cultivated areas close to Lleida (Casellas, 1962). Reports from R are erroneous or doubtful.***Medicago coronata*** (L.) Bartal.*Distribution:* S Cc Cs*IUCN category:* LC***Medicago disciformis*** DC.*Distribution:* ?R Cn Cc*IUCN category:* NT*Remarks:* Known on the basis of old reports from Barcelona and its surroundings. Its presence in R requires confirmation.***Medicago doliata*** Carmign.*Distribution:* Aw S O R Cn Cc Cs*IUCN category:* LC***Medicago falcata*** L. [*M. sativa* subsp. *falcata* (L.) Arcang.]*Non-native:* N*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Its non-native status is uncertain.***Medicago hybrida*** (Pourr.) Trautv.*Distribution:* Pc*IUCN category:* DD*Remarks:* Reported on the basis of a single specimen collected in Vall d'Espot (see Sáez & al., 2010).***Medicago littoralis*** Loisel.*Distribution:* Ppc Aw S O R Cn Cc Cs*IUCN category:* LC***Medicago lupulina*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Medicago marina L.Distribution: R Cn Cc Cs

IUCN category: LC

Medicago minima (L.) L.Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Medicago monspeliaca (L.) Trautv. [*Trigonella monspeliaca* L.]Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Medicago murex Willd.Distribution: R Cn

IUCN category: LC

Medicago orbicularis (L.) Bartal.Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Medicago polyceratia (L.) Trautv. [*Trigonella polyceratia* L.]Distribution: Pc Pe Ppc Aw S O Cn Cc Cs

IUCN category: LC

Medicago polymorpha L. [*M. polymorpha* subsp. *microcarpa* (Urb.) O. Bolòs, Vigo, Masalles & Ninot]Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Medicago praecox DC.Distribution: R Cn

IUCN category: LC

Medicago rigidula (L.) All.Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Medicago sativa L. subsp. *sativa*

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Widely cultivated and locally naturalised in waysides and waste fields.

Medicago scutellata (L.) Mill.Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Medicago secundiflora Durieu*Distribution:* Cc Cs*IUCN category:* VU*Remarks:* Known only from two locations (Sáez & al., 2010).***Medicago suffruticosa*** DC. [*M. suffruticosa* subsp. *leiocarpa* (Bernh.) Urb.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw R Cn Cc Cs*IUCN category:* LC*Remarks:* Plants called subsp. *suffruticosa* can be found in the Pyrenees and its surroundings, whereas populations from mountain areas in Cc and Cs were referred to subsp. *leiocarpa*. Nevertheless, the splitting of *M. suffruticosa* into two subspecies lacks a sound taxonomic basis (see Sales & Hedge, 2000a).***Medicago truncatula*** Gaertn.*Distribution:* Ppc Ppe Aw S O R Cn Cc Cs*IUCN category:* LC***Medicago turbinata*** (L.) All.*Distribution:* Cn Cc*IUCN category:* LC***Medicago ×casellasii*** P. Monts. [*M. littoralis* × *M. praecox*]*Distribution:* Cn***Medicago ×varia*** Martyn [*M. sativa* subsp. *varia* (Martyn) Arcang., *M. sativa* subsp. *varia* (Martyn) O. Bolos & Vigo; *M. falcata* × *M. sativa*]*Non-native:* C*Distribution:* R Cn Cs***Melilotus albus*** Medik.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Melilotus altissimus*** Thuill.*Distribution:* Pc Pe Ppe Ae Aw S O R Cn Cc*IUCN category:* LC***Melilotus elegans*** Ser.*Distribution:* Ppc R Cn Cc Cs*IUCN category:* LC***Melilotus indicus*** (L.) All.*Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its presence in Pa (Coste & Soulié, 1913) requires confirmation.

Melilotus officinalis (L.) Pall.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Melilotus segetalis*** (Brot.) Ser.*Distribution:* R ?Cc*IUCN category:* VU*Remarks:* Reported from Aiguamolls de l'Empordà; its presence in the Llobregat Delta requires confirmation (Gutiérrez, 2016).***Melilotus siculus*** (Turra) B.D. Jacks. [*M. messanensis* (L.) All.]*Distribution:* R Cc Cs*IUCN category:* NT***Melilotus spicatus*** (Sm.) Breistr. [*M. neapolitanus* auct., non Ten.]*Distribution:* Ppc Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Melilotus sulcatus*** Desf.*Distribution:* Pc Ppc Ae Aw S R Cn Cc Cs*IUCN category:* LC***Onobrychis argentea*** Boiss. subsp. ***hispanica*** (Sirj.) P.W. Ball [*O. conferta* (Desf.) Desv. subsp. *hispanica* (Sirj.) Guitt. & Kerguelen]*Distribution:* Ppc Ppe S*IUCN category:* LC***Onobrychis caput-galli*** (L.) Lam.*Distribution:* Ae O R Cn Cc*IUCN category:* LC***Onobrychis saxatilis*** (L.) Lam.*Distribution:* Pc Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Onobrychis supina*** (Vill.) DC.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* *Onobrychis pyrenaica* (Sennen) Sirj., an alleged Pyrenean endemic (loc. class.: Rasos de Peguera), was recognised as a separate species. However, it is poorly differentiated morphologically to warrant taxonomic recognition (Bolòs & Vigo, 1984). Further research is needed to resolve its taxonomic status.

Onobrychis viciifolia Scop.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Widely cultivated and often casual in the vicinity of cultivated fields; rarely constitutes naturalised populations.***Ononis alopecuroides*** L. subsp. *alopecuroides**Distribution:* Cs*IUCN category:* DD*Remarks:* A collection from Godall (Montsià) in 1996 (Molero & al., 1997) is the only known occurrence in our area.***Ononis aragonensis*** Asso*Distribution:* Pc Ppc Ppe Cs*IUCN category:* LC***Ononis cristata*** Mill.*Distribution:* Pc Pe Ppc Ppe*IUCN category:* LC***Ononis fruticosa*** L. subsp. *fruticosa**Distribution:* Pc Ppc Ppe Ae Aw Cn*IUCN category:* LC***Ononis fruticosa*** subsp. *microphylla* (DC.) O. Bolòs, Vigo, Masalles & Ninot*Distribution:* Cs*IUCN category:* LC*Remarks:* The taxonomic value of this subspecies, closely related to typical *O. fruticosa*, is unclear.***Ononis minutissima*** L.*Distribution:* Pa Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Ononis mitissima*** L.*Non-native:* N*Distribution:* Cn Cc*Remarks:* Known from two locations in Barcelona metropolitan area: Montjuïc (Pyke, 2009) and Gavà (González & al., 2016).

***Ononis natrix* L.**

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: A considerable variation in the habit and the size of the leaflets and the flowers is found within this species. Pyrenean plants with procumbent herbaceous stems and small flowers and leaflets were called *O. natrix* var. *pyrenaica* (Willk. & Costa) O. Bolòs & Vigo. However, there seems to be a continuous series in character-combinations connecting var. *pyrenaica* with typical *O. natrix*. Moreover, plants with small flowers and leaflets are also found in non-Pyrenean areas. Devesa & López González (1997) subsumed *O. natrix* var. *pyrenaica* under typical *O. natrix*.

***Ononis ornithopodioides* L.**

Distribution: Cc

IUCN category: VU

Remarks: Known from a small area in Serra de Montsant (Pascual, 1997).

***Ononis pubescens* L.**

Distribution: ?Aw R Cn Cc Cs

IUCN category: LC

Remarks: Its presence in Aw requires confirmation.

Ononis pusilla* L. subsp. *pusilla

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

***Ononis ramosissima* Desf. [*O. natrix* subsp. *ramosissima* (Desf.) Batt. & Trab.]**

Distribution: R Cn Cc Cs

IUCN category: LC

***Ononis reclinata* subsp. *mollis* (Savi) Bég. [*O. mollis* Savi]**

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: See comments under *O. reclinata*.

Ononis reclinata* L. subsp. *reclinata

Distribution: Cn Cc Cs

IUCN category: LC

Remarks: Its distribution is poorly known. This subspecies was listed for Barcelona and Tarragona provinces (Devesa, 2000). According to Molero & al. (1997) most reports of *O. reclinata* (in a broad sense) are referable to subsp. *mollis*.

***Ononis rotundifolia* L.**

Distribution: Pa Pc Pe Ppc Ppe Cn Cc

IUCN category: LC

Remarks: Also reported from northern Castelló province, close to the boundary of Cs.

Ononis spinosa* L.Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Remarks: Within *O. spinosa* several subspecies connected by intermediates (see Bolòs & Vigo, 1984) have been reported in the studied area: subsp. *antiquorum* (L.) Arcang. was traditionally reported from low altitude areas; however Devesa (2000) only listed this taxon from Girona province. *Ononis spinosa* subsp. *australis* (Sirj.) Greuter & Burdet is probably widely distributed, mainly in low altitude areas, whereas typical *O. spinosa* is mainly found in mountain areas of northern Catalonia.

Ononis striata* GouanDistribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Ononis tridentata* subsp. *angustifolia* (Lange) Devesa & G. López [*O. tridentata* var. *edentula* Webb]***Distribution:* Pc Ppc Ppe*IUCN category:* LC***Ononis tridentata* L. subsp. *tridentata****Distribution:* Ppe Ae Aw S Cc Cs*IUCN category:* LC***Ononis viscosa* L. subsp. *breviflora* (DC.) Nyman***Distribution:* Aw S Cn Cc Cs*IUCN category:* LC***Ornithopus compressus* L.***Distribution:* Pe Ae O R Cn Cc*IUCN category:* LC***Ornithopus perpussillus* L.***Distribution:* Pa Pe O R Cn*IUCN category:* LC***Ornithopus pinnatus* (Mill.) Druce***Distribution:* R Cn Cc*IUCN category:* LC***Ornithopus sativus* Brot. subsp. *sativus****Non-native:* C

Remarks: Formerly cultivated. Costa (1877) reported this species as subsontaneous without precise location.

Oxytropis amethystea Arv.-Touv. [*O. neglecta* subsp. *occidentalis* (Asch. & Graebn.) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Pe Ppe

IUCN category: LC

Remarks: Reports for Pc are based on confusion with *O. neglecta*.

Oxytropis campestris (L.) DC. subsp. *campestris*

Distribution: Pc Pe Ppe

IUCN category: LC

Remarks: Some populations from Pc with blue corollas were called *O. campestris* subsp. *azurea* Carrillo & Ninot. According to Laínz (1999) these plants are not worthy of taxonomic recognition.

Oxytropis halleri Bunge subsp. *halleri*

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Oxytropis neglecta Ten. [*O. pyrenaica* Godr. & Gren.]

Distribution: Pa Pc

IUCN category: LC

Remarks: Reports from Ppe are based on confusion with *O. amethystea*.

Oxytropis lapponica (Wahlenb.) Gay

Distribution: Pc

IUCN category: VU

Remarks: Known only from few locations in Boí valley (Carrillo & Ninot, 1992a; Sáez & al., 2010).

Paraserianthes lophantha (Willd.) I.C. Nielsen [*Acacia lophantha* Willd.]

Non-native: C

Distribution: Cn Cc

Remarks: Reported from Montjuïc, Cambrils and Mont-roig del Camp (Gómez-Bellver & al., 2019c; Verloove & al., 2019).

Parkinsonia aculeata L.

Non-native: N

Distribution: Cn Cc Cs

Remarks: Apparently in the process of local naturalisation on the southern coast (Casasayas, 1989; Sanz-Elorza & al., 2004).

Phaseolus vulgaris L.

Non-native: C

Distribution: Pe Ppe Cn Cs

Remarks: Widely cultivated, occasionally escaped.

Retama monosperma (L.) Boiss.*Non-native:* N*Distribution:* Aw R Cn Cc Cs*Remarks:* Cultivated for ornament and sometimes grown for the rehabilitation of roadsides. Often casual, in some places it is locally naturalised.***Retama sphaerocarpa*** (L.) Boiss.*Distribution:* Ppc [Ppe] [Aw] S [Cn] Cc Cs*IUCN category:* LC***Robinia pseudoacacia*** L.*Non-native:* I*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Robinia viscosa*** Vent.*Non-native:* C*Distribution:* Ae*Remarks:* Reported from suburban areas of Berga (Aymerich & Sáez, 2021c).***Scorpiurus subvillosus*** L. [*S. muricatus* L. subsp. *subvillosus* (L.) Thell.]*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Scorpiurus sulcatus*** L. [*S. muricatus* L. subsp. *sulcatus* (L.) Thell.]*Distribution:* Cn Cc Cs*IUCN category:* LC***Securigera varia*** (L.) Lassen [*Coronilla varia* L.]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC***Senna corymbosa*** (Lam.) H.S. Irwin & Barneby [*Cassia corymbosa* Lam.]*Non-native:* C*Distribution:* Cn Cs*Remarks:* Reported from Montsià county (Royo, 2006); recently also found in Blanes, Selva (Verloove & Aymerich, 2020).***Senna obtusifolia*** (L.) H.S. Irwin & Barneby [*Cassia obtusifolia* L.]*Non-native:* C*Distribution:* S*Remarks:* Known from a single location in a cultivated field in Lleida plain (Recasens & Conesa, 1995).

Sesbania herbacea (Mill.) McVaugh [*S. exaltata* (Raf.) Cory]

Non-native: C

Distribution: S

Remarks: Known from a single location in a cultivated field in Lleida plain (Recasens & Conesa, 1995).

Spartium junceum L.

Distribution: [Pc] [Pe] [Ppc] [Ppe] [Ae] [Aw] [S] O R Cn Cc [Cs]

IUCN category: LC

Remarks: Its native status is unclear. This shrub is extensively grown for the rehabilitation of roadsides. It is probably only native in northern coastal areas; naturalised elsewhere.

Styphnolobium japonicum (L.) Schott [*Sophora japonica* L.]

Non-native: C

Distribution: Aw Cn

Remarks: Cultivated as ornamental, occasionally escaped near gardens.

Tara spinosa (Molina) Britton & Rose [*Caesalpinia spinosa* (Molina) Kuntze]

Non-native: C

Distribution: Cn

Remarks: Reported from Montjuïc in Barcelona urban area (Gómez-Bellver & al., 2019c).

Tipuana tipu (Benth.) Kuntze

Non-native: C

Distribution: Cn Cc

Remarks: Cultivated as ornamental, occasionally escaped. See Andreu & al. (2012), Gómez-Bellver & al. (2019c) and Verloove & al. (2019) for its distribution.

Trifolium alexandrinum L.

Non-native: C

Distribution: O Cn Cc Cs

Remarks: This species was formerly cultivated in coastal areas. It has become a rare species and its main populations are found in the Ebre Delta and its surroundings.

Trifolium alpestre L.

Distribution: Ppc

IUCN category: LC

Remarks: The occurrence of this species in the Iberian Peninsula was confirmed by Pérez-Haase & al. (2016).

Trifolium alpinum L.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Trifolium angustifolium L.*Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Trifolium arvense*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Trifolium aureum*** Pollich*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Trifolium badium*** Schreb.*Distribution:* Pa Pc Pe*IUCN category:* LC***Trifolium bocconeii*** Savi*Distribution:* R Cn Cc*IUCN category:* LC*Remarks:* The last confirmed report for Cc goes back to 1876 (Molero & al., 2006).***Trifolium campestre*** Schreb.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Trifolium cherleri*** L.*Distribution:* Pe R Cn Cc*IUCN category:* LC***Trifolium diffusum*** Ehrh.*Distribution:* Pc ?Ppe ?R Cn*IUCN category:* VU*Remarks:* Its presence in Ppe and R requires confirmation. It was also reported from the northern slope of Albera massif, in French territory, close to Pe boundary.***Trifolium dubium*** Sibth.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC***Trifolium fragiferum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Trifolium glomeratum* L.Distribution:* Pa Pc Pe Ppc Ppe O R Cn Cc Cs*IUCN category:* LC***Trifolium hirtum* All.***Distribution:* Pc Pe R Cn Cc*IUCN category:* LC***Trifolium hybridum* L.***Distribution:* Pc Pe*IUCN category:* NT*Remarks:* Almost restricted to Cerdanya plain. Most populations correspond to subsp. *hybridum* but some are referable to subsp. *elegans* (Savi) Asch. & Graebn. [*T. hybridum* var. *elegans* (Savi) Boiss.]. This species is probably adventive in Pallars Sobirà (P. Aymerich, unpubl. data.).***Trifolium incarnatum* L. subsp. *incarnatum****Non-native:* N*Distribution:* Pc Pe Ppc Ppe O R Cn Cc*Remarks:* Cultivated and sometimes locally naturalised. It is becoming scarce because its cultivation is declining.***Trifolium incarnatum* subsp. *molineri* (Hornem.) Syme***Distribution:* ?Ppc R Cn*IUCN category:* LC*Remarks:* Further study is required to resolve its taxonomic status. This subspecies is usually considered as native, unlike subsp. *incarnatum*.***Trifolium lappaceum* L.***Distribution:* Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Trifolium ligusticum* Loisel.***Distribution:* R Cn*IUCN category:* LC***Trifolium medium* L. subsp. *medium****Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC***Trifolium micranthum* Viv.***Distribution:* O R Cn*IUCN category:* LC

Trifolium montanum* L.Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cc*IUCN category:* LC*Remarks:* There is no available evidence on the presence of *T. montanum* var. *gayanum* Gren. [*T. montanum* subsp. *gayanum* (Gren.) O. Bolòs & Vigo] in our area.***Trifolium nigrescens* Viv. subsp. *nigrescens****Distribution:* Ppe Ae O R Cn*IUCN category:* LC***Trifolium obscurum* Savi***Distribution:* +Cc*IUCN category:* RE*Remarks:* Reported by Bolòs (1950) based on herbarium specimens collected by F. Sennen in the Llobregat Delta; see also Aymerich & Sáez (2021).***Trifolium ochroleucon* Huds.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Trifolium ornithopodioides* L.***Distribution:* R Cn Cc*IUCN category:* LC***Trifolium pallescens* Schreb.***Distribution:* Pa Pc Pe*IUCN category:* LC***Trifolium patens* Schreb.***Distribution:* Pa Pe R Cn*IUCN category:* LC***Trifolium pratense* L. subsp. *pratense****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Trifolium repens* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Trifolium resupinatum* L.***Distribution:* Ae S O Cn Cc Cs*IUCN category:* LC

Trifolium retusum L.*Distribution:* Pa Pc Pe Cc*IUCN category:* LC***Trifolium rubens*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC***Trifolium scabrum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Trifolium spadiceum*** L.*Distribution:* Pa Pc Pe*IUCN category:* LC***Trifolium spumosum*** L.*Distribution:* ?Cn +Cc*IUCN category:* DD*Remarks:* Reports from Cc (Montserrat) and Cn (Tordera river) are based upon old reports (see Muñoz & Devesa, 1988; Cadevall, 1919); these occurrences are probably adventive.***Trifolium squamosum*** L. [*T. squamosum* subsp. *xatardii* (DC.) O. Bolòs & Vigo]*Distribution:* R Cn*IUCN category:* LC*Remarks:* Plants referred to subsp. *xatardii* (DC.) O. Bolòs & Vigo [*T. xatardii* DC.] were reported from Cap de Creus Peninsula (Franquesa, 1995).***Trifolium stellatum*** L.*Distribution:* Pe Ppe O Cn Cc Cs*IUCN category:* LC*Remarks:* Adventive or unstable populations in Pe, Ppe and O.***Trifolium striatum*** L. subsp. *brevidens* (Lange) Muñoz Rodr.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Trifolium strictum*** L. subsp. *strictum**Distribution:* Pe Ae R Cn Cc*IUCN category:* LC

Trifolium suaveolens Willd. [*T. resupinatum* subsp. *suaveolens* (Willd.) Ponert]

Non-native: C

Distribution: Aw Cn

Remarks: Cultivated and escaped in Caldes de Malavella, Selva (Mercadal, 2019) and L'Espunyola, Berguedà (Aymerich & Sáez, 2021c).

Trifolium subterraneum L. subsp. *subterraneum*

Distribution: Pa O R Cn Cc ?Cs

IUCN category: LC

Remarks: Its presence in Cs requires confirmation.

Trifolium suffocatum L.

Distribution: R Cn Cc

IUCN category: LC

Trifolium sylvaticum Loisel.

Distribution: Pa Pc Pe Ppe R Cn Cc

IUCN category: LC

Trifolium thalii Vill.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Trifolium tomentosum L.

Distribution: Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Trifolium vesiculosum Savi

Non-native: C

Distribution: R Cn ?Cc

Remarks: Confirmed for the basal zone of the Albera massif (J. Font in floracatalana.net, 2017) and Selva county (Mercadal, 2019). Colmeiro (1846) and Nogués (1923) reported *T. vesiculosum* from Barcelona and Vallès, respectively; however, these reports have not been confirmed. Muñoz & Devesa (1988) reported *T. vesiculosum* on the basis of an old herbarium specimen collected by Rivas Mateos in Llobregat river, close to Montserrat (Muñoz & Devesa, 1988), which was previously identified as *T. cernuum* Brot.

Trigonella esculenta Willd.

Non-native: C

Distribution: Cn

Remarks: Reported as casual from Santa Coloma de Farners (Selva) by Gesti (2020).

Trigonella foenum-graecum L.*Non-native:* C*Distribution:* Ppc Ae Aw O R Cn Cc Cs*Remarks:* Formerly cultivated and sometimes casual; it is currently very rare.*Trigonella gladiata* M. Bieb.*Distribution:* Ae Aw S R Cn Cc Cs*IUCN category:* LC*Trigonella procumbens* (Besser) Rchb. [*T. caerulea* (L.) Ser. subsp. *procumbens* (Besser) Vassilcz.]*Non-native:* C*Distribution:* +Cn*Remarks:* A collection from Terrassa (Vallès) in 1907 (Cadevall, 1919) is the only known occurrence in our area.*Tripodion tetraphyllum* (L.) Fourr. [*Anthyllis tetraphylla* L.]*Distribution:* O R Cn Cc Cs*IUCN category:* LC*Ulex europaeus* L.*Non-native:* N*Distribution:* ?Pa Cn*Remarks:* Reported by Coste & Soulié (1913) from Pa, as a native species. However, this old report requires confirmation. The plants occurring in Montseny (Cn) are of alien origin and their naturalisation probably took place in the late 20th century. Bolòs & Vigo (1979; 1984b) referred the plants from Montseny to subsp. *latebractectus* (Mariz) Rothm. However, Cubas (1999) listed for our area *U. europaeus* subsp. *europaeus*. The subspecific attribution of the plants from Montseny remains uncertain. Occurrences of *U. europaeus* in Gavarres massif (Cn) are probably due to roadside restoration.*Ulex parviflorus* Pourr. subsp. *parviflorus**Distribution:* Pe Ae Aw R Cn Cc Cs*IUCN category:* LC*Vachellia caven* (Molina) Seigler & Ebinger [*Acacia caven* (Molina) Molina]*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Montjuïc, in Barcelona urban area (Gómez-Bellver & al., 2019c).*Vachellia farnesiana* (L.) Wight & Arn. [*Acacia farnesiana* (L.) Willd.]*Non-native:* C*Distribution:* Cn Cs

Vachellia karroo (Hayne) Banfi & Galasso [*Acacia karroo* Hayne]

Non-native: N

Distribution: Cn Cs

Remarks: Reported from suburban areas of Barcelona where its occurrence is known since early 20th century (Pyke, 2008b); recently found in Alcanar, Montsià (Senar & Cardero, 2019).

Vicia amphicarpa L. [*V. sativa* subsp. *amphicarpa* (Dorthes) Asch.]

Distribution: Ppc Aw S O R Cn Cc Cs

IUCN category: LC

Vicia angustifolia L. [*V. sativa* subsp. *nigra* (L.) Ehrh.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Vicia argentea Lapeyr. [*V. canescens* Labill. subsp. *argentea* (Lapeyr.) O. Bolòs & Vigo]

Distribution: Pc

IUCN category: VU

Remarks: Known only from Montorroio peak, Pallars (Guardiola & al., 2009b; Sáez & al., 2010)

Vicia benghalensis L.

Distribution: Pe Ppe O R Cn Cc Cs

IUCN category: LC

Vicia bithynica (L.) L.

Distribution: Pa Ppe O R Cn Cc

IUCN category: LC

Vicia cordata Hoppe [*V. sativa* subsp. *cordata* (Hoppe) Batt.]

Distribution: Ppc S Cn Cc Cs

IUCN category: LC

Remarks: Probably overlooked as a result of confusion with *V. sativa* in a broad sense.

Vicia cracca L.

Distribution: Pa Pc Pe Ppe ?Aw Cn ?Cc

IUCN category: LC

Remarks: Its presence in Aw and Cc requires confirmation. Plants from these areas are morphologically intermediate between *V. tenuifolia* and *V. cracca*. These intermediate populations are also common in mountain areas of southern and eastern Iberian Peninsula (Romero, 1999).

Vicia dasycarpa Ten. [*V. villosa* Roth subsp. *varia* (Host.) Corb.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Vicia disperma DC.*Distribution:* Pe Ppe R Cn Cc Cs*IUCN category:* LC***Vicia faba*** L.*Non-native:* C*Distribution:* Pe Ppc Ppe Ae S R Cn Cc Cs*Remarks:* Widely cultivated, occasionally escaped.***Vicia hybrida*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Vicia incana*** Gouan [*V. cracca* subsp. *incana* (Gouan) Rouy; *V. incana* subsp. *gerardii* Gaudin]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn*IUCN category:* LC***Vicia lathyroides*** L.*Distribution:* Pc Pe Ppc Ppe O R Cn Cc Cs*IUCN category:* LC***Vicia lens*** subsp. ***lamottei*** (Czefr.) H. Schaefer, Coulot & Rabaute [*Lens lamottei* Czefr.; *L. culinaris* var. *tenorii* (Lamotte) Briq.]*Distribution:* Cn*IUCN category:* RE*Remarks:* A collection from Santa Creu d'Olorda, close to Barcelona, in early 20th century (Castroviejo & Pascual, 1995) is the only confirmed occurrence in our area.***Vicia lens*** (L.) Coss. & Germ. subsp. ***lens*** [*Lens culinaris* Medik.]*Non-native:* C*Distribution:* Aw Cn Cc*Remarks:* Cultivated in vegetable gardens, sometimes escaped.***Vicia lutea*** L. subsp. ***lutea****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Vicia macrocarpa*** (Moris) Bertol. [*V. sativa* subsp. *macrocarpa* (Moris) Arcang.]*Non-native:* N*Distribution:* Cn*Remarks:* Its non-native status is uncertain; its distribution in coastal areas is probably more widespread than currently documented.

Vicia melanops Sibth. & Sm.*Non-native:* N*Distribution:* Cc*Remarks:* Only known from Prades mountains. There is no consensus on its non-native status.***Vicia monantha*** Retz. subsp. ***calcarata*** (Desf.) Romero Zarco [*V. villosa* Rothm. subsp. *triflora* (Ten.) O. Bolòs, Vigo, Masalles & Ninot; *V. villosa* subsp. *monantha* O. Bolòs & Vigo]*Distribution:* Aw S R Cn Cc Cs*IUCN category:* LC***Vicia narbonensis*** L.*Non-native:* N*Distribution:* Ae Aw O R Cn Cc*Remarks:* Its non-native status is uncertain. Its presence is probably the result of an old introduction.***Vicia nigricans*** (M. Bieb.) Coss. & Germ. [*Lens nigricans* (M. Bieb.) Godr.; *L. culinaris* Medik. subsp. *nigricans* (M. Bieb.) Thell.]*Distribution:* Pc Ppc Ppe Cn Cc Cs*IUCN category:* LC***Vicia onobrychioides*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw Cn Cc Cs*IUCN category:* LC***Vicia orobus*** DC.*Distribution:* Pa Pc Pe*IUCN category:* LC***Vicia pannonica*** Crantz subsp. ***pannonica****Non-native:* C*Distribution:* Pe Ae R Cc***Vicia pannonica*** Crantz subsp. ***striata*** (M. Bieb.) Nyman [*V. pannonica* subsp. *purpurascens* (DC.) Arcang.]*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw Cn Cc Cs***Vicia peregrina*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain.

Vicia pseudocracca Bertol. [*V. villosa* subsp. *pseudocracca* (Berol.) Rouy; *V. villosa* subsp. *ambigua* (Guss.) Kerguelen]

Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Vicia pyrenaica Pourr.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Vicia sativa L.

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Vicia saxatilis (Vent.) Tropea [*Lathyrus saxatilis* (Vent.) Vis.]

Distribution: Ppc R Cn Cc Cs

IUCN category: LC

Vicia segetalis Thuill. [*V. angustifolia* subsp. *segetalis* (Thuill.) Corb.; *V. sativa* subsp. *segetalis* (Thuill.) Dostál]

Distribution: Pa Pc Pe Ppc Ppe ?S Ae Aw O R Cn Cc Cs

IUCN category: LC

Vicia sepium L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Vicia serratifolia Jacq. [*V. narbonensis* subsp. *serratifolia* (Jacq.) Arcang.]

Non-native: C

Distribution: Cn

Remarks: Formerly cultivated and reported as sporadic in the surroundings of Barcelona (Bolòs, 1950).

Vicia tenuifolia Roth [*V. cracca* subsp. *tenuifolia* (Roth) Gaudin]

Distribution: Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Vicia villosa Roth

Non-native: C

Distribution: Pc Ppc Ppe Ae Aw Cn Cs

Remarks: Cultivated as forage plant, sometimes escaped or persistent, on cultivated and waste fields.

Wisteria sinensis (Sims) Sweet

Non-native: C

Distribution: R Cn Cc

Remarks: See Casasayas (1989) for its distribution.

POLYGALACEAE

Polygala alpestris Rchb. subsp. *alpestris* [*P. vulgaris* subsp. *alpestris* (Rchb.) Rouy & Foucaud]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Polygala alpina (DC.) Steud.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Polygala calcarea F.W. Schultz

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Polygala exilis DC.

Distribution: Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Polygala monspeliaca L.

Distribution: Ae S R Cn Cc Cs

IUCN category: LC

Polygala myrtifolia L.

Non-native: C

Distribution: Cn Cc

Remarks: Escaped from cultivation in L'Ampolla, Baix Ebre (Aymerich, 2017b) and Blanes, Selva (Verloove & Aymerich, 2020).

Polygala nicaeensis W.D.J. Koch subsp. *gerundensis* (O. Bolòs & Vigo) A.M. Hern. [*P. vulgaris* subsp. *gerundensis* (O. Bolòs & Vigo) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Neither its taxonomic status nor its relationships have been fully appraised, and an in-depth study is required.

Polygala rupestris Pourr.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Polygala serpyllifolia Hosé*Distribution:* Pa Pc*IUCN category:* LC***Polygala vulgaris*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn Cc*IUCN category:* LC***Polygaloides vayredae*** (Costa) O. Schwarz [*Polygala vayredae* Costa]*Distribution:* Endemic. Ppe*IUCN category:* NT*Remarks:* Restricted to a small area in Garrotxa county (Vall del Bac). See Abbott (2011) and Mota & al. (2019) for generic delineation.**ROSACEAE*****Agrimonia eupatoria*** L. subsp. *eupatoria**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Agrimonia eupatoria*** L. subsp. *major* (Boiss.) Iamónico [*A. grandis* C.A. Meyer, nom. inval.]*Distribution:* Pe Aw S Cn Cs*IUCN category:* LC*Remarks:* Probably more widespread than currently documented.***Agrimonia procera*** Wallr. [*A. odorata* auct.]*Distribution:* Pc Pe Ppe O Cn*IUCN category:* LC***Alchemilla*** L.*Remarks:* It is assumed that this taxonomically complex genus is poorly known in the studied area. Our treatment of *Alchemilla* follows Fröhner (1998) with additions and changes as proposed in the recent literature. Virtually nothing is known about the distribution, ecology, biology and variation of some species, which sometimes are known from few collections.***Alchemilla acutiformis*** S.E. Fröhner*Distribution:* Pa*IUCN category:* DD*Remarks:* Closely related to *A. vulgaris* L. *Alchemilla acutiformis* is endemic to central Pyrenees (Hautes Pyrenees, Huesca and Lleida provinces). Fröhner (1998) reported this species from several locations in Val d'Aran, including its loc. class.; see also Sáez & al. (2010).

Alchemilla albinervia S.E. Fröhner*Distribution:* Pa Pc*IUCN category:* LC*Remarks:* The species is taxonomically related to *A. glomerulans* (Fröhner, 1995). *Alchemilla albinervia* is endemic to central Pyrenees (Hautes Pyrénées, Benasque valley, upper Noguera Ribagorçana basin and Aran valley) (Fröhner, 1998).***Alchemilla alpina*** L. [*A. viridicans* Rothm.]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC*Alchemilla alpigena* Hegi [*A. alpina* subsp. *asterophylla* sensu O. Bolòs & Vigo; *A. fontqueri* Rothm.; *A. plicatula* auct., p.p.]*Distribution:* Pa Pc Pe Ppc Ppe ?O*IUCN category:* LC*Remarks:* Its presence in O requires confirmation.***Alchemilla aranica*** S.E. Fröhner*Distribution:* Subendemic. Pa*IUCN category:* DD*Remarks:* This species was included in sect. *Splendentes* (Buser) Buser. According to Fröhner (1998) *A. aranica* is endemic to Central Pyrenees. It is probably not a rare species in the Aran Valley given that four Aranese localities were included in the protologue; see also Sáez & al. (2010).***Alchemilla atropurpurea*** S.E. Fröhner*Distribution:* Pc ?Pe ?Ppe*IUCN category:* DD*Remarks:* This species, endemic to Pyrenees and mountain areas of northern Iberian Peninsula, is morphologically close to *A. xanthochlora*. Fröhner (1998) listed it for Barcelona, Girona and Lleida provinces. Because it is known from few collections, its distribution is poorly known.***Alchemilla borderei*** S.E. Fröhner*Distribution:* Pa Pc*IUCN category:* LC*Remarks:* This species, taxonomically related to *A. fissa*, is endemic to the Cantabrian range and Pyrenees (Fröhner, 1998).***Alchemilla cadinensis*** Aymerich & L. Sáez*Distribution:* Endemic. Pe Ppe*IUCN category:* EN*Remarks:* Endemic to eastern Pyrenees, where it is known from the Cadí range, Tosa d'Alp and Pedraforca massif (Aymerich & Sáez, 2015).

Alchemilla catalaunica Rothm. [*A. alpina* subsp. *catalaunica* (Rothm.) O. Bolòs & Vigo; *A. alpina* auct., p.p.; *A. plicatula* auct., p.p.]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: See Fröhner (1998) for the whole distribution of this species.

Alchemilla cataractarum S.E. Fröhner

Distribution: Pa Pc

IUCN category: LC

Remarks: This species, which is related to *A. coriacea*, was reported from Pa (Varradós and Joeu valleys) and Noguera Ribagorçana valley (Pc) (Fröhner, 1998).

Alchemilla colorata Buser [*A. hybrida* subsp. *colorata* (Buser) Gams]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: Probably over-recorded for several poorly known species included within sect. *Pubescentes* (Buser) Buser.

Alchemilla connivens Buser [*A. vulgaris* subsp. *connivens* (Buser) E.G. Camus]

Distribution: Pc Pe Ppe

IUCN category: LC

Alchemilla coriacea Buser [*A. vulgaris* subsp. *coriacea* (Buser) E.G. Camus]

Distribution: Pa Pc Pe O

IUCN category: LC

Alchemilla demissa Buser [*A. vulgaris* subsp. *demissa* (Buser) O. Bolòs & Vigo]

Distribution: Pc ?Pe

IUCN category: DD

Remarks: It has often been confused with *A. fissa*. *Alchemilla demissa* is known from Espot and Boí valleys (Fröhner, 1998). Its presence in Vall de Ribes (Vigo, 1983) requires confirmation.

Alchemilla effusa Buser [*A. effusififormis* S.E. Fröhner]

Distribution: Pa Pc

IUCN category: DD

Remarks: See Fröhner (1998) for taxonomy and distribution.

Alchemilla espotensis S.E. Fröhner

Distribution: Subendemic. Pa Pc

IUCN category: DD

Remarks: A poorly known species, apparently endemic to central Pyrenees: Espot valley (loc. class.), Andorra, Port de la Bonaigua area and Benasque valley (Fröhner, 1998).

Alchemilla fagei S.E. Fröhner*Distribution:* Pa*IUCN category:* DD

Remarks: A poorly known species showing taxonomic relationships with *A. xanthochlora*, *A. frost-olsenii* and *A. rhododendrophila* Buser. *Alchemilla fagei* is apparently endemic to central Pyrenees: Pa (loc. class.: Varradós), Andorra and French Pyrenees (Fröhner, 1998).

Alchemilla fallax Buser*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC

Remarks: It is taxonomically related to *Alchemilla fissa*. In our area *A. fallax* reaches its easternmost location in Puig de Bassegoda, Alta Garrotxa (MA 555367, det. S. Fröhner).

Alchemilla flicaulis Buser [*A. hybrida* subsp. *vestita* (Buser) O. Bolòs & Vigo]*Distribution:* Pa Pc Pe Ppe ?O*IUCN category:* LC

Remarks: Its presence in O requires confirmation (Oliver & Font, 2009).

Alchemilla fissa Günther & Schummel*Distribution:* Pa Pc Pe ?Ppe*IUCN category:* LC

Remarks: The only report for Ppe (Vigo & al., 2003) apparently belongs to *A. cadinensis*. *Alchemilla fissa* subsp. *pyrenaica* (Dufour) O. Bolòs & Vigo was reduced to synonymy of typical *A. fissa* by Fröhner (1998).

Alchemilla flabellata Buser [*A. hybrida* subsp. *flabellata* (Buser) Gams]*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Alchemilla frost-olsenii*** S.E. Fröhner*Distribution:* Pa*IUCN category:* DD

Remarks: It is taxonomically related to *A. xanthochlora* and *A. rhododendrophila* Buser (Fröhner, 1995, 1996). Based on Fröhner (1998) and data from JACA herbarium *A. frost-olsenii* is apparently endemic to western and central Pyrenees (Navarra, Huesca and Lleida provinces and Andorra).

Alchemilla fulgens Buser [*A. hybrida* subsp. *fulgens* (Buser) O. Bolòs & Vigo]*Distribution:* Pa Pc*IUCN category:* DD

Remarks: It is apparently endemic to Central Pyrenees, between Ansó valley and Val d'Aran-Alta Ribagorça (Fröhner, 1998).

Alchemilla glabra Neygenf. [*A. vulgaris* subsp. *glabra* (Neygenf.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppe ?O

IUCN category: LC

Remarks: Its presence in O requires confirmation (Oliver & Font, 2009)

Alchemilla glaucescens Wallr. [*A. hybrida* subsp. *glaucescens* (Wallr.) O. Bolòs & Vigo]

Distribution: ?Pc Pe Ppe O

IUCN category: LC

Remarks: See Fröhner (1998) for its distribution in the Iberian Peninsula. A report for Pc (Llensa, 1947) requires confirmation (Carrillo & Ninot, 1992a).

Alchemilla glomerulans Buser [*A. vulgaris* subsp. *glomerulans* (Buser) Ahlfv.]

Distribution: Pa Pc

IUCN category: LC

Remarks: See Fröhner (1998) for its distribution in the Iberian Peninsula.

Alchemilla hoppeaniformis S.E. Fröhner

Distribution: Pc

IUCN category: DD

Remarks: This species, which is morphologically close to *A. hoppeana* (Rchb.) Dalla Torre (Fröhner, 1995), is endemic to Pyrenees and mountain areas of northern Iberian Peninsula. Fröhner (1998) reported this species for Boí valley.

Alchemilla ilerdensis S.E. Fröhner

Distribution: Subendemic. Pa Pc

IUCN category: DD

Remarks: This species, endemic to Pyrenees (Fröhner, 1998), is morphologically close to *A. xanthochlora* and *A. micans* Buser. It is known from Valarties (loc. class.), Bonaigua and Espot.

Alchemilla impedicellata S.E. Fröhner

Distribution: Pa

IUCN category: DD

Remarks: A poorly known species showing taxonomic relationships with *A. xanthochlora*. *Alchemilla impedicellata* is apparently endemic to central Cantabrian range and Pyrenees (Fröhner, 1998); see also Sáez & al. (2010).

Alchemilla inconcinna Buser [*A. vulgaris* subsp. *inconcinna* (Buser) Gams, *A. alniformis* S.E. Fröhner]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: Reported from Val d'Aran, Port de la Bonaigua area and Espot valley (Fröhner, 1998).

Alchemilla iniquiformis S.E. Fröhner*Distribution:* Pa Pc*IUCN category:* DD*Remarks:* This species, which is morphologically close to *A. lapeyrousii* and *A. colorata*, is apparently endemic to Pyrenean and Cantabrian ranges (Fröhner, 1998).***Alchemilla ischnocarpa*** S.E. Fröhner*Distribution:* Subendemic. Pa*IUCN category:* DD*Remarks:* A poorly known species showing taxonomic relationships with *A. xanthochlora*. *Alchemilla ischnocarpa* is apparently endemic to central Pyrenees (see Fröhner, 1998): Benasque valley (Huesca province) and Pa (Joeu river, loc. class.).***Alchemilla lapeyrousii*** Buser [*A. hybrida* subsp. *lapeyrousii* (Buser) P. Fourn.; *A. hybrida* (L.) L., nom. ambig.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Remarks:* Probably over-recorded for several species included within sect. *Pubescentes* (Buser) Buser.***Alchemilla lucida*** Buser [*A. alpina* subsp. *semiserrata* Braun-Blanq.]*Distribution:* Pc*IUCN category:* DD*Remarks:* Reported from Espot and Rubió, Pallars Sobirà (Fröhner, 1998).***Alchemilla lunaria*** S.E. Fröhner [*A. vulgaris* subsp. *flaccida* sensu O. Bolòs & Vigo]*Distribution:* Pc*IUCN category:* DD***Alchemilla montserratii*** S.E. Fröhner*Distribution:* ?Pa ?Pc*IUCN category:* DD*Remarks:* Listed for Lleida province (Fröhner, 1998). This species, which is morphologically close to *A. obscura* Buser and *A. monticola* Opiz, is apparently endemic to central Pyrenees (Huesca and Lleida provinces and Andorra).***Alchemilla nudans*** S.E. Fröhner*Distribution:* Endemic. Pe*IUCN category:* DD*Remarks:* It is apparently endemic to our area, where it is known only from the type location (Campelles, Ripollès). *Alchemilla nudans* was included in sect. *Flabellatae* S.E. Fröhner. It is morphologically related to *A. flabellata* Buser and *A. carniolica* (Paulin) Fritsch.

Alchemilla oscensis S.E. Fröhner*Distribution:* Pa Pc*IUCN category:* DD*Remarks:* Morphologically close to *A. lapeyrousii* and *A. colorata*. *Alchemilla oscensis* is apparently endemic to Pyrenees and southern Iberian range (Fröhner, 1998).***Alchemilla pallens*** Buser [*A. alpina* subsp. *pallens* (Buser) Gremlí]*Distribution:* Pa*IUCN category:* DD*Remarks:* Reported by Fröhner (1998), based on material collected in valley of Riu Valarties (MA 555389 and MA 618142, det. S. Fröhner).***Alchemilla paupercula*** S.E. Fröhner*Distribution:* Endemic. Pc*IUCN category:* DD*Remarks:* It is apparently endemic to our area, where it is known only from the type location (Espot valley). *Alchemilla paupercula*, which was included in sect. *Splendentes* (Buser) Buser, is morphologically related to *A. exigua* Buser (endemic to Alps) (Fröhner, 1998).***Alchemilla pentaphyllea*** L.*Distribution:* Pa Pc*IUCN category:* VU*Remarks:* So far it is known only from a small area in Port de Caldes, between Boí and Espot valleys (Sáez & al., 2009, 2010).***Alchemilla saxatilis*** Buser [*A. alpina* subsp. *saxatilis* (Buser) E.G. Camus; *A. alpina* auct.]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Alchemilla straminea*** Buser [*A. vulgaris* subsp. *straminea* (Buser) O. Bolòs & Vigo]*Distribution:* Pc Pe*IUCN category:* LC*Remarks:* Reports for O are probably due to confusion with other species of the genus.***Alchemilla tenerrima*** S.E. Fröhner [*A. subsericea* auct., non Reut.]*Distribution:* Pc Pe*IUCN category:* LC*Remarks:* Morphologically close to *A. subsericea* Reut.; reported from Ribes valley, Montsent de Pallars massif and Espot valley (Fröhner, 1998).***Alchemilla tenuis*** Buser [*A. vulgaris* subsp. *tenuis* (Buser) Murr]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC

Alchemilla transiens (Buser) Buser [*A. alpina* subsp. *transiens* (Buser) O. Bolòs & Vigo]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: See Fröhner (1998) for its distribution in the Iberian Peninsula.

Alchemilla xanthochlora Rothm. [*A. vulgaris* subsp. *xanthochlora* (Rothm.) O. Bolòs & Vigo, *A. vulgaris* auct.]

Distribution: Pa Pc Pe Ppc Ppe O

IUCN category: LC

Remarks: Probably over-recorded for several poorly known species belonging to sect. *Alchemilla*.

Amelanchier ovalis Medik.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw ?S O R Cn Cc Cs

IUCN category: LC

Aphanes arvensis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Aphanes australis Rydb. [*A. microcarpa* auct.]

Distribution: Pa O R Cn

IUCN category: LC

Remarks: Also listed for Tarragona province without precise location (Frost-Olsen, 1998).

Aphanes cornucopioides Lag.

Distribution: Cc

IUCN category: LC

Aria edulis (Willd.) M. Roem. [*Sorbus aria* (L.) Crantz]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs

IUCN category: LC

Remarks: See Sennikov & Kurtto (2017) for the taxonomy and nomenclature of *Sorbus* in broad sense.

Aruncus dioicus (Walter) Fernald

Distribution: Pa Pc

IUCN category: LC

Chaenomeles speciosa (Sweet) Nakai

Non-native: C

Distribution: Ae Aw

Remarks: Reported from Berguedà and Bages counties (Aymerich, 2013d; 2020a).

Chamaespilus alpina (Mill.) K.R. Robertson & J.B. Phipps [*Sorbus chamaespilus* (L.) Crantz]

Distribution: Pa Pc Ppe

IUCN category: LC

Comarum palustre L. [*Potentilla palustris* (L.) Scop.]

Distribution: Pa Pc

IUCN category: LC

Cormus domestica (L.) Spach [*Sorbus domestica* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Cotoneaster affinis Lindl.

Non-native: N

Distribution: Ae

Remarks: Known from middle basin of Llobregat river (Aymerich, 2019); previously confused with *C. racemiflorus* (Desf.) K. Koch (Aymerich, 2013d). See Dickoré & Kasperek (2010) for taxonomy.

Cotoneaster apiculatus Rehder & E.H. Wilson [incl. *C. hjelmqvistii* Flinck & B. Hylmö]

Non-native: N

Distribution: Pe Ppe Aw Cn

Remarks: First report from Berguedà county (Aymerich, 2017b); later found elsewhere. All Catalan plants belong to the forms often treated at specific level as *C. hjelmqvistii*. However, the synthetic treatment of Dickoré & Kasperek (2010) is followed here.

Cotoneaster bullatus Bois

Non-native: C

Distribution: Ppe

Remarks: Only reported from Sant Joan de les Abadesses, Ripollès (Aymerich, 2019).

Cotoneaster coriaceous Franch. [*C. lacteus* W.W. Sm.]

Non-native: N

Distribution: Pe Ppe Ae Aw Cn Cs

Remarks: See Aymerich (2017b) for its distribution.

Cotoneaster dielsianus Diels

Non-native: N

Distribution: Pe Ppe

Remarks: It is known from Ripollès and Cerdanya counties (Aymerich, 2019).

Cotoneaster divaricatus Rehder & E.H. Wilson*Non-native:* C*Distribution:* Ppe Aw Cn

Remarks: Reported Bages and Ripollès counties (Aymerich, 2016a, 2020a). The first naturalised population was found in Sant Quize Safaja, Moianès (Aymerich & Sáez, 2021c).

Cotoneaster franchetii D. Bois.*Non-native:* N*Distribution:* Pe Ppe Ae Cn

Remarks: Only a naturalised population is known, in Cerdanya (Pe) (Aymerich, 2020a); casual elsewhere. Basnou & al. (2015) listed this species for the Barcelona metropolitan area; however, this report is doubtful since *C. franchetii* is often confused with *C. pannosus* in Mediterranean areas.

Cotoneaster horizontalis Decne. [*C. perpusillus* (C.K. Schneid.) Flinck & B. Hylmö]*Non-native:* N*Distribution:* Ppe Ae Aw O Cn Cc

Remarks: First report from upper basin of Llobregat river (Aymerich, 2013d); later found elsewhere.

Cotoneaster integerrimus Medik.*Distribution:* Pa Pc Pe Ppc Ppe Cn Cs*IUCN category:* LC

Remarks: According to analytical treatments the prostrate plants with mainly oblong leaves, glabrous in the adaxial surface when young and inflorescences with 1-2 flowers are mostly referable to *C. juranus* Gand. *Cotoneaster integerrimus* in strict sense (including *C. pyrenaicus* Gand.) would be a much rarer taxon with suberect stems, ovate to broadly elliptic leaves, often with some hairs when young in the adaxial surface and inflorescences with (1)2-4(5) flowers. However, the taxonomic independence of some of these microspecies seems questionable (Dickoré & Kasperek, 2010). Information about polymorphic sites (ribosomal ITS sequences) of some populations from northeastern Iberian Peninsula was provided by Sáez & Rosselló (2012).

Cotoneaster integrifolius (Roxb.) G.Klotz*Non-native:* C*Distribution:* Pe Cn

Remarks: Known from Bolvir, Cerdanya (Aymerich, 2020a) and Sant Quize Safaja, Moianès (Aymerich & Sáez, 2021c).

Cotoneaster pannosus Franch.*Non-native:* N*Distribution:* Ppe Ae Aw O Cn Cc

Remarks: See Aymerich (2017b) for its distribution.

Cotoneaster perpusillus (C.K. Schneid.) Flinck & B. Hylmö [*C. horizontalis* Decne. var. *perpusillus* C.K. Schneid.]

Non-native: C

Distribution: Pe Ae

Remarks: Reported from Bolvir (Cerdanya) and Moià (Moianès) (Aymerich, 2020a).

Cotoneaster salicifolius Franch

Non-native: C

Distribution: Pe Ppe Cn

Remarks: First report from Castellterçol, Moianès (Mercadé, 2016); later found in Cerdanya and Ripollès counties (Aymerich, 2020a).

Cotoneaster simonsii Baker

Non-native: N

Distribution: Ppe Ae

Remarks: Reported from the middle bassin of Llobregat river (Aymerich, 2001).

Cotoneaster tomentosus (Aiton) Lindl. [*C. nebrodensis* auct., non Boiss.]

Distribution: Pa Pc Pe Ppc Ppe O Cc Cs

IUCN category: LC

Remarks: Information about polymorphic sites (ribosomal ITS sequences) of some populations from northeastern Iberian Peninsula was provided by Sáez & Rosselló (2012). Some possibly hybridogenous individuals from Ppe show characters close to plants known as *C. intermedius* Coste.

Cotoneaster zabelii C.K. Schneid.

Non-native: C

Distribution: Cn

Remarks: Reported from Sant Quirze Safaja, Moianès (Aymerich & Sáez, 2021c).

Crataegus azarolus L. [*C. monogyna* subsp. *ruscinoensis* (Gren. & Blanc) O. Bolòs & Vigo]

Non-native: C

Distribution: +R +Cn +Cc Cs

Remarks: Most reports of this species are old (19th century and early 20th century). The only modern report comes from Amposta, Montsià (Royo, 2006).

Crataegus laevigata (Poir.) DC.

Distribution: Pa

IUCN category: DD

Remarks: A single specimen was found in Les by Nuet (2017). This species is known from several French locations close the border with Pa.

Crataegus monogyna Jacq. [*C. monogyna* subsp. *brevispina* (Kunze) Franco]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Cydonia oblonga Mill.

Non-native: N

Distribution: Pa Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Dasiphora fruticosa (L.) Rydb. [*Potentilla fruticosa* L.]

Distribution: Pe

IUCN category: NT

Dryas octopetala L. subsp. *octopetala*

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Drymocallis rupestris (L.) Soják [*Potentilla rupestris* L.]

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Eriobotrya japonica (Thunb.) Lindl.

Non-native: C

Distribution: Ae O R Cn Cc Cs

Filipendula ulmaria (L.) Maxim.

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn

IUCN category: LC

Filipendula vulgaris Moench

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Fragaria vesca L. subsp. *vesca*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Fragaria viridis Weston

Distribution: Ppc O

IUCN category: DD

Remarks: Reports from Muntanyes de Prades (Cc) due to Braun-Blanquet (1935) are not supported by herbarium specimens.

Fragaria ananassa (Weston) Duchesne

Non-native: C

Distribution: Pc Aw O

Fragaria ×intermedia (Bach) Beck [*F. moschata* × *F. vesca*]

Non-native: C

Distribution: Cn

Geum hispidum Fr. [*G. hispidum* var. *albarracinense* (Pau) Cadevall & Pau]

Distribution: Pa Pc Ppc Ppe O Cn Cs

IUCN category: LC

Geum montanum L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Geum pyrenaicum Mill.

Distribution: Pa Pc

IUCN category: LC

Remarks: Old reports from Pe are probably erroneous (Vigo, 1983).

Geum rivale L.

Distribution: Pa Pc Pe Ppc Ppe Cs

IUCN category: LC

Geum sylvaticum Pourr.

Distribution: Ppc ?Ppe Cn Cc Cs

IUCN category: LC

Remarks: Reports from Ppe by Gruber (1978) require confirmation.

Geum urbanum L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Hedlundia hybrida (L.) Sennikov & Kurtto [*Sorbus hybrida* L.]

Distribution: Pe Ppc Ppe

IUCN category: DD

Remarks: Individuals of this species are isolated, not forming true populations.

Hedlundia mougeotii (Soy.-Will. & Godr.) Sennikov & Kurtto [*Sorbus aria* subsp. *mougeotii* (Soy.-Will. & Godr.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Karpatisorbus latifolia (Lam.) Sennikov & Kurtto [*Sorbus latifolia* (Lam.) Pers.]

Distribution: Cc

IUCN category: VU

Remarks: Reported from Prades mountains (Aldasoro & al., 2004; Molero & al., 2016). A report from Gresolet valley (Ppe) (Llensa, 1936) is probably erroneous.

Kerria japonica (L.) DC.*Non-native:* C*Distribution:* Pc*Remarks:* An escaped specimen has been found in Sort, far from inhabited areas (Aymerich, 2020a); persistent after cultivation elsewhere.*Majovskya ambigua* (Decne.) Sennikov & Kurtto [*Sorbus ambigua* Decne.]*Distribution:* Pa ?Pe*IUCN category:* DD*Remarks:* Morphologically intermediate plants between *Aria edulis* and *Chamaemespilus alpina* are known from Pa. Aedo & Aldasoro (1998) listed *M. ambigua* for Girona province.*Malus domestica* (Borkh.) Borkh. [*Pyrus malus* subsp. *mitis* (Wallr.) Syme]*Non-native:* C*Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*Remarks:* Cultivated, sometimes escaped.*Malus sylvestris* (L.) Mill. [*Pyrus malus* L.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC*Malus toringo* (Siebold) de Vriese*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Sant Quirze Safaja (Aymerich & Sáez, 2021c).*Mespilus germanica* L.*Non-native:* N*Distribution:* Pe Ppe Ae Aw O R Cn*Remarks:* Cultivated, sometimes escaped.*Photinia serratifolia* (Desf.) Kalkman*Non-native:* C*Distribution:* +Aw*Remarks:* Only an old report from Bages (Cadevall, 1919) is available.*Potentilla alchimilloides* Lapeyr.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Potentilla argentea* L.*Distribution:* Pa Pc Pe Ppc Ppe O R Cn Cc*IUCN category:* LC

Potentilla brauniana Hoppe [*P. brauneana* Hoppe]*Distribution:* Pa Pc Pe*IUCN category:* LC*Remarks:* Its presence in Pe is supported by herbarium material collected in the early 20th century (Vigo, 1983).***Potentilla caulescens*** L.*Distribution:* Pe Ppc Ppe O Cn Cc Cs*IUCN category:* LC***Potentilla cinerea*** Vill. [*P. arenaria* Borkh.; incl. *P. cinerea* subsp. *velutina* (Lehm.) Nyman]*Distribution:* Pa Ppc Ppe Ae Aw Cc*IUCN category:* LC*Remarks:* According to Guillén & Rico (1998) intermediate specimens linking the two extreme morphotypes, subsp. *cinerea* and subsp. *velutina*, are numerous and no constant morphological features can be used to trace taxa boundaries. Specimens referable to subsp. *velutina* can be found in Ppc and western Aw, whereas plants included within subsp. *cinerea* are found in the remaining territory.***Potentilla crantzii*** (Crantz) Fritsch*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Potentilla erecta*** (L.) Raeusch.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw Q Cn Cs*IUCN category:* LC***Potentilla frigida*** Vill.*Distribution:* Pa Pc Pe*IUCN category:* LC***Potentilla grandiflora*** L.*Distribution:* +Pc*IUCN category:* RE*Remarks:* A collection from Vall Ferrera in 1912 by P. Font Quer is the only known occurrence in our area (Aymerich & Sáez, 2015). This species has not been found recently and has probably become extinct.***Potentilla hirta*** L.*Distribution:* Pe R Cn Cc*IUCN category:* LC*Remarks:* Reports from Ppc (Romo, 1989) are due to confusion with *P. verna*.

Potentilla hispanica Zimmeter*Distribution:* Pc Ppc Ppe*IUCN category:* VU*Remarks:* Pyrenean plants called *P. pennsylvanica* L. are closer to *P. hispanica*. Further studies are needed to establish conclusively their identity.***Potentilla indica*** (Andrews) Th. Wolf [*Duchesnea indica* (Andrews) Focke]*Non-native:* C*Distribution:* Cn*Remarks:* Listed for Barcelona province without precise location (Navarro & Muñoz Garmendia, 1998). As casual species we know only a report for Vallès Oriental (J. Roma in biodiversidadvirtual.org).***Potentilla inclinata*** Vill.*Distribution:* Pe R Cn*IUCN category:* LC***Potentilla micrantha*** DC.*Distribution:* Pa Pc Pe Ppc Ppe O Cn Cs*IUCN category:* LC***Potentilla montana*** Brot.*Distribution:* Pa Cn*IUCN category:* LC***Potentilla nivalis*** Lapeyr. subsp. *nivalis**Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Potentilla norvegica*** L.*Non-native:* N*Distribution:* Pc*Remarks:* A single location is known, in Sallente reservoir, Pallars Jussà (Rivas-Martínez & al., 2012).***Potentilla pedata*** Hornem.*Distribution:* Pc*IUCN category:* DD*Remarks:* Reported from Espot, Pallars Sobirà (Aymerich & Sáez, 2021b).***Potentilla pyrenaica*** DC.*Distribution:* Pa Pc Pe Ppe Cn*IUCN category:* LC

Potentilla recta L.

Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc

IUCN category: LC

Potentilla reptans L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Potentilla sterilis (L.) Garcke

Distribution: Pa Pc Pe Ppe O Cn

IUCN category: LC

Potentilla verna L. [*P. neumanniana* Rchb.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Potentilla* × *subarenaria Zimmeter [*P. cinerea* × *P. verna*; *P. zapateri* Pau]

Distribution: Ae Aw Cc

Remarks: This hybrid is, in central Catalonia, almost as frequent as the alleged parentals (Aymerich, 2009a).

Poterium rupicola Boiss. & Reut. [*Sanguisorba rupicola* (Boiss. & Reut.) A. Braun & C.D. Bouché]

Distribution: Cc Cs

IUCN category: LC

Poterium sanguisorba subsp. *balearica* (Nyman) Stace [*Sanguisorba minor* subsp. *balearica* (Nyman) Muñoz Garm. & C. Navarro; *S. minor* subsp. *muricata* (Bonnier & Layens) Briq.; *S. minor* subsp. *polygama* (Waldst. & Kit.) Cout.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Poterium sanguisorba L. subsp. *sanguisorba* [*Sanguisorba minor* Scop. subsp. *minor*]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs

IUCN category: LC

Poterium verrucosum Don [*Sanguisorba verrucosa* (G. Don) Ces.; *S. minor* subsp. *verrucosa* (G. Don) Cout.; *S. minor* subsp. *spachiana* (Coss.) Muñoz Garm. & Pedrol]

Distribution: Pe Ppc Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Reports from O are probably erroneous (Oliver & Font, 2009).

Prunus avium* L.Distribution:* Pa Pc Pe Ppc Ppe [Ae] [Aw] O [R] Cn Cc [Cs]*IUCN category:* LC***Prunus armeniaca* L.***Non-native:* C*Distribution:* Aw S R Cc Cs*Remarks:* Cultivated, sometimes escaped in waysides and waste fields.***Prunus cerasifera* Ehrh.***Non-native:* I*Distribution:* Pe Ppc Ppe Ae Aw O R Cn Cc Cs***Prunus cerasus* L.***Non-native:* C*Distribution:* Cc***Prunus domestica* L.***Non-native:* C*Distribution:* Pc Pe Ae Aw S O R Cn Cc Cs***Prunus dulcis* (Mill.) D.A. Webb***Non-native:* C*Distribution:* Ppc Ae Aw S R Cn Cc Cs*Remarks:* It is widely cultivated and occurs as casual in waysides and waste fields.***Prunus insititia* L.***Non-native:* N*Distribution:* Pc Pe Ppc Ppe S O R Cc Cs*Remarks:* Its non-native status is uncertain.***Prunus laurocerasus* L.***Non-native:* N*Distribution:* Pe Ppe Ae O Cn*Remarks:* Usually casual; sometimes naturalised.***Prunus lusitanica* L. subsp. *lusitanica****Distribution:* Cn Cc*IUCN category:* NT*Remarks:* Long ago known in Montseny and Guilleries massifs. Molero & al. (2016) reported this species from Cc (Prades mountains).***Prunus mahaleb* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* NT

Prunus padus L. subsp. ***padus****Distribution:* Pa Pc*IUCN category:* LC*Remarks:* Some Pyrenean populations show morphological characters that would correspond to subsp. *borealis* (Schübel) Nyman [*P. padus* subsp. *petraea* (Tausch) Domin]. Further studies are needed to establish conclusively its identity.***Prunus persica*** (L.) Batsch*Non-native:* C*Distribution:* Pe Ppc Ppe Aw S O R Cn Cc Cs*Remarks:* Cultivated, sometimes escaped in waysides and waste fields.***Prunus prostrata*** Labill.*Distribution:* Cc Cs*IUCN category:* NT***Prunus spinosa*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Prunus virginiana*** L.*Non-native:* N*Distribution:* Pe*Remarks:* Locally naturalised in Segre river close to Puigcerdà (Aymerich, 2017d).***Prunus ×fruticans*** Weihe [*P. insititia* × *P. spinosa*]*Distribution:* Cc*Remarks:* Reported from Prades mountains (Molero & Pyke, 2019).***Pyracantha angustifolia*** (Franch.) C.K. Schneid.*Non-native:* N*Distribution:* Ppe Ae Aw O R Cn Cc Cs***Pyracantha coccinea*** M. Roem.*Non-native:* N*Distribution:* Ppc Ae Aw O R Cn Cc*Remarks:* Although this species was traditionally regarded as native in O, it is probably an old naturalisation. There is little information on naturalised populations in other areas.***Pyracantha crenulata*** (D. Don) M. Roem.*Non-native:* C*Distribution:* Cn*Remarks:* Observed in Espinelves, Guillerics massif (Aymerich & Sáez, 2021c).

Pyracantha fortuneana (Maxim.) H.L. Li [*P. crenatoserrata* (Hance) Rehder]

Non-native: N

Distribution: Ppe Ae Aw Cn Cc

Pyrus communis L. [*P. pyraster* (L.) Baumg.; *P. communis* subsp. *achras* Syme]

Non-native: N

Distribution: Pe Ppc Ppe Ae O R Cn Cc Cs

Remarks: It is regarded here as non-native although it was considered partially native (Bolòs & al., 2005); naturalised populations are restricted to northern and northeastern humid areas.

Pyrus spinosa Forssk. [*P. amygdaliformis* Mill.]

Distribution: Pe ?Ppe [Ae] [Aw] R Cn Cc

IUCN category: LC

Remarks: Reports from Ppe (Vives, 1964) require confirmation.

Rhaphiolepis indica (L.) Lindl.

Non-native: C

Distribution: Cn

Remarks: Young individuals are observed in Barcelona urban habitats (L. Gustamante, pers. com.).

Rosa agrestis Savi

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Rosa arvensis Huds.

Distribution: Pa Pc Pe Ppe Ae Aw Q Cn Cc Cs

IUCN category: LC

Rosa canina aggr.

Remarks: The respective distribution areas of the species included in this aggregate are not clearly defined at present.

Rosa andegavensis Bastard [*R. canina* subsp. *andegavensis* (Bastard) Nyman]

Distribution: Pe Ppc Ppe Aw Cc

IUCN category: LC

Rosa blondaiana Déségl. [? *R. nitidula* Besser]

Distribution: Pc Pe Ppc Ppe ?S Cs

IUCN category: LC

Remarks: Its presence in S (Rovira, 1986) requires confirmation.

Rosa caballicensis Déségl.*Distribution*: Ppc*IUCN category*: DD*Remarks*: Reported from Boumort massif (Sáez & al., 2008).***Rosa canina*** L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Remarks*: Morphologically intermediate plants between *R. canina* in strict sense and *R. corymbifera* were called *Rosa incisifolia* Sennen & Gonzalo. Silvestre & Montserrat (1998) listed the latter taxon for Barcelona and Girona provinces.***Rosa corymbifera*** Borkh. [*R. canina* subsp. *corymbifera* (Borkh.) C. Vicioso; *R. canina* subsp. *dumetorum* (Thuill.) Fr.]*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC*Remarks*: Intermediate forms between *R. corymbifera* and *R. coriifolia* were called *R. subcollina* (H. Christ) Dalla Torre & Sarnth. These plants can be found in eastern Pyrenees.***Rosa deseglisei*** Boreau*Distribution*: Ppe ?Cc Cs*IUCN category*: DD*Remarks*: Listed for Tarragona province (Silvestre & Montserrat, 1998).***Rosa obtusifolia*** Desv. [*R. canina* subsp. *obtusifolia* (Desv.) C. Vicioso]*Distribution*: ?Cc ?Cs*IUCN category*: DD*Remarks*: Listed for Tarragona province without precise location (Silvestre & Montserrat, 1998).***Rosa squarrosa*** (A. Rau) Boreau [*R. canina* subsp. *squarrosa* (A. Rau) Hayek]*Distribution*: Pc Pe Ppc Ppe Ae Cn Cc Cs*IUCN category*: LC*Remarks*: Its actual distribution in the studied area seems to be underestimated due to confusion with *R. canina*.***Rosa dumalis*** aggr.***Rosa acharii*** Billb. [*R. canina* subsp. *acharii* (Billb.) Nyman]*Distribution*: Pe Ppc*IUCN category*: LC*Remarks*: Intermediate specimens between *R. dumalis* in a strict sense and *R. acharii* [*R. malmudariensis* Lej.] were reported from Barruera (Pc). Reports from Tregurà (Pe) (Cadevall, 1919, sub *R. glauca* var. *glandulosa* (Crép.) Cadevall) are probably referable to *R. acharii*.

Rosa coriifolia Fr. [*R. dumalis* subsp. *coriifolia* (Fr.) P. Fourn.]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: According to Silvestre & Montserrat (1998) *Rosa dumalis* Bechst. [*R. glauca* Loisel., nom. illeg.] is not found in Catalonia.

Rosa caesia Sm.

Distribution: Pc Pe Cn

IUCN category: DD

Remarks: Sáez & al. (2015) provide reports from Montseny massif.

Rosa vosagiaca N.H.F. Desp.

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Rosa elliptica Tausch [*R. inodora* auct., non Fr.]

Distribution: Pc

IUCN category: DD

Remarks: A single collection site for this species is known: Arànsér, Alt Urgell, 1 Sept 2006, S. Pyke 5265 (BC 906714). Old reports from O have not been confirmed (Silvestre & Montserrat, 1998).

Rosa gallica L.

Non-native: N

Distribution: Pc Ppc Ppe Ae Aw Cn Cc

Remarks: Most reports of this species are old.

Rosa glauca Pourr.

Distribution: Pa Pc Pe

IUCN category: LC

Rosa micrantha Sm.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Rosa moschata Herrm.

Non-native: N

Distribution: Pc Ppc Ppe Cn

Remarks: In the Pyrenees, *R. moschata* has been sometimes confused with *R. sempervirens* (see Vigo & al., 2003; Aymerich & al., 2008).

Rosa multiflora Thunb.*Non-native*: N*Distribution*: Cn*Remarks*: Known from Collserola mountain close to Barcelona (Gómez-Bellver & al., 2019c).***Rosa pendulina*** L.*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC***Rosa pouzinii*** Tratt.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC***Rosa rubiginosa*** L.*Distribution*: Pa Pc Pe Ppc Ppe O Cn*IUCN category*: LC***Rosa rugosa*** Thunb.*Non-native*: N*Distribution*: O*Remarks*: Reported by Oliver (2019).***Rosa sempervirens*** L.*Distribution*: Pe Ppe O R Cn Cc Cs*IUCN category*: LC***Rosa sicula*** Tratt.*Distribution*: Pc Pe Ppc Ppe Cs*IUCN category*: LC***Rosa spinosissima*** L. [*R. pimpinellifolia* L.]*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw ?O R Cn Cc Cs*IUCN category*: LC*Remarks*: Two varieties have been recognised: var. *spinosissima* and var. *myriacantha* (DC.) Loisel. [*R. pimpinellifolia* subsp. *myriacantha* (DC.) O. Bolòs & Vigo].***Rosa stylosa*** Desv. [*R. canina* subsp. *stylosa* (Desv.) Masclans]*Distribution*: Pe Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC*Remarks*: Its presence in central Pyrenees (Pa, Pc and Ppc) requires confirmation.***Rosa tomentosa*** Sm.*Distribution*: Pa Pc Pe Ppc Ppe Ae O*IUCN category*: LC

Rosa villosa L. [*R. villosa* subsp. *mollis* (Sm.) Hook. f.; *R. mollis* Sm.]

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Rosa agrestis* × *R. micrantha

Remarks: Listed for Barcelona province without specific location (Silvestre & Montserrat, 1998).

Rosa agrestis* × *R. pouzinii

Distribution: Cs

Rosa arvensis* × *R. rubiginosa [*R. ×gallicoides* (Baker) Déségl., p.p.]

Remarks: Listed for Barcelona province without specific location (Silvestre & Montserrat, 1998)

Rosa canina* × *R. pendulina

Distribution: Ppc

Remarks: Known only from Aubenç mountain, Alt Urgell (Silvestre & Montserrat, 1998).

Rosa canina* × *R. rubiginosa

Distribution: Pe

Remarks: Listed for Lleida province without specific location (Silvestre & Montserrat, 1998).

Rosa canina* × *R. stylosa

Distribution: Pc Pe

Rosa canina* × *R. vogasiaca

Distribution: Pc Pe

Rosa* × *caviniacensis Ozanon [*R. agrestis* × *R. spinosissima*]

Remarks: Listed for Lleida province without specific location (Silvestre & Montserrat, 1998).

Rosa* × *hibernica Templeton [*R. canina* × *R. spinosissima*]

Distribution: Cn

Remarks: Reported from Montseny massif (Sáez & al., 2015a).

Rosa luciae Franch. & Rochebr. × ***R. setigera*** Michx.

Non-native: C

Distribution: Pe

Remarks: Reported from Camprodon, Ripollès (Aymerich, 2020a). It is an ornamental plant of hybrid origin in which might have involved another species of the genus.

Rosa micrantha* × *R. pouzinii*Distribution*: Pe*Remarks*: Reported from eastern Pyrenees without precise location (Vicioso, 1964).***Rosa pendulina* × *R. glauca****Remarks*: Listed for Girona province without precise location (Silvestre & Montserrat, 1998).***Rosa* × *reversa*** Waldst. & Kit. [*R. pendulina* × *R. spinosissima*]*Distribution*: Pe*Remarks*: Reported from La Cerdanya (Vicioso, 1964).***Rosa pendulina* × *R. villosa*** [? *R. ×intercalaris* Déségl.]*Distribution*: Pc***Rosa* × *scholapiorum*** Sennen [*R. gallica* × *R. micrantha*]*Non-native*: C*Distribution*: Cn***Rosa* × *suarezii*** Sennen [*R. gallica* × *R. micrantha*]*Non-native*: C*Distribution*: Cn***Rosa sicula* × ?*R. micrantha****Remarks*: Listed for Girona province without specific location (Silvestre & Montserrat, 1998).***Rosa tomentosa* × *R. villosa****Remarks*: Listed for Girona province without specific location (Silvestre & Montserrat, 1998)***Rubus caesius*** L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Rubus canescens*** DC.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category*: LC*Remarks*: *Rubus lloydianus* Genev. was treated as a synonym of *R. canescens* by Kurtto & Weber (2009). Monasterio-Huelin (1998) includes, with doubts, *R. lloydianus* within the synonymy of *R. canescens*. Recently, *R. lloydianus* has been reduced to synonymy of *R. aetnicus* Weston (Govaerts & al., 2021).

Rubus castellarnau Pau [*R. bifrons* auct., non Vest.]*Distribution:* Pa? Pc? Pe? Ppc? O*IUCN category:* DD*Remarks:* It is morphologically related to *R. vigo* and *R. praecox*. According to Monasterio-Huelin (1998) *R. castellarnau* is endemic to northwestern Iberian Peninsula.***Rubus castroviejo*** Monsaterio-Huelin*Distribution:* Pa O*IUCN category:* DD***Rubus hirtus*** Waldst. & Kit. [*R. ser. Glandulosi* sensu Bolòs & Vigo]*Distribution:* Pa Pc Pe Ppe O Cn*IUCN category:* LC*Remarks:* The morphological plasticity exhibited by this species is highly remarkable, and on this basis, several infraspecific taxa (or microspecies) were described.***Rubus idaeus*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cs*IUCN category:* LC***Rubus muricola*** Sennen*Distribution:* Pa Pc Ppe*IUCN category:* LC*Remarks:* Several reports of *Rubus corylifolius* (in a broad sense) are probably referable to *R. muricola*.***Rubus praecox*** Bertol.*Distribution:* ?Pa Pc Pe O*IUCN category:* LC*Remarks:* This species, morphologically close to *R. vigo*, was reported from the Pyrenees (Girona and Lleida provinces) (Monasterio-Huelin, 1998) and O (Oliver & Font, 2009).***Rubus radula*** Weihe [*R. genevieri* auct., p.p.]*Distribution:* Pa Pc Ppe O*IUCN category:* LC*Remarks:* *Rubus fuscus* Weihe [incl. *R. timbal-lagravei* P.J. Müll.] is closely related to *R. radula*.***Rubus saxatilis*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC

Rubus ulmifolius Schott*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* *Rubus arduennensis* subsp. *collicolus* Sudre was regarded as a possible synonym of *R. ulmifolius* (Monasterio-Huelin, 1998). This name was not included in the checklist of European taxa of *Rubus* (Kurtto & Weber, 2009). According to the latter authors, *R. arduennensis* Lej. is endemic to central and northern Europe.***Rubus vagabundus*** Samp.*Distribution:* Pc*IUCN category:* DD*Remarks:* Monasterio-Huelin (1990) reported this species from Vall de Cabdella (Pc).***Rubus vigo*** R. Roselló, Peris & Stübing [*R. weberanus* Monasterio-Huelin; *R. thyrsoideus* auct., p.p., *R. candicans* auct.]*Distribution:* Pa Pc Pe Ppc O Cn*IUCN category:* LC*Remarks:* Reports of *R. grabowski* Günther & al. and *R. thyranthus* Focke (Vigo, 1983) are referable to *R. vigo*.***Rubus caesius* × *R. ulmifolius****Distribution:* Pa Ppc R Cn Cc***Rubus canescens* × *R. ulmifolius****Distribution:* Ae O R Cn Cc***Sanguisorba officinalis*** L.*Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Sibbaldia procumbens*** L.*Distribution:* Pa Pc Pe*IUCN category:* LC***Sorbaria tomentosa*** (Lindl.) Rehder*Non-native:* C*Distribution:* Pe Cn*Remarks:* A rare garden escape, reported from suburban habitats in Barcelona (Morales, 1998) and Cerdanya plain (Aymerich, 2014).***Sorbus aucuparia*** L. subsp. *aucuparia**Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC

Spiraea cantoniensis Lour.*Non-native:* C*Distribution:* Pe Ae Aw Cn Cc Cs*Remarks:* Usually a relic of cultivation.*Spiraea crenata* L. subsp. *parvifolia* (Pau) Romo*Distribution:* Subendemic. Ppc Ae*IUCN category:* VU*Remarks:* Neither its taxonomic status nor its relationships have been fully appraised, and an in-depth study is required. The morphological characters used to distinguish it from typical *S. crenata* L. are few and further study may prove that they are not constant enough to be taxonomically useful.*Spiraea* × *vanhouttei* (Briot) Carrière [*S. cantoniensis* Lour. × *S. trilobata* L.]*Non-native:* C*Distribution:* Ae*Remarks:* Cultivated and sometimes escaped over short distances. It was reported from a single location in Berguedà (Aymerich, 2013d).*Torminalis glaberrima* (Gand.) Sennikov & Kurtto [*Sorbus torminalis* (L.) Crantz]*Distribution:* Pe Ppc Ppe Ae Aw Cn Cc Cs*IUCN category:* LC**ELAEAGNACEAE***Elaeagnus angustifolia* L.*Non-native:* C*Distribution:* S Cn Cc*Remarks:* Also cultivated in Ae, Aw, Cs and R.*Elaeagnus pungens* Thunb.*Non-native:* N*Distribution:* Ppe Cn*Remarks:* Known (as casual) from Viladrau (Osona), Ripoll and Sant Joan de les Abadesses (Ripollès) (Aymerich, 2020a); locally naturalised in Collserola mountain (Aymerich & Sáez, 2021c).**RHAMNACEAE***Atadinus alpinus* (L.) Raf. [*Rhamnus alpina* L.]*Distribution:* Pa Pc Pe Ppc Ppe Cs*IUCN category:* LC*Remarks:* For generic delineation see Hauenschild & al. (2016).

Atadinus pumilus (Turra) Hauenschild [*Rhamnus pumila* Turra]

Distribution: Pa Pc Pe Ppc Ppe Cc Cs

IUCN category: LC

Atadinus alpinus* × *A. pumilus [*R. alpina* × *R. pumila*; *Rhamnus × lemaniana* Briq.]

Distribution: Pe

Remarks: So far this taxon is known only from Tosa d'Alp (Aymerich, 2015a). Its distribution is probably more widespread than currently documented.

Frangula alnus Mill. subsp. *alnus*

Distribution: Pa Pc Pe Ppe Ae O Cn

IUCN category: LC

Paliurus spina-christi Mill.

Distribution: Ppe [Ae] [Aw] [O] R Cn [Cc] [Cs]

IUCN category: LC

Remarks: Only cultivated and casual in most of Cn area.

Rhamnus alaternus L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Rhamnus cathartica L.

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn

IUCN category: LC

Rhamnus infectoria L.

Distribution: Pc Ppc Ppe Ae Aw S ?O ?R ?Cn Cc Cs

IUCN category: LC

Remarks: According to Rivas Martínez & Pizarro (2013) *R. saxatilis* and *R. infectoria* are recognised here at species level; both species were traditionally treated as *R. saxatilis* in broad sense. The distribution and abundance of these species are poorly known (see Aymerich & Sáez, 2015).

Rhamnus lycioides L.

Distribution: Ppc Aw S Cn Cc Cs

IUCN category: LC

Remarks: Rivas Martínez & Pizarro (2013) reported from the studied area *R. oleoides* subsp. *assoana* Rivas Mart. & J.M. Pizarro, *R. lycioides* subsp. *lycioides* and *R. lycioides* subsp. *laderoii* Rivas Mart. & J.M. Pizarro. However, the characters used to separate *R. lycioides* and *R. oleoides* are sometimes unclear (see Aymerich & Sáez, 2015). On the basis of the characters provided by Rivas Martínez & Pizarro (2013), individuals referable to both species are usually found in a single population, both on the coast and inland.

Rhamnus saxatilis Jacq.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn ?Cc*IUCN category:* LC*Remarks:* According to Rivas Martínez & Pizarro (2013), *R. saxatilis* and *R. infectoria* are recognised here at species level; both species were traditionally treated as *R. saxatilis* in broad sense. The distribution and abundance of both species are poorly known (see Aymerich & Sáez, 2015).***Rhamnus ×colmeiroi*** Rivera, Obón & Selma [*R. lycioides* × *R. saxatilis*]*Distribution:* Cc Cs*Remarks:* Reported from Horta de Sant Joan, Terra Alta (Arrufat & al., 2008) and Montmell, Baix Penedès (Aymerich & Sáez, 2015).***Ziziphus jujuba*** Mill.*Non-native:* N*Distribution:* Pc Ppc Ppe Ae Aw O R Cn Cc Cs*Remarks:* This species persists in places where it was formerly cultivated, mainly through vegetative propagation.**ULMACEAE*****Ulmus glabra*** Huds.*Distribution:* Pa PcPe Ppc Ppe Ae O Cn Cc Cs*IUCN category:* LC***Ulmus laevis*** Pall.*Non-native:* N*Distribution:* Pe Ppe Cn Cc*Remarks:* Based on genetic data (Fuentes-Utrilla, 2014) the Iberian populations of *U. laevis* (including the only Catalan population sampled) were considered native. However, the characteristics of the Catalan populations suggest an introduced origin (Ballesteros, 1987; Aymerich, 2017d, 2019).***Ulmus minor*** Mill.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Ulmus pumila*** L.*Non-native:* N*Distribution:* Pc Ppe Ae Aw Cn Cc Cs*Remarks:* This species probably also occurs in other regions.***Ulmus ×hollandica*** Mill. [*U. glabra* × *U. minor*]*Distribution:* Ppe Ae ?Cs

CANNABACEAE*Cannabis sativa* L.

Non-native: C

Distribution: Ae Aw Cn Cc

Remarks: Cultivated, occasionally escaped.

Celtis australis L. subsp. *australis*

Non-native: I

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain. Nevertheless, it is usually considered an introduced species and fully naturalised.

Celtis occidentalis L.

Non-native: C

Distribution: S

Remarks: Observed in suburban fluvial habitats of Lleida (J. Pedrol & J.A.Conesa, pers. comm.).

Humulus lupulus L.Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

MORACEAE*Broussonetia papyrifera* (L.) Vent.

Non-native: N

Distribution: Pc Ppe Ae Aw O R Cn Cc Cs*Ficus carica* L.

Non-native: I

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain. It is regarded as an old introduction, widely escaped from cultivation. The available information is not enough to discriminate between cultivated and naturalised specimens.

Ficus elastica Hornem.

Non-native: C

Distribution: Cn Cc

Remarks: Listed without precise location for Barcelona metropolitan area (Basnou & al., 2015). Exocat (2020) mapped occurrences of this species for Maresme and Garraf counties.

Ficus rubiginosa Vent.*Non-native:* C*Distribution:* Cc*Remarks:* Reported from Cambrils, Baix Camp (Verloove & al., 2019).*Maclura pomifera* (Raf.) C.K. Schneid.*Non-native:* C*Distribution:* Ae Cn*Remarks:* Reported from Berguedà county (Aymerich, 2013) and Blanes, Selva (Verloove & Aymerich, 2020). This species is grown for ornament and constitutes populations which are probably stocks of formerly cultivated areas, due to its ability to reproduce vegetatively.*Morus alba* L.*Non-native:* N*Distribution:* Ppc Ae Aw S O Cn Cc Cs*Remarks:* Mainly casual, although in some locations (e.g. along Llobregat river) small naturalised populations can be found.*Morus nigra* L.*Non-native:* C*Distribution:* Aw Cn Cc Cs**URTICACEAE***Parietaria judaica* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Parietaria lusitanica* L. subsp. *lusitanica**Distribution:* R Cn Cs*IUCN category:* LC*Soleirolia soleirolii* (Req.) Dandy*Non-native:* N*Distribution:* Cn Cc*Remarks:* Cultivated in gardening and sometimes escaped (Casasayas, 1999); rarely becomes naturalised (Guardiola & al., 2009a).*Urtica dioica* L. subsp. *dioica**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Urtica membranacea* Savigny*Distribution:* R Cn Cc Cs*IUCN category:* LC

Urtica pilulifera* L.Distribution:* Ppc Ae Aw S R Cn Cc Cs*IUCN category:* LC***Urtica urens* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Urtica ×tremolsii* Sennen [*U. membranacea* × *U. urens*]***Distribution:* Cn**FAGACEAE*****Castanea sativa* Mill.***Non-native:* N*Distribution:* Pa Pc Pe Ppe Ae O R Cn Cc*Remarks:* It is considered an introduced species fully naturalised. Individuals from Aw and Cs are exclusively planted.***Fagus sylvatica* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn [Cc] Cs*IUCN category:* LC*Remarks:* Reported as locally naturalised from Muntanyes de Prades (Cc) (Sáez & al., 2000).***Quercus canariensis* Willd.***Distribution:* ?Ppe ?O Cn Cc*IUCN category:* LC*Remarks:* Scattered throughout Cn; rare in Prades mountains and its surroundings (Cc). Reports from O and Ppe (Alta Garrotxa) are probably referable to intermediate specimens between *Q. canariensis* and *Q. robur* or *Q. pubescens*.***Quercus cerrioides* Willk. & Costa***Distribution:* ?Pe Ppe Ae O R Cn Cc ?Cs*IUCN category:* LC*Remarks:* This species (presumably of hybrid origin) is morphologically close to *Q. pubescens*, *Q. canariensis* and *Q. faginea* (Franco, 1990). Most reports of *Q. cerrioides* from Pyrenees (Romo, 1989a; Carrillo & Ninot, 1992a) are referable to *Q. subpyrenaica*. The presence of *Q. cerrioides* in Cs requires confirmation (see comments under *Q. ×coutinhoi*). *Quercus cerrioides* can hybridise with *Q. ×fontqueri* [*Q. ×pau* C. Vicioso] in northeastern Catalonia (Vicioso, 1950).***Quercus coccifera* L. subsp. *coccifera****Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Quercus faginea Lam. subsp. *faginea**Distribution:* Ppc Ppe Aw S Cc Cs*IUCN category:* LC*Remarks:* Intermediate specimens between this species and *Q. ×desmotricha* (see below) were reported from Prades mountains in Cc (Schwarz, 1936).***Quercus ilex*** L. subsp. *ilex**Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC*Remarks:* In Central and Southern Catalonia (Ae, Aw, Cc and Cs) there seems to be a continuum in the phenotypical expressions between this taxon and *Q. ilex* subsp. *rotundifolia*.***Quercus ilex*** subsp. *rotundifolia* (Lam.) Tab. Morais [*Q. rotundifolia* Lam.; *Q. ballota* Desf.]*Distribution:* Pc Pe Ppc Ppe Ae Aw S Cc Cs*IUCN category:* LC*Remarks:* See Ferrer-Gallego & Sáez (2019) for taxonomy and nomenclature. Intermediate specimens linking the two extreme morphotypes, *Q. ilex* subsp. *rotundifolia* and *Q. ilex* subsp. *ilex* are numerous in the studied area.***Quercus huguetiana*** (Franco & G. López) Rivas Mart. & Sáenz [*Q. petraea* subsp. *huguetiana* Franco & G. López; *Q. petraea* subsp. *mas* auct., non (Thore) C. Vic.]*Distribution:* ?Pa Ppe Cn Cc*IUCN category:* LC*Remarks:* A specific status for this taxon was also assumed by Papini & al. (2011). Reports from Pa and Ppe (Vicioso, 1950, sub *Q. petraea* subsp. *mas*) require confirmation. According to Vicioso (1950, sub *Q. petraea* subsp. *mas*) *Q. huguetiana* hybridises with *Q. ×fontqueri*. These hybrids were reported from Prades (Cc) and Dosrius (Cn).***Quercus petraea*** (Matt.) Liebl.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn ?Cc*IUCN category:* LC*Remarks:* Reports from Cc (Prades mountains) are probably referable to *Q. huguetiana*.***Quercus pubescens*** Willd. [*Q. humilis* Mill.; *Q. pubescens* subsp. *palensis* auct., non (Palassou) O. Schwarz, p.p.]*Distribution:* Pa Pc Pe Ppc Ppe Ae ?Aw O R Cn Cc*IUCN category:* LC*Remarks:* This species is connected with numerous (probably of hybrid origin) intermediates with *Q. cerrioides*, *Q. faginea* and *Q. subpyrenaica*, among other species. In addition, *Q. pubescens* was often confused with some forms of *Q. cerrioides* and *Q. subpyrenaica*. Therefore, many reports of *Q. pubescens* are somewhat controversial.

Quercus pyrenaica Willd.*Distribution:* Cc*IUCN category:* LC*Remarks:* Restricted to Prades mountains. Reports from northern Catalonia (Ppc, O and Cn) are probably due to confusion with deviant forms of other species or hybrids.***Quercus robur*** L.*Distribution:* Pa Pc Pe Ppe Ae O Cn*IUCN category:* LC***Quercus rubra*** L.*Non-native:* C*Distribution:* Pe O Cn***Quercus suber*** L.*Distribution:* [Pc] Pe [Ae] O Cn Cc*IUCN category:* LC*Remarks:* Lumaret & al. (2005) indicated the occurrence of multiple events of local hybridisation and of subsequent genetic introgression between *Q. ilex* and *Q. suber*.***Quercus subpyrenaica*** E.H. del Villar [*Q. pubescens* subsp. *subpyrenaica* (Villar) Rivas Mart. & C. Sáenz; *Q. cerrioides* auct., non Willk. & Costa, p.p.; *Q. pubescens* subsp. *palensis* auct., non (Palassou) O. Schwarz, p.p.]*Distribution:* Pc ?Pe Ppc Ppe Ae Aw*IUCN category:* LC*Remarks:* This species shows morphological affinities both with *Q. pubescens* and *Q. faginea*, and is probably originated through introgressive hybridisation from *Q. faginea* to *Q. pubescens* (Franco, 1990). *Quercus subpyrenaica* that plays a major role in the transition forests between temperate and mediterranean environments in northeastern Spain (Abadía & al., 1996). It is widespread in the Pyrenees and also reaches Aw and Ae. Its presence in southern Catalonia is unclear.***Quercus ×anselmii*** Sennen [*Q. canariensis* × *Q. cerrioides*]*Distribution:* O Cn Cc*Remarks:* This poorly defined taxon [described from Collserola mountain (Sennen, 1936)] is probably not distinct from *Q. cerrioides*. A conclusive taxonomic ascription awaits the study of the type material.

Quercus* × *auzandrii Gren. & Godron nothosubsp. ***auzandrii*** [*Q.* × *catalaunica* Sennen; *Q. coccifera* × *Q. ilex* subsp. *ilex*]

Distribution: ?R Cc

Remarks: Masclans & Batalla (1964) reported this taxon from Prades. *Q.* × *catalaunica* Sennen (described from Llers, Alt Empordà) was regarded as hybrid between *Q. ilex* subsp. *rotundifolia* [as “*Ballota*”] and *Q. coccifera* (Sennen, 1912). In this study *Q.* × *catalaunica* is provisionally referred to *Q.* × *auzandrii* nothosubsp. *auzandrii*. However, a conclusive taxonomic ascription awaits the study of the type material.

Quercus* × *auzandrii nothosubsp. ***agrifolia*** (Batt.) M.B. Crespo & Mateo [*Q. coccifera* × *Q. ilex* subsp. *rotundifolia*]

Distribution: Cs

Remarks: Reported from Ports massif (Buirea & al., 2009).

Quercus* × *avellaniformis Colmeiro & Boutelou nothosubsp. ***morisii*** (Borzi) F.M. Vázquez, C. Pinto-Gomes & D. García [*Quercus* × *morisii* Borzi; *Q. ilex* subsp. *ilex* × *Q. suber*]

Distribution: O

Quercus* × *calvescens Vukot. [*Q.* × *streimii* Heifel; *Q. pubescens* × *Q. petraea*]

Distribution: Pc Pe Ppe Ae O Cn

Remarks: Reported by Schwarz (1936) and Vicioso (1950); later found elsewhere.

Quercus* × *costae C. Vicioso [*Q. huguetiana* × *Q. cerrioides*]

Distribution: Ppe O Cn

Remarks: Known from Montnegre and Mataró (Cn), Sant Joan de les Abadeses, Les Lloses (Ppe) and Olot (O) by Vicioso (1950). A report for Pa is somewhat doubtful. See comments under *Q. huguetiana* × *Q. pubescens*.

Quercus* × *coutinboi Samp. [*Q. faginea* subsp. *faginea* × *Q. robur*]

Distribution: Aw Cs

Remarks: Reported from northern Ports massif (Buirea & al., 2009); also found in Aw (J. Pedrol, unpubl. data). Some reports of *Q. cerrioides* from Cs (Port massif and Godall) are referable to this hybrid (Aparicio & Uribe-Echebarría. 2006; Buirea & al., 2009).

Quercus* × *desmotricha O. Schwarz [*Q. canariensis* × *Q. pubescens*]

Distribution: Cn Cc ?Cs

Remarks: Franco (1990) regarded this taxon as the hybrid between *Q. canariensis* and *Q. subpyrenaica*. However, morphological observations from specimens at the type location (Vallcanera, Selva) suggest that *Q.* × *desmotricha* was probably originated by hybridisation between *Q. canariensis* and *Q. pubescens*. Nevertheless, an accurate identification of its parental taxa remains to be done. Reports from Ports massif (Royo & al., 2008) requires confirmation.

Quercus* × *firmurensis Hy [*Q. pubescens* × *Q. pyrenaica*]*Distribution:* Cc*Remarks:* Reported from Tossal de la Baltassana, Prades mountains (Font Quer, 1934).***Quercus* × *fontqueri*** O. Schwarz [*Q. canariensis* × *Q. pyrenaica*]*Distribution:* O Cn Cc*Remarks:* Reported from many sites in northeastern Catalonia (Schwarz, 1936). Intermediate specimens between *Q. fontqueri* and *Q. petraea* were reported from Cn (Mataró and Olzinelles) by Vicioso (1950).***Quercus huguetiana* × *Q. pubescens****Distribution:* Ae Cn Cc*Remarks:* Vicioso (1950) and Masclans & Batalla (1964) reported this taxon for northern Catalonia and Prades mountains, respectively. The name *Q. costae* C. Vicioso, which was applied to designate intermediate specimens between *Q. huguetiana* and *Q. cerrioides*, could actually correspond to a hybrid between *Q. huguetiana* and *Q. pubescens*. A conclusive taxonomic ascription awaits the study of the type material.***Quercus* × *jahandiezii*** A. Camus [*Q. canariensis* × *Q. faginea*]*Distribution:* Cc*Remarks:* Masclans & Batalla (1964) reported this taxon for Prades mountains.***Quercus* × *kernerii*** Simkovicis [*Q. xteriana* Vicioso; *Q. pubescens* × *Q. robur*]*Distribution:* Ppe O Cn ?Cc*Remarks:* Intermediate specimens between *Q. pubescens* (in broad sense) and *Q. robur* were reported from Sant Joan de les Abadeses (Pe), Olot (O), Gavà (Cc), Montseny massif and Sant Miquel del Fai (Cn) (see Vicioso, 1950). Some of these specimens are probably due to crosses between *Q. cerrioides* and *Q. robur*.***Quercus* × *legionensis*** C. Vicioso [*Q. huguetiana* × *Q. pyrenaica*]*Distribution:* Cc*Remarks:* Inter-specific hybrids between *Q. huguetiana* and *Q. pyrenaica* are apparently restricted to Muntanyes de Prades (Masclans & Batalla, 1964). According to Vicioso (1950), reports of these hybrids from St. Quirze de Besora (Ppe), Collserola and Roca del Vallès (Cn) due to Schwarz (1936) are probably referable to *Q. cerrioides*.***Quercus* × *montserratii*** C. Vicioso [*Q. cerrioides* × *Q. robur*]*Distribution:* Cn*Remarks:* Vicoso (1950) reported this taxon from Montnegre and its surroundings.***Quercus* × *numantina*** Ceballos & C. Vicioso [*Q. faginea* × *Q. pyrenaica*]*Distribution:* Cn Cc*Remarks:* Reported from Prades mountains and Montseny massif (Vicioso, 1950).

Quercus ×rosacea Bechst. [*Q. petraea* × *Q. robur*]

Distribution: Pa

Remarks: Reported from Baricauba (Schwarz, 1936; Vicioso, 1950).

Quercus ×salcedoi C. Vicioso [*Q. faginea* × *Q. petraea*]

Distribution: Cs

Remarks: Reported from northern Ports massif by Buira & al. (2009).

Quercus ×senneniana Camus [*Q. faginea* × *Q. ilex* subsp. *rotundifolia*]

Distribution: Cc Cs

Remarks: Reported from Montagut mountain (Alt Camp) and Prades mountains (Vicoso 1950, Masclans & Batalla, 1964); also known from Ports massif.

Quercus ×viveri Sennen [*Q. canariensis* × *Q. huguetiana*]

Distribution: Cn

Remarks: Known from Montnegre and Collserola mountains and Montseny massif. This taxon was interpreted by Schwarz (1936) as a result of hybridisation between *Q. robur* and *Q. canariensis*. An accurate identification of its parental taxa remains to be done.

JUGLANDACEAE

Carya illinoensis (Wangenh.) K. Koch

Non-native: C

Distribution: Cs

Remarks: Reported from a riparian islet in Ebre river (Royo, 2006), probably escaped from cultivation in close areas.

Juglans regia L.

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: The available information is not enough to discriminate between cultivated and naturalised specimens. Apparently, the most important naturalised populations are found in Pyrenean valleys.

Juglans ×intermedia Carrière

Non-native: C

Distribution: Ae Cn

Remarks: Cultivated for timber and rarely escaped. First report from Berguedà (Aymerich, 2013d, sub *J. nigra*). The name *J. ×intermedia* is used here in a horticultural sense (to designate hybrids between American species and *J. regia*) because the identity of the name proposed by Carrière is uncertain. The observed plants correspond to the commercial cultivar MJ209, presumably arisen through hybridisation between *J. regia* and *J. major*.

CASUARINACEAE

Casuarina cunninghamiana Miq.

Non-native: C

Distribution: Cn

Remarks: Long ago known from urban habitats in Barcelona (Casasayas, 1989).

BETULACEAE

Alnus alnobetula (Ehrh.) K. Koch subsp. *alnobetula* [*A. viridis* (Chaix) DC. subsp. *viridis*]

Non-native: I

Distribution: Pa

Remarks: Known from two locations distant from each other more than 10 km (Benito & al., 1995; Renobales & López Quintana, 2000). The species has probably colonised Pa from individuals planted in neighboring French areas.

Alnus cordata (Loisel.) Duby

Non-native: C

Distribution: +Cn

Remarks: Only collected in Ter river (Cellera de Ter) in early 20th century, growing together with *A. glutinosa*. Its presence in this area has not been recently confirmed. However, *A. cordata* is cultivated in gardens and forestry nurseries.

Alnus glutinosa (L.) Gaertn.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Betula pendula Roth

Distribution: Pa Pc Pe Ppc Ppe [Ae] [Aw] O Cn [Cc] [Cs]

IUCN category: LC

Betula pubescens Ehrh.

Distribution: Pa Pc Pe

IUCN category: LC

Betula ×aschersoniana Hayek [*B. pendula* × *B. pubescens*]

Distribution: Pc Pe

Carpinus betulus L.

Non-native: C

Distribution: Ppe Ae Cn Cc

Remarks: It appears as isolated individuals, not forming true populations.

Corylus avellana* L.Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Corylus colurna* L.***Non-native:* C*Distribution:* Ae*Remarks:* Reported from Avià, Berguedà (Aymerich, 2019).**CORIARIACEAE*****Coriaria myrtifolia* L.***Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC**CUCURBITACEAE*****Bryonia cretica* L. subsp. *dioica* (Jacq.) Tutin [*B. dioica* Jacq.]***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Citrullus colocynthis* (L.) Schrad.***Non-native:* C*Distribution:* R Cn Cc***Citrullus lanatus* (Thunb.) Matsum. & Nakai***Non-native:* C*Distribution:* Ppc Ppe S O R Cn Cc Cs*Remarks:* It is in the naturalisation process in some riparian habitats.***Cucumis melo* L.***Non-native:* C*Distribution:* O Cc Cs*Remarks:* Cultivated in vegetable gardens, sometimes escaped. The available information about escaped specimens is scarce.***Cucumis sativus* L.***Non-native:* C*Distribution:* Ppc S O R*Remarks:* Cultivated in vegetable gardens, sometimes escaped. The available information about escaped specimens is scarce.***Cucurbita maxima* Duchesne***Non-native:* C*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Cucurbita moschata Duchesne*Non-native:* C*Distribution:* Ppe O Cn Cc*Remarks:* Cultivated in vegetable gardens, sometimes escaped; see Gómez-Bellver & al. (2019c).*Cucurbita pepo* L.*Non-native:* C*Distribution:* Ppc O Cc Cs*Remarks:* Cultivated in vegetable gardens, sometimes escaped. The available information about escaped specimens is scarce.*Ecballium elaterium* (L.) A. Rich. *elaterium**Distribution:* Pc Ppc Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* The presence of dioecious plants [*E. elaterium* subsp. *dioicum* (Batt.) Costich] in our area requires confirmation.*Sicyos angulatus* L.*Non-native:* I*Distribution:* S Cn*Remarks:* A local invasive of riparian forests of Ter (Cn). It is naturalised as a weed of cornfields in S.**BEGONIACEAE***Begonia ×semperflorens* Link & Otto*Non-native:* C*Distribution:* Pe*Remarks:* Observed once at Ribes valley (Aymerich, 2017b).**CELASTRACEAE***Euonymus europaeus* L. [*Evonymus europaeus* Mill.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC*Euonymus japonicus* Thunb. [*Evonymus japonicus* L.]*Non-native:* C*Distribution:* Aw O Cn*Parnassia palustris* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cs*IUCN category:* LC

OXALIDACEAE

Oxalis acetosella L. subsp. *acetosella*

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Oxalis articulata Savigny

Non-native: N

Distribution: Ppc Ae Aw S O R Cn Cc Cs

Oxalis bowiei G. Don

Non-native: C

Distribution: Cn Cc

Remarks: Reported from Maresme (Casasayas, 1989), Baix Ebre (Aymerich & Gustamante, 2016) and Baix Empordà (Mallol & López, 2019).

Oxalis corniculata L.

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Oxalis conorrhiza Jacq.

Non-native: C

Distribution: +Cn

Remarks: Probably vanished in Cn (Terrassa), where it was collected in early 20th century (Cadevall, 1915; Bolòs, 1950).

Oxalis debilis Kunth [*O. debilis* subsp. *corymbosa* (DC.) O. Bolòs & Vigo]

Non-native: N

Distribution: Pc Pe Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its detailed distribution is poorly known; sometimes confused with *O. vallicola*.

Oxalis dillenii Jacq. [*O. corniculata* subsp. *stricta* (L.) Briq.]

Non-native: N

Distribution: Ae Aw Cn Cc

Oxalis latifolia Kunth

Non-native: N

Distribution: Pe Ppe Ae Aw O R Cn Cc ?Cs

Remarks: Its detailed distribution is poorly known. Many reports of *O. latifolia* in a broad sense belong to *O. vallicola*.

Oxalis pes-caprae L.

Non-native: N

Distribution: R Cn Cc Cs

Oxalis triangularis A. St.-Hil. subsp. *papilionacea* (Zucc.) Lourteig.

Non-native: C

Distribution: O

Remarks: Reported by Oliver (2019).

Oxalis vallicola (Rose) R. Kunth

Non-native: N

Distribution: ?Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its detailed distribution is poorly known; several reports of *O. latifolia* in a broad sense belong to *O. vallicola*. *Oxalis vallicola* was sometimes confused with *O. debilis*.

HYPERICACEAE

Hypericum androsaemum L.

Distribution: Pa Pe Ppe Ae O Cn Cc Cs

IUCN category: LC

Hypericum calycinum L.

Non-native: N

Distribution: Ppe Aw O Cn

Remarks: Cultivated for ornament; rarely reported as escaped.

Hypericum canariense L.

Non-native: C

Distribution: Cn

Remarks: Casual in Blanes, Selva (Verloove & Aymerich, 2020).

Hypericum caprifolium Boiss.

Distribution: Cc Cs

IUCN category: NT

Hypericum elodes L.

Distribution: Cn

IUCN category: RE

Remarks: Known only from a small area in Cadiretes massif (Ballesteros, 1984). It was not found again in the past three decades and has probably become extinct (Sáez & al., 2010).

Hypericum hircinum L. subsp. *majus* (Aiton) N. Robson [*H. hircinum* auct.]

Non-native: C

Distribution: +R

Remarks: A collection from Figueres in early 20th century (Casasayas, 1985) is the only known occurrence in our area.

Hypericum hirsutum* L.Distribution:* Pa Ppe Ae O R Cn Cs*IUCN category:* LC***Hypericum humifusum* L.***Distribution:* Pa Pc Pe Ppe O R Cn*IUCN category:* LC***Hypericum maculatum* Crantz subsp. *maculatum****Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Hypericum montanum* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Hypericum nummularium* L.***Distribution:* Pa Pc*IUCN category:* NT***Hypericum linariifolium* Vahl.***Distribution:* Pa Pc*IUCN category:* VU***Hypericum perforatum* L. subsp. *perforatum****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Hypericum perforatum* subsp. *veronense* (Schrank) H. Lindb. [*H. perforatum* subsp. *angustifolium* (DC.) A. Fröhl.]***Distribution:* Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably overlooked and more common than known.***Hypericum pulchrum* L.***Distribution:* Pa Cn*IUCN category:* NT***Hypericum richeri* Vill. subsp. *burseri* (DC.) Nyman***Distribution:* Pa Pc*IUCN category:* LC*Remarks:* Reports from Pe and Ppe are erroneous.

Hypericum tetrapterum Fr.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Hypericum tomentosum*** L.*Distribution:* Aw R Cn Cc Cs*IUCN category:* LC***Hypericum triquetrifolium*** Turra*Non-native:* C*Distribution:* +Cn*Remarks:* Reported from Barcelona and Vallès areas (Bolòs, 1950; Casasayas, 1989). Its current presence in the studied area requires confirmation, since the last confirmed report goes back to 19th century.**ELATINACEAE*****Bergia capensis*** L.*Non-native:* N*Distribution:* R Cc Cs*Remarks:* Also reported from Aragon, close to the boundary of S.***Elatine alsinastrum*** L.*Distribution:* R*IUCN category:* CR*Remarks:* Restricted to two temporary ponds in lower Albera massif (see Sáez & al., 2010).***Elatine brochonii*** Clavaud*Distribution:* R*IUCN category:* VU*Remarks:* Restricted to a few temporary ponds in lower Albera massif (see Sáez & al., 2010).***Elatine gussonei*** (Sommier) Brullo, Lanfr., Pavone & Ronsiv.*Distribution:* R*IUCN category:* CR*Remarks:* So far this species is known only from Vilaüt temporary pond (Alt Empordà), where it was confused with *E. macropoda* (see Aymerich & Sáez, 2021a). See comments under *E. macropoda*.

Elatine macropoda Guss. [*E. hydropiper* subsp. *macropoda* (Guss.) O. Bolòs & Vigo]

Distribution: ?R Cn

IUCN category: EN

Remarks: Only known from Cadiretes massif, Baix Empordà (see Aymerich & Sáez, 2021a). Unpublished occurrences from Cap de Creus and Begur require confirmation, since confusion with *E. gussonei* is possible.

VIOLACEAE

Viola alba Besser subsp. ***denhardtii*** (Ten.) W. Becker [*V. cadevallii* Pau]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The presence of two sympatric subspecies has usually been accepted: subsp. *alba* [=subsp. *scotophylla* Nyman] and subsp. *denhardtii*. However, according to Marcussen (2003) the populations of the studied area are usually referable to subsp. *denhardtii*. Only some isolated specimens from the Pyrenees are morphologically close to subsp. *alba*, and they were probably originated through introgressive hybridisation between both subspecies.

Viola arborescens Gand.

Distribution: Cn Cc Cs

IUCN category: LC

Viola arvensis Murray [*V. tricolor* subsp. *arvensis* (Murray) Gaudin]

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Viola biflora L. subsp. ***biflora***

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Viola bubanii Timb.-Lagr.

Distribution: Cn

IUCN category: LC

Remarks: Also reported from French locations close to Pa.

Viola canina L. [*V. canina* subsp. *montana* (L.) Hartm.; *V. canina* subsp. *silvensis* (Font Quer) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Viola cornuta L.

Distribution: Pa Pc

IUCN category: LC

Viola diversifolia (Ging.) W. Becker [*V. cenisia* L. subsp. *lapeyrousiana* Rouy & Foucaud]

Distribution: Pc Pe

IUCN category: LC

Viola birta L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn ?Cs

IUCN category: LC

Remarks: The identity of the specimens from Serra del Montsià (Cs) remains uncertain (see Royo, 2006)

Viola kitaibeliana Schult. [*V. tricolor* subsp. *minima* Gaudin]

Distribution: Pc Ppc Ppe Ae S R Cn Cc Cs

IUCN category: LC

Viola mirabilis L.

Distribution: Pc Pe Ppc Ppe Ae O

IUCN category: LC

Viola odorata L.

Distribution: Pa Pe Ppe Ae [Aw] O R Cn Cs

IUCN category: LC

Remarks: Its native status in some areas is uncertain. The presence of naturalised populations was indicated in lowlands of Cs (Royo, 2006).

Viola palustris L. subsp. *palustris*

Distribution: Pa Pc Pe Ppc

IUCN category: LC

Viola parvula Tineo [*V. tricolor* subsp. *bellidioides* Litard.]

Distribution: Pc Pe Ppc

IUCN category: NT

Viola pyrenaica DC.

Distribution: Pa Pc Pe

IUCN category: LC

Viola reichenbachiana Jord. [*V. sylvestris* Lam., nom. illeg.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Viola riviniana Rchb. [*V. sylvestris* Lam. subsp. *riviniana* (Rchb.) Tourlet]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Viola rupestris F.W. Schmidt subsp. ***rupestris****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs*IUCN category:* LC***Viola suavis*** M. Bieb.*Distribution:* Pc Pe Ppc Ppe [Ae] [Aw] S O R Cn Cc Cs*IUCN category:* LC

Remarks: A white-flowered morphotype of *V. suavis* of garden origin was called *V. suavis* subsp. *catalonica* (W. Becker) O. Bolòs & Vigo. These white-flowered plants mainly occur in disturbed places or riparian habitats. Molecular and morphological investigation of the white-flowered populations from NE Iberian Peninsula and C & SE Europe concluded that they were unambiguously placed within the variation range of the typical (blue-flowered) *V. suavis* and thus can be considered conspecific with this species (Mered'a & al., 2008).

Viola tricolor subsp. ***subalpina*** Gaudin [*V. saxatilis* F.W. Schmidt]*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Viola tricolor*** L. subsp. ***tricolor****Non-native:* C*Distribution:* Pc

Remarks: Cultivated in gardens, sometimes escaped in Pallars Sobirà county (Aymerich, 2017b).

Viola willkommii R. Roem.*Distribution:* Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Viola ×adulterina*** Godr. [*V. alba* × *V. hirta*]

Remarks: Reported by Bolòs & Vigo (1990) without precise location.

Viola ×marcetii Becker [*V. reichenbachiana* × *V. willkommii*]*Distribution:* Aw Cc***Viola ×multicaulis*** Jord. [*V. alba* × *V. odorata*]

Remarks: Reported by Bolòs & Vigo (1990) without precise location.

Viola ×pseudomirabilis H.J. Coste [*V. mirabilis* × *V. riviniana*]*Distribution:* Ppe

Remarks: This taxon was reported from several locations; some reports of *V. mirabilis* actually correspond to this hybrid (Vigo & al., 2003).

Viola × *scabra* F. Braun [*V. hirta* × *V. odorata*]

Remarks: Reported by Bolòs & Vigo (1990) without precise location.

Viola × *wittrockiana* Gams [*V. tricolor* L. × *V. lutea* Huds. × *V. altaica* Ker Gawl.]

Non-native: C

Distribution: Pc Pe Ppe Ae ?O Cn Cs

Remarks: Cultivated in gardens, sometimes escaped over short distances.

PASSIFLORACEAE

Passiflora caerulea L.

Non-native: N

Distribution: Ae Aw O Cn Cc

Passiflora × *belotii* Pépin [*P. alata* Curtis × *P. caerulea*]

Non-native: C

Distribution: ?Cn ?Cc

Remarks: Listed without precise location for Barcelona metropolitan area (Basnou & al., 2015). We do not know the background of this report.

SALICACEAE

Populus alba L.

Distribution: [Pc] [Pe] Ppc [Ppe] Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Some populations in Ae and O are also introduced.

Populus balsamifera L.

Non-native: C

Distribution: Cn

Remarks: Reported from Vilanova de Sau (Pérez-Haase & al., 2013). The identity of these plants require confirmation, since a confusion with *P. trichocarpa* cannot be excluded.

Populus deltoides Marshall

Non-native: C

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cs

Remarks: Cultivated, sometimes escaped.

Populus nigra L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O [R] Cn [Cc] [Cs]

IUCN category: LC

Remarks: Probably introduced in southern Catalonia (Cc and Cs).

Populus tremula L. subsp. *tremula**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc [Cs]*IUCN category:* LC*Remarks:* In Mediterranean-influenced areas this species shows fluctuations both in distribution area and abundance. These fluctuations are related to forest fires, favoring the species spreading.***Populus trichocarpa*** Hook.*Non-native:* C*Distribution:* Pc Pe ?O*Remarks:* Known from three locations in Ripollès, Cerdanya and Pallars Sobirà (Aymerich, 2019, 2020a), where it shows signs of vegetative reproduction.***Populus ×canadensis*** Moench [*P. deltoides* × *P. nigra*]*Non-native:* C*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Commonly cultivated and often escaped, not forming true naturalised populations.***Populus ×canescens*** (Aiton) Sm. [*P. alba* × *P. tremula*]*Non-native:* C*Distribution:* Ppe S ?Cn ?Cs*Remarks:* Its presence was confirmed by Aymerich & Sáez (2015) and Aymerich (2016a). Old reports from Ebre river (Cs) and Selva county (Cn) require confirmation. Intermediate specimens (presumably of hybrid origin) between *P. ×canescens* and *P. tremula*, and apparently planted, have been found in Segre river (Alt Urgell).***Salix alba*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Salix atrocinerea*** Brot. [*S. cinerea* subsp. *oleifolia* Macgreith; *S. cinerea* var. *atrocinerea* (Brot.) O. Bolòs & Vigo]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Salix aurita*** L.*Distribution:* Pa*IUCN category:* VU*Remarks:* It is apparently very rare in Pa; also reported from French locations close to the Pe boundary. Old reports from Pc, Ppe, O, Cn are erroneous.

Salix babylonica L.*Non-native:* C*Distribution:* Aw O R Cs

Remarks: Commonly planted and occasionally escaped. Some reports are probably referable to hybrids with *S. alba* (*S. ×sepulcralis* Simonk.). *Salix matsudana* Koidz. (here treated as a form of *S. babylonica*) was reported from the Ebre Delta.

Salix bicolor Willd. [*S. phyllicifolia* subsp. *bicolor* (Willd.) O. Bolòs & Vigo]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Salix caprea*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC

Remarks: In Mediterranean-influenced areas, this species shows fluctuations both in distribution area and abundance, these associated to forest fires, favoring its spreading.

Salix daphnoides Vill.*Distribution:* Pa Pc*IUCN category:* VU***Salix elaeagnos*** Scop.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Salix foetida*** DC. [*S. arbuscula* subsp. *foetida* (DC.) Braun-Blanq.]*Distribution:* Pa*IUCN category:* EN

Remarks: So far it is known only from Varradòs (Nuet, 2019); not found recently in Aiguamòg valley where it was reported on the basis of a poorly documented observation in the late 20th century (see Sáez & al., 2010).

Salix hastata L.*Distribution:* ?Pa Pc*IUCN category:* EN

Remarks: So far it is known only from a location in the upper Noguera Pallaresa valley (Aymerich, 2009b; Sáez & al., 2010). An old report from Pa (Bubani, 1897) has not been recently confirmed.

Salix herbacea L.*Distribution:* Pa Pc Pe*IUCN category:* LC

Salix lapponum L. [*S. lapponum* subsp. *ceretana* P. Monts.; *S. ceretana* (P. Monts.) Chmelar]

Distribution: Pa Pc

IUCN category: NT

Remarks: Prostrate or dwarf plants growing in damp places were called *S. ceretana* or *S. lapponum* subsp. *ceretana*. In the Pyrenees, typical specimens up to 1-2 m height can be found even in the same location and are connected to dwarf plants by intermediates. All evidence suggests that *S. lapponum* subsp. *ceretana* should be included within the variability of *S. lapponum* without any taxonomic designation.

Salix pentandra L.

Non-native: C

Distribution: Ppe

Remarks: Reported from Segre river close Seu d'Urgell (Pedrol, 2017). Some native populations of this species exist within French territory not far from Pe boundary.

Salix purpurea L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Salix pyrenaica Gouan

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Salix reticulata L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Salix retusa L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Salix tarraconensis Pau

Distribution: Subendemic. Cc Cs

IUCN category: NT

Salix triandra L.

Distribution: Pa Pc Pe Ppc Ppe S R Cn Cc Cs

IUCN category: LC

Salix viminalis L.

Non-native: C

Distribution: Ppe

Remarks: Reported, exceptionally, as locally naturalised without indicating precise locations. Available occurrences of *S. viminalis* mostly refer to cultivated specimens.

Salix* × *abnormis Rouy [*S. elaeagnos* × *S. pyrenaica*]

Distribution: Ppe

Salix* × *altobracensis Coste [*S. cinerea* × *S. bicolor*]

Distribution: Pa Pc Pe

Salix bicolor* × *S. lapponum

Distribution: Pc

Salix* × *erythroclados Simonk. [*S. alba* × *S. triandra*]

Distribution: Cn

Salix* × *fontqueri Goerz [*S. pyrenaica* × *S. reticulata*]

Distribution: Pc

Salix* × *fragilis L. [*S. alba* × *S. euxina* I.V. Belyaeva; *S.* × *rubens* Schrank]

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe S O R Cn Cc Cs

Remarks: See Aymerich & Sáez (2015) for taxonomy.

Salix* × *laurina Sm. [*S. bicolor* × *S. caprea*]

Distribution: Pe

Salix* × *quercifolia Sennen [*S. caprea* × *S. cinerea* var. *atrocinerea*]

Distribution: Pc Pe Ppe O Cn

Salix* × *rubra Huds. [*S. purpurea* × *S. viminalis*]

Non-native: C

Distribution: Cn

Salix* × *sepulcralis Simonk. [*S. alba* × *S. babylonica*]

Non-native: C

Distribution: Ppe Aw Cn Cc

Remarks: Often confused with *S. babylonica* (Aymerich & Sáez, 2015).

Salix* × *schinziana Braun-Blanq. [*S. herbacea* × *S. pyrenaica*]

Distribution: Pe

Salix* × *viciosorum Sennen & Pau [*S. cinerea* var. *atrocinerea* × *S. purpurea*]

Distribution: Cn ?Cc

EUPHORBIACEAE

Acalypha rhomboidea Raf. [*A. virginica* L. var. *rhomboidea* (Raf.) Cooperr.]

Non-native: N

Distribution: Cn

Remarks: Found in Guillerries massif (J. Gesti & L. Vilar, unpubl. data).

Chrozophora tinctoria (L.) A. Juss.

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Euphorbia amygdaloides L. subsp. *amygdaloides*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Euphorbia angulata Jacq. [*E. dulcis* subsp. *angulata* (Jacq.) Rouy]

Distribution: Pa Pc Pe Ppe Ae

IUCN category: LC

Euphorbia biumbellata Poir.

Distribution: Pe O R Cn Cc

IUCN category: LC

Remarks: It probably has colonised recently Garrotxa (O). Human activity has favoured its spread through roadsides (Oliver & Font, 2009).

Euphorbia chamaesyce L. subsp. *chamaesyce* [*Chamaesyce canescens* (L.) Prokh. subsp. *canescens*]

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain. Its distribution is poorly known, due to misidentifications with other species included in subgenus *Chamaesyce*.

Euphorbia characias L. subsp. *characias*

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Imprecise reports from Pa require confirmation.

Euphorbia cyparissias L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn

IUCN category: LC

Remarks: It is also naturalised in waysides in northern Castelló province, close to the boundary of Cs (Royo, 2006).

Euphorbia davidii Subils*Non-native*: N*Distribution*: Cn*Remarks*: Reported from roadsides in the Barcelona area (Pyke, 2008b, sub *E. dentata* Michx.; Aymerich & Sáez, 2015; Gómez-Bellver & al., 2016).***Euphorbia dendroides*** L.*Distribution*: R Cn*IUCN category*: LC***Euphorbia dulcis*** L.*Distribution*: Pe Ppc Ppe Ae O Cn*IUCN category*: LC***Euphorbia duvalii*** Lecoq & Lamotte*Distribution*: Ppe*IUCN category*: VU*Remarks*: Bou & Bou (2018) confirmed its occurrence in Bac Grillera mountain, Alt Empordà.***Euphorbia exigua*** L. subsp. *exigua**Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Euphorbia falcata*** L. subsp. *falcata**Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Euphorbia flavicoma*** DC. subsp. *flavicoma* [*E. flavicoma* subsp. *mariolensis* (Rouy) O. Bolòs & Vigo]*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Euphorbia glyptosperma*** Engelm. [*Chamaesyce glyptosperma* (Engelm.) Small]*Non-native*: N*Distribution*: Aw*Remarks*: A naturalised population is known from Puig-reig, middle Llobregat basin (Aymerich, 2016a).***Euphorbia helioscopia*** L. subsp. *helioscopia**Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC

Euphorbia helioscopia subsp. ***helioscopoides*** (Loscos & J. Pardo) Nyman*Distribution:* Ppc S Cs*IUCN category:* LC*Remarks:* Some populations include plants morphologically intermediate between *E. helioscopia* subsp. *helioscopia* and *E. helioscopia* subsp. *helioscopoides*.***Euphorbia hirsuta*** L.*Distribution:* Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* An old report for the contact area between Ae and Ppe is probably erroneous.***Euphorbia humifusa*** Willd. [*Chamaesyce humifusa* (Willd.) Prokh.]*Non-native:* N*Distribution:* Aw Cn***Euphorbia hyberna*** L. subsp. ***hyberna****IUCN category:* LC*Distribution:* Pa Pc***Euphorbia hypericifolia*** L. [*Chamaesyce glomerifera* Millsp.]*Non-native:* C*Distribution:* Cn*Remarks:* First report from Montgat (Verloove, 2006).***Euphorbia isatidifolia*** Lam.*Distribution:* Aw*IUCN category:* LC*Remarks:* Also reported from Castelló province close to the boundary of Cs.***Euphorbia lagascae*** Spreng.*Distribution:* Ppc Cc Cs*IUCN category:* LC***Euphorbia lathyris*** L.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*Remarks:* This species was formerly cultivated; some persistent populations are found in the neighborhood of rural villages.***Euphorbia maculata*** L. [*Chamaesyce maculata* (L.) Small]*Non-native:* I*Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Euphorbia marginata Pursh.*Non-native*: C*Distribution*: Aw S Cn Cs*Remarks*: Cultivated for ornament; escaped in scattered places.***Euphorbia minuta*** Loscos & J. Pardo*Distribution*: Ppc Aw S Cc Cs*IUCN category*: LC*Remarks*: Some densely papillose plants growing in chalky soils in Ebre's depression (Huesca and Lleida provinces) were recognised as subsp. *moleiroi* P. Monts. & Ferrández. However they represent only extreme variants not worthy of taxonomic recognition.***Euphorbia nevadensis*** Boiss. & Reut. subsp. ***aragonensis*** (Loscos & J. Pardo) O. Bolòs & Vigo [incl. subsp. *bolosii* Molero & Rovira]*Distribution*: Ppc Ppe Aw Cc Cs*IUCN category*: LC*Remarks*: The morphological characters used to distinguish subsp. *bolosii* Molero & Rovira from subsp. *nevadensis* are not constant enough to be taxonomically useful. These taxa are largely sympatric, showing many combinations of characters and are connected by intermediates.***Euphorbia nicaeensis*** All. subsp. ***nicaeensis****Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Euphorbia nutans*** Lag. [*Chamaesyce nutans* (Lag.) Small]*Non-native*: I*Distribution*: Ppc Ppe Ae Aw S O R Cn Cc Cs***Euphorbia palustris*** L.*Distribution*: R*IUCN category*: VU***Euphorbia paralias*** L.*Distribution*: Ae Cn Cc Cs*IUCN category*: LC***Euphorbia peplis*** L. [*Chamaesyce peplis* (L.) Prokh.]*Distribution*: Ae Cn Cc Cs*IUCN category*: LC***Euphorbia peplus*** L.*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC

Euphorbia platyphyllos* L.Distribution:* Pc Ppc Ppe Ae S O R Cn Cc*IUCN category:* LC***Euphorbia prostrata* Aiton [*Chamaesyce prostrata* (Aiton) Small]***Non-native:* I*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Euphorbia saratoi* Ard. [*E. esula* subsp. *saratoi* (Ard.) P. Fourn.; *E. ×pseudovirgata* (Schur) Soó]***Non-native:* N*Distribution:* Pc Aw +S +R Cc*Remarks:* Its non-native status is uncertain. The treatment proposed by Reichert & al. (2018) is followed here. See Molero & al. (2012) for its detailed distribution (as *E. virgata* Waldst. & Kit.); also found in Vall Ferrera (Pc) by P. Aymerich.***Euphorbia segetalis* L. [incl. *E. segetalis* subsp. *pineae* (L.) Hayek, *E. pineae* L.]***Distribution:* ?Pa Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Populations from inland areas are probably introduced and unstable. Perennial plants from rocky coastal areas were sometimes recognised as var. *pineae* (L.) Lange. The presence of *E. segetalis* in Pa (Llenas, 2012) requires confirmation.***Euphorbia seguieriana* Neck. subsp. *seguieriana****Distribution:* Pc Pe Ppc Ppe Aw S R Cn Cc ?Cs*IUCN category:* LC*Remarks:* Its presence in Cs (Ebre river) has hitherto not been well documented, since some reports are based on confusion with *E. terracina*.***Euphorbia serpens* Kunth [*Chamaesyce serpens* (Kunth) Small]***Non-native:* N*Distribution:* Ppe Aw S O R Cn Cc Cs***Euphorbia serrata* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Euphorbia sulcata* Loisel.***Distribution:* Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably overlooked as a result of confusion with *E. exigua*.

Euphorbia terracina L.*Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* In inland areas this species form unstable populations in roadsides and waste places.***Euphorbia verrucosa*** L. [*E. brittingeri* Samp.; *E. flavicoma* subsp. *brittingeri* (Samp.) O. Bolòs & Vigo]*Distribution:* Pa Pc ?Ppc Ppe Ae O R Cn*IUCN category:* LC*Remarks:* Its presence in Ppc requires confirmation.***Euphorbia villosa*** Willd. [*E. illirica* Lam.]*Distribution:* Pe Ppc Ae O R Cn*IUCN category:* LC***Manibot grahamii*** Hook.*Non-native:* C*Distribution:* Cc Cs*Remarks:* Reported from Cambrils, Baix Camp (Verloove & al., 2019) and Ulldesona, Montsià (Senar & Cardero, 2019).***Mercurialis ambigua*** L. fil. [*M. annua* subsp. *ambigua* (L. fil.) Arcang.]*Distribution:* ?Ppc ?Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Usually reported as *M. annua* in a broad sense. The distribution of *M. ambigua* is not clearly defined at present, but it is the most common species of the genus in the studied area.***Mercurialis annua*** L.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc ?Cs*Remarks:* Its non-native status is uncertain. This species has been usually reported as *M. annua* in a broad sense. Its distribution is poorly known; it is apparently restricted to the most humid areas.***Mercurialis huetii*** Hanry [*M. annua* subsp. *huetii* (Hanry) Lange]*Distribution:* Pc Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Mercurialis perennis*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC

Mercurialis tomentosa* L.Distribution:* Pc Ppc Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Old reports from Ppe are probably erroneous.***Mercurialis* × *malinvaudii* Sennen [*M. ambigua* × *M. buetii*]***Distribution:* Cs***Ricinus communis* L.***Non-native:* N*Distribution:* Pc Ppe Ae O R Cn Cc Cs*Remarks:* Naturalised in some coastal areas.**PHYLLANTHACEAE*****Andrachne telephioides* L.***Distribution:* Ppc Aw S Cn Cc Cs*IUCN category:* LC***Phyllanthus tenellus* Roxb.***Non-native:* C*Distribution:* Cn*Remarks:* It was found growing spontaneously in a garden in Girona (L. Vilar, pers. comm., 17 Aug 2020).**LINACEAE*****Linum alpinum* Jacq. subsp. *alpinum* [*L. perenne* subsp. *alpinum* (Jacq.) Stoj. & Stefanov]***Distribution:* Pa Pc Pe ?Ppc Ppe*IUCN category:* LC*Remarks:* Its occurrence in Ppc (Boumort massif) (Gruber, 1978) requires confirmation.***Linum austriacum* L. subsp. *collinum* (Boiss.) Nyman [*L. perenne* subsp. *austriacum* (L.) O. Bolòs & Vigo]***Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Linum bienne* Mill. [*L. usitatissimum* subsp. *biene* (Mill.) Stank.; *L. usitatissimum* subsp. *angustifolium* (Huds.) Thell.]***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Linum campanulatum* L.Distribution:* Ppc Ppe Aw R Cs*IUCN category:* LC***Linum catharticum* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Linum corymbulosum* Rchb. [*L. strictum* subsp. *corymbulosum* (Rchb.) Rouy]***Distribution:* Pc Cn ?Cs*IUCN category:* DD*Remarks:* Reported from the area of Barcelona (Bolòs & Vigo, 1990). This species was listed for Lleida province (Martínez Labarga & Muñoz Garmendia, 2015) on the basis of a specimen collected in Boí valley, Pc (between Sarais and Eiran, 1270 m, BCN 23924). Reports from Cs (Royo, 2006; Hinojosa & Villarasa, 2010) require confirmation.***Linum grandiflorum* Desf.***Non-native:* C*Distribution:* Pc Cn Cc*Remarks:* A garden escape reported from the Segre river close Seu d'Urgell and several locations in Barcelona metropolitan area (see Aymerich 2016a).***Linum maritimum* L.***Distribution:* Aw S R Cn Cc Cs*IUCN category:* LC***Linum milletii* Sennen & Gonzalo [*L. suffruticosum* subsp. *milletii* (Sennen & Gonzalo) Romo; *L. tenuifolium* L. subsp. *milletii* (Sennen & Gonzalo) O. Bolòs, Vigo, Masalles & Ninot]***Distribution:* Subendemic. ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC*Remarks:* This taxon was traditionally accepted at subspecies level within *L. suffruticosum*.***Linum narbonense* L. subsp. *narbonense****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Linum radiola* L. [*Radiola linoides* Roth]***Distribution:* Pa S R*IUCN category:* NT

Linum suffruticosum subsp. ***castroviejoii*** (Mart. Labarga, Pedrol & Muñoz Garm.) L. Sáez & Aymerich [*L. castroviejoii* Mart. Labarga, Pedrol & Muñoz Garm.]

Distribution: Subendemic. S

IUCN category: LC

Remarks: Endemic to gypsum outcrops of Barbastro-Balaguer anticline (Martínez Labarga & Muñoz Garmendia, 2015; Sáez & Aymerich, 2017). Typical *L. suffruticosum* and *L. suffruticosum* subsp. *castroviejoii* are connected by intermediates.

Linum suffruticosum subsp. ***differens*** (Pau) Rivas Goday & Rivas Mart. [*L. differens* Pau; *L. suffruticosum* subsp. *suffruticosum* auct.]

Distribution: Ppc Aw S

IUCN category: LC

Remarks: The respective distribution areas of some of the subspecies recognised within *L. suffruticosum* are not clearly defined at present.

Linum suffruticosum L. subsp. ***suffruticosum*** [*L. tenuifolium* subsp. *suffruticosum* (L.) Litard.]

Distribution: Cc Cs

IUCN category: LC

Remarks: The respective distribution areas of some of the subspecies recognised within *L. suffruticosum* are not clearly defined at present.

Linum strictum L. subsp. ***strictum***

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Linum tenuifolium L.

Distribution: Pc Pe Ppe

IUCN category: NT

Linum trigynum L.

Distribution: Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Linum usitatissimum L.

Non-native: C

Distribution: Pa Pc Ppe Ae Aw O Cn Cc Cs

Remarks: Its cultivation has experienced large fluctuations (cultivation almost abandoned since the 19th century and recovered at the end of the 20th century) and occasionally some individuals appear near the fields and roads.

Linum viscosum L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O

IUCN category: LC

GERANIACEAE

Erodium botrys (Cav.) Bertol.

Non-native: C

Distribution: R Cn Cc

Remarks: Adventive or sporadic, probably due to human-mediated transport.

Erodium chium (L.) Willd.

Distribution: R Cn Cc Cs

IUCN category: LC

Erodium ciconium (L.) L'Hér.

Distribution: Pc Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Erodium cicutarium (L.) L'Hér.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Extremely variable, showing many combinations of characters which are poorly correlated and sometimes connected by intermediates.

Erodium foetidum subsp. *celtibericum* (Pau) O. Bolòs & Vigo

Distribution: Cc Cs

IUCN category: NT

Erodium foetidum (L.) L'Hér. subsp. *foetidum* [*E. foetidum* subsp. *crispum* (Lapeyr.)

O. Bolòs & Vigo]

Distribution: R

IUCN category: VU

Remarks: Restricted to Cap Norfeu, in Cap de Creus Peninsula (Sáez & al., 2010).

Erodium glandulosum (Cav.) Willd.

Distribution: ?Pa Pc Pe Ppe Cn

IUCN category: LC

Remarks: Apparently intermediate specimens between *E. glandulosum* and *E. rupestre* from Serra de Lleràs (Ppc) were described as *E. ×bolosii* Romo. However, the type material of *E. ×bolosii* falls within the variation of *E. rupestre* (Aymerich & Sáez, 2015).

Erodium laciniatum (Cav.) Willd.

Distribution: S R Cc Cs

IUCN category: LC

Remarks: Probably overlooked and more common than known.

Erodium malacoides (L.) L'Hér.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Erodium moschatum*** (L.) L'Hér.*Distribution:* Ae Aw Cn Cc Cs*IUCN category:* LC***Erodium neuradifolium*** Godr. [*E. malacoides* subsp. *aragonense* (Loscos) O. Bolòs & Vigo]*Distribution:* S Cc Cs*IUCN category:* NT***Erodium rupestre*** (Cav.) Marcet [*E. foetidum* subsp. *rupestre* (Cav.) O. Bolòs & Vigo; *E. lucidum* Lapeyr.; *E. foetidum* subsp. *lucidum* (Lapeyr.) O. Bolòs & Vigo]*Distribution:* Subendemic. Pa Pc Ppc Ppe Cc*IUCN category:* LC*Remarks:* Extremely variable in leaf indumentum density. *Erodium lucidum* and *E. rupestre* were formerly recognised as separate taxa, but no clear discontinuities exist to support the recognition of discrete entities (Aymerich & Sáez, 2015).***Erodium sanguis-christi*** Sennen*Distribution:* Cc*IUCN category:* NT*Remarks:* Also reported from several locations in northern Castelló province, close to the boundary of Cs (Royo, 2006).***Erodium* ×*variabile*** A.C. Leslie [*E. corsicum* Léman × *E. reichardii* DC.]*Non-native:* C*Distribution:* Cn*Remarks:* A garden escape observed in Sant Cugat, Vallès (Aymerich & Sáez, 2021c).***Geranium cinereum*** Cav.*Distribution:* Pa Pc*IUCN category:* LC***Geranium columbinum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Geranium dissectum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Geranium divaricatum Ehrh.*Distribution:* Pa Pc Pe*IUCN category:* EN***Geranium lanuginosum*** Lam. [*G. bohemicum* subsp. *lanuginosum* (Lam.) O. Bolòs & Vigo]*Distribution:* Cn*IUCN category:* EN***Geranium lucidum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw ?O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its occurrence in O requires confirmation (Oliver & Font, 2009).***Geranium molle*** L.*Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Geranium nodosum*** L.*Distribution:* Pa Pc Pe Ppe O ?Cn*IUCN category:* LC*Remarks:* Its presence in Cn (Guilleries), requires confirmation.***Geranium phaeum*** L.*Distribution:* Pa Pc Pe*IUCN category:* LC***Geranium pratense*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Geranium purpureum*** Vill. [*G. robertianum* subsp. *purpureum* (Vill.) Nyman]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Geranium pusillum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn ?Cc Cs*IUCN category:* LC*Remarks:* An old report for Cc (Vila-seca, Baix Camp) due to Gibert (1891, sub *G. humile*) requires confirmation.***Geranium pyrenaicum*** Burm. fil. subsp. *pyrenaicum**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cs*IUCN category:* LC

Geranium robertianum* L.Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Geranium rotundifolium* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Geranium sanguineum* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Geranium sylvaticum* L.***Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Pelargonium grandiflorum* Willd.***Non-native:* C*Distribution:* Cs*Remarks:* Observed in urban urban environments in Amposta, Montsià (Curcó, 2019).***Pelargonium peltatum* (L.) L'Hér.***Non-native:* C*Distribution:* Cn Cc*Remarks:* Cultivated for ornament; casual in waste places (Casasayas, 1989).***Pelargonium zonale* (L.) L'Hér.***Non-native:* C*Distribution:* Cc*Remarks:* Cultivated for ornament and casual in suburban habitats. Sometimes probably confused with *P. ×hybridum*.***Pelargonium ×hybridum* (L.) L'Hér. [*P. iniquinans* (L.) L'Hér. × *P. zonale* (L.) L'Hér.]***Non-native:* C*Distribution:* R Cn Cc Cs*Remarks:* Cultivated for ornament, sometimes escaped (Casasayas, 1989).**LYTHRACEAE*****Ammannia baccifera* L. [incl. *A. aegyptiaca* Willd.]***Non-native:* C*Distribution:* +Cc*Remarks:* Known only from the Llobregat Delta, where it seems to have disappeared (Casasayas, 1989).

Ammannia coccinea Rottb.

Non-native: N

Distribution: S O Cc Cs

Ammannia robusta Heer & Regel

Non-native: N

Distribution: S O Cc Cs

Lythrum borysthenicum (Schrank) Litv. [*Peplis borysthenica* Schrank]

Distribution: R Cn

IUCN category: LC

Lythrum hyssopifolia L.

Distribution: Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lythrum junceum Banks & Sol.

Distribution: Ae S R Cn Cc Cs

IUCN category: LC

Lythrum portula (L.) D.A. Webb [*Peplis portula* L.]

Distribution: Pa Pe Ppc O R Cn Cc

IUCN category: LC

Lythrum salicaria L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lythrum thymifolia L.

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Lythrum tribracteatum Spreng.

Distribution: Aw S R Cs

IUCN category: LC

Punica granatum L.

Non-native: N

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Trapa natans L.

Distribution: +R +Cn

IUCN category: RE

Remarks: This species became extinct in the late 19th century (Sáez & al., 2010).

MYRTACEAE

Acca sellowiana (O. Berg) Burret [*Feijoa sellowiana* (O. Berg) O. Berg]

Non-native: C

Remarks: This species was listed without precise location (Andreu & al., 2012) and it was not checked by us. We do not know the background of this report.

Eucalyptus camaldulensis Dehnh.

Non-native: C

Distribution: Cn Cc Cs

Remarks: Sometimes cultivated in maritime areas. Escaped in scattered places in Baix Ebre, Baix Camp and suburban areas close to Barcelona.

Eucalyptus dabrympleana Maiden

Non-native: C

Distribution: Cn

Remarks: Used in afforestations mainly in Gavarres massif (Rodríguez & Ruiz 1993; Bisbe, 2016). No information is available on sexual reproduction, but the individuals can maintain or expand by vegetative multiplication.

Eucalyptus globulus Labill.

Non-native: C

Distribution: Cn

Remarks: Used in afforestations in Cn and as ornamental in the coastal area.

Eucalyptus gunnii Hook.f.

Non-native: C

Distribution: Cn

Remarks: Used in afforestations mainly in Gavarres massif (Rodríguez & Ruiz 1993; Bisbe, 2016). No information is available on sexual reproduction, but the individuals can maintain or expand by vegetative multiplication.

Eucalyptus viminalis Labill.

Non-native: C

Distribution: Cn

Remarks: Used in afforestations mainly in Gavarres massif (Bisbe, 2016). No information is available on sexual reproduction, but the individuals can maintain or expand by vegetative multiplication.

Myrtus communis L.

Distribution: Ppe O R Cn Cc Cs

IUCN category: LC

ONAGRACEAE

Circaea alpina L. subsp. ***alpina****Distribution:* Pa Pc Pe*IUCN category:* LC***Circaea lutetiana*** L.*Distribution:* Pa Pc Pe Ppe Ae O R Cn Cc*IUCN category:* LC***Circaea ×intermedia*** Ehrh. [*C. alpina* × *C. lutetiana*]*Distribution:* Pa***Clarkia unguiculata*** Lindl.*Non-native:* C*Distribution:* Ppe*Remarks:* Reported from Garrotxa, where it is grown in gardens and occasionally escapes (Oliver & Font, 2009).***Epilobium alpestre*** (Jacq.) Krock.*Distribution:* Pa Pc Pe*IUCN category:* VU*Remarks:* Only a recent occurrence in upper Noguera Pallaresa valley (Pc). See Pérez-Haase (2017) for its detailed distribution.***Epilobium alsinifolium*** Vill.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Epilobium anagallidifolium*** Lam.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Epilobium angustifolium*** L. subsp. ***angustifolium****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC*Remarks:* Their populations in Ae, Aw and Cc (also in some areas in Cn) are unstable and usually associated with forest fires.***Epilobium brachycarpum*** C. Presl*Non-native:* N*Distribution:* Pc Ppc Cn Cs

Epilobium ciliatum Raf. subsp. *ciliatum**Non-native*: I*Distribution*: Pc Pe*Remarks*: Known only from Cerdanya plain (Aymerich, 2015a) and Seu d'Urgell (P. Aymerich, unpubl. data).***Epilobium collinum*** C.C. Gmel.*Distribution*: Pa Pc Pe Ppc Ppe O Cn*IUCN category*: LC***Epilobium duriaei*** Godr.*Distribution*: ?Pa ?Pc*IUCN category*: DD*Remarks*: Listed for Lleida province [Pyrenees] without precise location (Nieto Feliner, 1997b). This species has not been reliably reported from eastern Pyrenees.***Epilobium hirsutum*** L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Epilobium lanceolatum*** Sebast. & Mauri*Distribution*: Pe Ppe O Cn Cc Cs*IUCN category*: LC***Epilobium montanum*** L.*Distribution*: Pa Pc Pe Ppc Ppe O Cn*IUCN category*: LC***Epilobium nutans*** F.W. Schmidt*Distribution*: Pa Pc*IUCN category*: LC***Epilobium obscurum*** Schreb.*Distribution*: Pa Pc Pe Ppe Cn*IUCN category*: LC***Epilobium palustre*** L.*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC***Epilobium parviflorum*** Schreb.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC

Epilobium roseum Schreb. subsp. ***roseum****Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Epilobium tetragonum*** L. subsp. ***tetragonum****Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC***Epilobium ×huteri*** Borbás [*E. alsinifolium* × *E. collinum*]*Distribution:* Pe***Epilobium alsinifolium* × *E. duriaei****Distribution:* Pe***Epilobium anagallidifolium* × *E. collinum****Distribution:* Pc***Epilobium ×barnolae*** Sennen [*E. collinum* × *E. obscurum*]*Distribution:* Pc***Epilobium ×borbasianum*** Hausskn. [*E. roseum* subsp. *roseum* × *E. tetragonum* subsp. *tetragonum*]*Distribution:* Pe***Epilobium ×dacicum*** Borbás [*E. obscurum* × *E. parviflorum*]*Distribution:* Pe***Epilobium ×haynaldianum*** Hausskn. [*E. alsinifolium* × *E. palustre*]*Distribution:* Pc Pe***Epilobium ×laschianum*** Hausskn. [*E. palustre* × *E. tetragonum* subsp. *tetragonum*]*Distribution:* Pe***Epilobium ×montaniforme*** Celak [*E. montanum* × *E. palustre*]*Distribution:* Pe***Epilobium ×persicinum*** Rchb. [*E. parviflorum* × *E. roseum*]*Distribution:* Pe***Epilobium ×schmidtianum*** Rostk. [*E. obscurum* × *E. palustre*]*Distribution:* Pe Cn***Epilobium ×thuringiacum*** Hausskn. [*E. obscurum* × *E. tetragonum* subsp. *tetragonum*]*Distribution:* Pe

Epilobium ×weissenburgense F.W. Schultz [*E. parviflorum* × *E. tetragonum* subsp. *tetragonum*]

Distribution: S

Ludwigia hexapetala (Hook. & Arn.) Zardini, H. Gu & Raven [*L. grandiflora* subsp. *hexapetala* (Hook. & Arn.) Nesom & Kartesz]

Non-native: N

Distribution: Cs

Remarks: Reported from lower Ebre river (Bou & al., 2019).

Ludwigia palustris (L.) Elliott

Distribution: Pe R Cn

IUCN category: LC

Ludwigia peploides (Kunth) P.H. Raven subsp. *montevidensis* (Spreng.) P.H. Raven

Non-native: I

Distribution: R Cn Cc Cs

Remarks: Reports of *L. grandiflora* (Mchx.) Greuter & Burdet are referable to *L. peploides* subsp. *montevidensis* (Verloove & Sánchez-Gullón, 2008; Bou & Font, 2016).

Oenothera biennis L. [*O. suaveolens* Desf.; *O. biennis* subsp. *suaveolens* (Pers.) Rouy & Camus]

Non-native: I

Distribution: Pc Pe Ppc Ppe ?Ae ?Aw ?S ?O ?R ?Cn ?Cc ?Cs

Remarks: Its distribution is poorly known. Reports from lowland areas are probably referable to *O. glazioviana*, *O. fallax* or *O. oehlkersii*. Most populations are found in the upper Segre basin.

Oenothera fallax Renner

Non-native: I

Distribution: Cc Cs

Remarks: It is a hybrid between *O. biennis* (male) and *O. glazioviana* (female), often cultivated for ornament. The distribution of *O. fallax* is poorly known; it seems to form large populations only in dunes habitats (Aymerich & Gustamante, 2016).

Oenothera glazioviana Micheli [*O. erythrosepala* (Borbás) Borbás]

Non-native: I

Distribution: Pa Pc Pe Ppe Ae Aw O R Cn Cc Cs

Oenothera indecora Cambess.

Non-native: N

Distribution: Cc

Remarks: Reported from the Llobregat Delta area (Verloove & Sánchez-Gullón, 2008; Álvarez & al., 2016; González & al., 2016).

Oenothera laciniata Hill*Non-native:* C*Distribution:* Cn

Remarks: It was collected in Sant Feliu de Codines in mid-20th century (Bolòs & Vigo, 1984b); it has also been found in Ter river close to Girona (J. Font in http://www.liferipariater.com/biblioteca/items/51/Joan_Font.pdf).

Oenothera lindheimeri (Engelm. & A. Gray) W.L. Wagner & Hoch [*Gaura lindheimeri* Engelm. & A. Gray]*Non-native:* C*Distribution:* Cn Cc

Remarks: A garden escape known from Mont-roig del Camp (Aymerich & Gustamante, 2016) and Barcelona (Gómez-Bellver & al., 2019c).

Oenothera oehlkersii Kappus*Non-native:* I*Distribution:* Pc Ppe Q R Cn

Remarks: Species with intermediate characters between *O. biennis* and *O. glazioviana* and probably of hybrid origin. *Oenothera oehlkersii* has been often confused with *O. biennis* and *O. glazioviana*.

Oenothera aggr. *parviflora* L.*Non-native:* N*Distribution:* Cc

Remarks: *Oenothera parviflora* was not listed for the Iberian Peninsula by Dietrich (1997). However, a taxon belonging to the *O. parviflora* aggregate (listed as “*Oenothera* Typ Katalonien”) was included by M. Hassler & al. in “Neuer Schlüssel und Atlas der Nachtkerzen Europas” [New key and atlas of evening primroses in Europe, unpublished, 2019]. According to the previous study, the plant here treated as *Oenothera* aggr. *parviflora* was observed by F. Verloove in Barcelona; however, this location is not correct, actually it is Riudecanyes reservoir, Baix Camp (F. Verloove, pers. comm.). On the other hand, Casasayas (1989) doubtfully reported *O. parviflora* L. for riversides of Segre (Bassella, Martinet) and Ter (Manlleu); in our opinion the latter reports are probably due to confusion with *O. biennis*.

Oenothera rosea Aiton*Non-native:* N*Distribution:* Ppc Ppe Ae Q R Cn Cc Cs*Oenothera speciosa* Nutt.*Non-native:* N*Distribution:* Ppe O Cc

Remarks: Cultivated in gardens and sometimes escaped. This species can establish relatively persistent populations, as observed in Baix Llobregat (Álvarez & al., 2016) and Ripollès (Aymerich, 2016a).

NITRARIACEAE*Peganum harmala* L.

Distribution: [Pc] [Ppc] [Aw] S [Cn] Cc Cs

IUCN category: LC

Remarks: Only sporadic and probably man-mediated occurrences outside S and southern coastal areas (Cs and, partially, Cc).

ANACARDIACEAE*Cotinus coggygria* Scop.

Non-native: C

Distribution: Cn

Remarks: Imprecisely reported from suburban areas close to Barcelona. Available information does not determine whether the specimens were true garden escapes or cultivation relicts.

Pistacia lentiscus L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Pistacia terebinthus L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Pistacia vera L.

Non-native: C

Distribution: S

Remarks: A few young plants have recently been observed next to fields of this species in Maials, Segrià (Aymerich & Sáez, 2021c).

Pistacia ×saprotae Burnat [*P. lentiscus* × *P. terebinthus*]

Distribution: Ppc Aw O Cn Cc Cs

Rhus coriaria L.

Non-native: C

Distribution: Ppc Cn Cc

Remarks: Formerly cultivated and rarely sporadic.

Rhus typhina L.

Non-native: N

Distribution: Pc Pe ?O

Remarks: Reported from three locations in Alt Urgell, Cerdanya and Ripollès (Aymerich, 2014, 2016a, 2019); also listed for Garrotxa (Oliver, 2019).

Schinus molle L.*Non-native*: N*Distribution*: Cn

Remarks: Imprecisely reported from suburban areas close to Barcelona. Available information does not determine whether the specimens were sporadic or stocks of formerly cultivated areas.

SAPINDACEAE*Acer campestre* L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category*: LC

Remarks: Also reported from locations outside the study area but close to the boundary of Cs.

Acer cappadocicum Gled. subsp. *cappadocicum**Non-native*: C*Distribution*: Ppe ?O

Remarks: It presents spontaneous reproduction in an abandoned garden in the Ribes valley, Ripollès (Aymerich, 2019).

Acer monspessulanum L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Acer negundo* L.*Non-native*: I*Distribution*: Pe Ppc Ae Aw S O R Cn Cc Cs*Acer opalus* subsp. *granatense* (Boiss.) Font Quer & Rothm.*Distribution*: ?Ppc Aw S Cc Cs*IUCN category*: LC

Remarks: The systematic recognition of two subspecies within *A. opalus* is not supported by genetic data (Grimm & al., 2007). Some populations of Ppc and Aw exhibit intermediate characters with subsp. *opalus*.

Acer opalus Mill. subsp. *opalus**Distribution*: Pa Pc Pe Ppc Ppe O Cn Cc*IUCN category*: LC*Acer platanoides* L.*Distribution*: Pa Pc [Pe] Ppc Ppe [Ae] [Aw] [O] [Cn] [Cc] [Cs]*IUCN category*: LC

Acer pseudoplatanus L.*Non-native:* I*Distribution:* Pa Pc Pe Ppc Ppe Ae Q Cn Cc Cs*Acer saccharinum* L.*Non-native:* C*Distribution:* Pc*Remarks:* Reported from Segre river, near Seu d'Urgell (Aymerich, 2014).*Acer xguyotii* Beauverd [*A. campestre* × *A. opalus* subsp. *opalus*]*Distribution:* Ae*Remarks:* Found in Avià, Berguedà (P. Aymerich, unpubl. data).*Acer xmartinii* Jord. [*A. monspessulanus* × *A. . opalus* subsp. *opalus*]*Distribution:* Ppc Ae Aw Cn Cc*Remarks:* This taxon, which can be locally common, has usually been treated as a variety or subspecies of *A. monspessulanum*. This hybrid was sometimes confused with *A. opalus* subsp. *granatense*.*Aesculus hippocastanum* L.*Non-native:* N*Distribution:* Pe Ppc Ppe Ae Aw O Cn Cc Cs*Remarks:* Reported as naturalised in O; probably casual elsewhere.*Cardiospermum grandiflorum* Sw.*Non-native:* N*Distribution:* Cn*Remarks:* Reported from a disturbed area in Molins de Rei, Baix Llobregat (Gómez-Bellver & al., 2016).*Cardiospermum halicacabum* L.*Non-native:* C*Distribution:* Cn Cc Cs*Koelreuteria paniculata* Laxm.*Non-native:* C*Distribution:* Ppe Ae Aw O Cn Cc**RUTACEAE***Citrus xaurantium* L.*Non-native:* C*Distribution:* ?Cn Cc*Remarks:* Listed without precise location for Barcelona metropolitan area (Basnou & al., 2015); also reported from the Llobregat Delta (González & al., 2016).

Citrus ×limon (L.) Burm.

Non-native: C

Distribution: Cc

Remarks: Reported from the Llobregat Delta (González & al., 2016).

Cneorum tricoccon L.

Distribution: R Cn

IUCN category: NT

Dictamnus albus L.

Distribution: Pe Ppc Ppe Ae +O Cn Cc

IUCN category: LC

Remarks: Not found recently in O (Oliver & Font, 2009).

Dictamnus hispanicus Willk.

Distribution: Ppc Aw S Cc Cs

IUCN category: LC

Haplophyllum linifolium (L.) G. Don subsp. *linifolium*

Distribution: Ppc +Aw S +Cc

IUCN category: LC

Remarks: Old reports for Montserrat mountain (Cc), Mora d'Ebre (Cc) and Bages county (Aw) have not been recently confirmed. This species has also been reported from an area in Aragon close to the boundary of Cs.

Ptelea trifoliata L.

Non-native: C

Distribution: Cn

Remarks: Reported from Montjuïc, in Barcelona urban area (Gómez-Bellver & al., 2019c).

Ruta angustifolia Pers. [*R. chalepensis* subsp. *angustifolia* (Pers.) P. Cout.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Ruta chalepensis L. [*R. bracteosa* DC.]

Non-native: C

Distribution: Ae +O R Cn Cc Cs

Remarks: Probably vanished in O (Oliver & Font, 2009).

Ruta graveolens L.

Non-native: C

Distribution: Ppe Aw O Cn

Ruta montana (L.) L.

Distribution: Pc Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Reports from O are erroneous (Oliver & Font, 2009).

SIMAROUBACEAE

Ailanthus altissima (Mill.) Swingle

Non-native: I

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

MELIACEAE

Melia azedarach L.

Non-native: C

Distribution: Aw S R Cn Cc Cs

CYTINACEAE

Cytinus hypocistys (L.) L. [incl. *C. hypocistys* subsp. *macranthus* Wettst.]

Distribution: Ppe S O R Cn Cc Cs

IUCN category: LC

Remarks: On the basis of flower size two subspecies were recognised, but are too poorly differentiated both morphologically and geographically to be worth maintaining.

Cytinus ruber (Fourr.) Fritsch subsp. *ruber*

Distribution: O R Cn Cc Cs

IUCN category: LC

MALVACEAE

Abutilon grandifolium (Willd.) Sweet

Non-native: N

Distribution: Cn Cc

Remarks: First report from Baix Llobregat (Verloove & Sánchez Gullón, 2008); later found in several coastal areas. See Verloove & al. (2019) for its distribution.

Abutilon theophrasti Medik.

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Alcea rosea L.*Non-native:* C*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Widely cultivated for ornament and sometimes sporadic. *Alcea rosea* subsp. *ficifolia* (L.) Govaerts [*A. ficifolia* L.], which was reported without precise locations by Bolòs & Vigo (1990), is regarded as synonym of typical *A. rosea*.*Althaea cannabina* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Althaea officinalis* L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Brachychiton populneus* (Schott & Endl.) R. Br.*Non-native:* C*Distribution:* Cn*Remarks:* Escaped in urban habitats in Barcelona (P.A. Lázaro in biodiversidadvirtual.org; L. Gustamante, pers. comm.).*Firmiana simplex* (L.) W. Wight*Non-native:* N*Distribution:* Cn*Remarks:* Recently found in an urban habitat of Girona area (Verloove & Aymerich, 2020).*Hibiscus syriacus* L.*Non-native:* C*Distribution:* O*Remarks:* Reported by Oliver (2019).*Hibiscus trionum* L.*Non-native:* N*Distribution:* Ae Aw S O Cn Cc Cs*Remarks:* This species has been intermittently reported since the 18th century. It constitutes sporadic and unstable populations in cultivated fields.*Kosteletzkya pentacarpa* (L.) Ledeb. [*K. virginica* (L.) A. Gray]*Distribution:* Cc Cs*IUCN category:* VU*Remarks:* Its native status is unclear. This is the only species of the genus occurring in both the New and Old Worlds. Blanchard (2012) suggested that its scattered occurrence in Eurasia, often near seaports, may indicate an introduction.

Malope trifida Cav.

Non-native: C

Distribution: +Aw +Cn Cc

Remarks: Escaped from cultivation. Most reports go back to early 20th century (Cadevall, 1915; Bolòs & Vigo, 1990); recently reported from Montsant range, Cc (Pascual, 2017).

Malva aegyptia L.

Distribution: S Cs

IUCN category: DD

Remarks: It is a sporadic species in our area; rarely arrived from their populations in Aragon and perhaps by man-mediated dispersion. Reported from two locations (Bolòs & al., 1998; Conesa & al., 2012): between Batea and Maella, Terra Alta (Cs) and Albatàrrec, Segrià (S), where it has not been found recently.

Malva alcea L. [*M. alcea* subsp. *fastigiata* (Cav.) O. Bolòs & Vigo]

Distribution: Pe Ppe O ?Cs

IUCN category: LC

Remarks: A report for Cs (Bolòs & al., 1998) is probably erroneous.

Malva arborea (L.) Webb & Berthel. [*Lavatera arborea* L.]

Distribution: [Aw] R Cn Cc Cs

IUCN category: LC

Malva cretica Cav. subsp. *althaeoides* (Cav.) Dalby

Distribution: R Cn Cc

IUCN category: VU

Remarks: Reports from R and Cn are old. Currently it is known only in a small area of Baix Ebre (see Aymerich & Sáez, 2015).

Malva hispanica L.

Non-native: C

Distribution: R

Remarks: It was collected from Alt Empordà (Losa, 1955; data from BCN).

Malva longiflora (Boiss. & Reut.) B. Bock [*Althaea longiflora* Boiss. & Reut.; *A. hirsuta* subsp. *longiflora* (Boiss. & Reut.) Thell.]

Non-native: C

Distribution: +Cn

Remarks: A collection from Terrassa in early 20th century (Bolòs, 1950) is the only confirmed occurrence in our area. It was also listed for Girona province without precise location (Paiva & Nogueira, 1993b). These reports are probably referable to adventive plants.

Malva micans (L.) Alef. subsp. *micans* [*Lavatera triloba* L.; *L. micans* L.; *Malva lusitanica* (L.) Valdés]

Distribution: Cs

IUCN category: DD

Remarks: Bolòs & al. (1998) reported this taxon from Horta de Sant Joan. It is unknown whether this plant has an established population or if its presence is accidental (Sáez & al., 2010). This taxon occurs in nearby areas in Aragon.

Malva moschata L.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: The relative abundance of *M. moschata* and *M. tournefortiana* is poorly known because the identity of several populations with intermediate characters is uncertain (see Aymerich & Sáez, 2015).

Malva multiflora (Cav.) Soldano, Banfi & Galasso [*Lavatera cretica* L.]

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Malva neglecta Wallr.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Malva nicaeensis All.

Distribution: Ppc Ppe Aw S R Cn Cc

IUCN category: LC

Malva olbia (L.) Alef. [*Lavatera olbia* L.]

Distribution: R Cn Cc

IUCN category: LC

Malva parviflora L.

Distribution: Ppc Ppe Aw S R Cn Cc Cs

IUCN category: LC

Malva punctata (All.) Alef. [*Lavatera punctata* All.]

Non-native: C

Distribution: Cs

Remarks: Reported from a single location in the Ebre Delta (Bolòs & al., 1998), where it has not been found recently.

Malva setigera K.F. Schimp. & Spenn. [*Althaea hirsuta* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Malva stipulacea Cav. [*M. aegyptia* subsp. *trifida* (Cav.) O. Bolòs, Vigo, Masalles & Ninot; *M. trifida* Cav.]

Distribution: Aw S [Cn] [Cc]

IUCN category: LC

Malva subovata (DC.) Molero & J.M. Monts. [*Lavatera maritima* Gouan]

Distribution: Ppc Ppe O R Cn Cc Cs

IUCN category: LC

Malva sylvestris L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Malva tournefortiana L. [*M. moschata* subsp. *tournefortiana* (L.) Rouy]

Distribution: Pa Pc Pe Ppc ?Ppe Cc

IUCN category: LC

Remarks: The abundance of *M. moschata* and *M. tournefortiana* is poorly known because the uncertain identity of several populations with intermediate characters (see Aymerich & Sáez, 2015).

Malva trimestris (L.) Salisb. [*Lavatera trimestris* L.]

Non-native: C

Distribution: +S +R +Cn +Cc

Remarks: Probably vanished, since it has not been found since early 20th century.

Malva verticillata L.

Non-native: C

Distribution: +O

Remarks: Only an old report for Garrotxa. It is considered to be a garden escape.

Malva* × *barcinonensis Sennen [*M. ×arbosii* Sennen; *M. parviflora* × *M. sylvestris*]

Distribution: Pe Cn

Malvastrum coromandelianum (L.) Garcke

Non-native: C

Distribution: Cn

Remarks: It was found growing spontaneously in a garden in Girona (L. Vilar, pers. comm., 17 Aug 2020).

Phymosia umbellata (Cav.) Kearney

Non-native: C

Distribution: Cn

Remarks: Reported from suburban areas of Barcelona, in Collserola and Montjuïc mountains (Gómez-Bellver & al., 2016, 2019).

Sida rhombifolia L.*Non-native:* C*Distribution:* R Cs*Remarks:* Also listed for Barcelona province without specific location (Paiva & Nogueira, 1993a).***Sida spinosa*** L.*Non-native:* N*Distribution:* S*Remarks:* Also listed for Barcelona province without specific location (Paiva & Nogueira, 1993a).***Tilia cordata*** Mill.*Distribution:* Pa Pe Ppe Ae O Cn*IUCN category:* LC***Tilia platyphyllos*** Scop. [incl. subsp. *cordifolia* (Besser) C.K. Schneid.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC*Remarks:* Commonly grown in gardens and parks. Some spontaneous populations (particularly in Ae and Aw) could have arisen from escaped individuals. Individuals referable to subsp. *cordifolia* were reported throughout much of the studied area, growing together with typical *T. platyphyllos*.***Tilia tomentosa*** Moench*Non-native:* C*Distribution:* Ppe Aw ?O*Remarks:* Commonly grown in gardens and streets but very rarely self-sown. Subspontaneous individuals were reported from two locations in upper Llobregat basin and one location of upper Ter (Aymerich, 2013d, 2016a, 2019); also listed for Garrotxa (Oliver, 2019).***Tilia ×europaea*** L. [*T. ×vulgaris* Hayne; *T. cordata* × *T. platyphyllos*]*Distribution:* Pe Ppe O*Remarks:* Intermediate specimens can be found in the areas where *T. cordata* and *T. platyphyllos* constitute mixed populations or are very close geographically. These hybrids are also grown in gardens.**THYMELAEACEAE*****Daphne alpina*** L.*Distribution:* Pe Ppc Ppe*IUCN category:* EN*Remarks:* Currently known from five locations: four in Cerdanya (Cadí-Moixeró area) and one in Alt Urgell (Serra de Prada).

Daphne cneorum L. subsp. ***cneorum****Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Daphne gnidium*** L.*Distribution:* Pe Ppc Ppe Aw S O R Cn Cc Cs*IUCN category:* LC***Daphne laureola*** L. subsp. ***laureola****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC*Remarks:* Plants from the central Pyrenees (Pa and Pc) with spreading, more or less decumbent branches were called *D. laureola* subsp. *philippi* (Gren. & Godr.) Rouy. However, they are not listed as taxonomically distinct (Nieto Feliner, 1997a).***Daphne mezereum*** L. subsp. ***mezereum****Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Thymelaea calycina*** (Lapeyr.) Meisn.*Distribution:* Pa Pc*IUCN category:* LC***Thymelaea dioica*** (Gouan) All.*Distribution:* Pc Pe Ppc Ppe*IUCN category:* LC***Thymelaea gussonei*** Boreau [*T. passerina* subsp. *pubescens* (Guss.) Maire]*Distribution:* O R Cn Cc*IUCN category:* LC*Remarks:* Most reports are relatively old.***Thymelaea hirsuta*** (L.) Endl.*Distribution:* R Cn Cc Cs*IUCN category:* LC***Thymelaea nivalis*** (Ramond) Meissn. [*T. tinctoria* (Pourr.) Endl. subsp. *nivalis* (Ramond) Nyman]*Distribution:* ?Pe Ppc Ppe*IUCN category:* LC*Remarks:* A report for Pe (Núria) requires confirmation.

Thymelaea passerina (L.) Coss. & Germ.*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Several reports are old and some of them are probably referable to *T. gussonei*.***Thymelaea pubescens*** (L.) Meisn. subsp. *pubescens**Distribution:* Pc Ppc Ppe Ae Aw S Cn Cs*IUCN category:* LC***Thymelaea sanamunda*** All.*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Thymelaea tinctoria*** (Pourr.) Endl.*Distribution:* Ppc Ppe Ae Aw S O Cn Cc Cs*IUCN category:* LC**CISTACEAE*****Cistus albidus*** L.*Distribution:* Pe Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cistus clusii*** Dunal subsp. *clusii**Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Cistus crispus*** L.*Distribution:* Pe R Cn ?Cc*IUCN category:* LC*Remarks:* Its presence in Baix Camp (Bolòs & Vigo, 1990) requires confirmation.***Cistus halimifolius*** L. [*Halimium halimifolium* (L.) Willk. subsp. *halimifolium*]*Distribution:* Cn Cc*IUCN category:* VU***Cistus ladanifer*** L. subsp. *ladanifer**Distribution:* ?R Cn Cc*IUCN category:* LC*Remarks:* Its native status is uncertain. Not found recently in Hospitalet de l'Infant (Cc). Reports from Prades mountains (Cc) are based on confusion with *C. laurifolius* (see Bolòs & Vigo, 1996).

Cistus laurifolius* L.Distribution:* ?Pa Pc Pe Ppc Ppe Ae Cn Cc*IUCN category:* LC*Remarks:* Its presence in Pa requires confirmation, since it is based on an old report (Coste & Soulié, 1913).***Cistus monspeliensis* L.***Distribution:* Pe Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Cistus populifolius* L. subsp. *populifolius****Distribution:* Cc*IUCN category:* VU*Remarks:* For its distribution see Sáez & al. (2010), Molero & Pyke (2019) and Mendo & Sáez (2021).***Cistus salviifolius* L.***Distribution:* Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Cistus* × *albereensis* Rouy & Foucaud [*C. albidus* × *C. salviifolius*]***Distribution:* Cn***Cistus* × *florentinus* Lam. [*C. monspeliensis* × *C. salviifolius*]***Distribution:* R Cn Cc***Cistus* × *hybridus* Pourr. [*C. populifolius* subsp. *populifolius* × *C. salviifolius*]***Distribution:* Cc***Cistus* × *incanus* L. [*C. albidus* × *C. crispus*]***Distribution:* R Cn***Cistus* × *lecomtei* Sennen [*C. albidus* × *C. monspeliensis*]***Distribution:* Cn***Cistus* × *ledon* Lam. [*C. laurifolius* × *C. monspeliensis*]***Distribution:* Cn***Cistus* × *longifolius* Lam. [*C. monspeliensis* × *C. populifolius* subsp. *populifolius*]***Distribution:* Cc

Cistus × *purpureus* Lam. [*C. creticus* L. × *C. ladanifer*]

Non-native: C

Distribution: Cc

Remarks: Escaped individuals or small populations of this garden hybrid have been observed in Tarragona suburban habitats (R.L. Castel in biodiversidadvirtual, 2021) and Gavà, Baix Llobregat (J.A. Perea in biodiversidadvirtual, 2012).

Cistus × *skanbergii* Lojac. [*C. monspeliensis* L. × *C. parviflorus* Lam.]

Non-native: C

Distribution: R

Remarks: A group of individuals of this garden hybrid was observed in 2016 on a roadside in Vilajuïga, Alt Empordà (A. Lluent, Generalitat de Catalunya, pers. comm.).

Cistus × *stenophyllus* Link [*C. ladanifer* × *C. monspeliensis*]

Distribution: Cn

Cistus × *verguinii* H.J. Coste & Soulié [*C. ladanifer* × *C. salvifolius*]

Distribution: Cn

Fumana ericifolia Wallr. [*F. ericoides* subsp. *montana* (Pomel) Güemes & Muñoz Garm.; *F. ericoides* auct., non (Cav.) Gand.; *F. ericoides* var. *spachii* auct.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Fumana ericoides (Cav.) Gand.

Distribution: S Cs

IUCN category: LC

Remarks: Its distribution was overestimated due to taxonomic confusion with *F. ericifolia*.

Fumana hispidula Loscos & J. Pardo [*F. thymifolia* subsp. *hispidula* (Loscos & J. Pardo) O. Bolòs & Vigo, comb. inval.; *F. thymifolia* var. *hispidula* (Loscos & J. Pardo) O. Bolòs & Vigo; *F. thymifolia* auct., non (L.) Webb]

Distribution: S

IUCN category: LC

Remarks: Its distribution is poorly known, due to misidentifications with *F. thymifolia*.

Fumana juniperina (Dunal) Pau [*F. laevis* auct., non (Cav.) Pau]

Distribution: Cn

IUCN category: LC

Remarks: Known from several locations in Gironès and Selva counties, whereas its presence in Plana de Sant Jordi (Baix Ebre) requires confirmation. Its distribution was underestimated due to taxonomic confusion with *F. laevis*.

Fumana laevipes (L.) Spach

Distribution: Aw R Cn Cc Cs

IUCN category: LC

Fumana laevis (Cav.) Pau [*F. thymifolia* subsp. *laevis* (Cav.) Molero & Rovira]

Distribution: Aw Cn Cc Cs

IUCN category: LC

Fumana procumbens (Dunal) Gren. & Godr.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Fumana scoparia Pomel [*F. ericoides* var. *glandulosa* Pau; *F. ericoides* auct., non (Cav.) Gand.]

Distribution: Aw S Cc Cs

IUCN category: LC

Fumana thymifolia (L.) Webb

Distribution: Pe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Helianthemum apenninum (L.) Mill. subsp. *apenninum*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Helianthemum hirtum (L.) Mill.

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Intermediate specimens between this species and *H. apenninum* subsp. *apenninum* are probably referable to *H. apenninum* var. *caraltii* O. Bolòs & Vigo. Reports of this species from O are erroneous (Oliver & Font, 2009).

Helianthemum ledifolium (L.) Mill.

Distribution: Aw S R Cc Cs

IUCN category: LC

Helianthemum marifolium (L.) Mill. subsp. *marifolium*

Distribution: Ppc Aw S Cc Cs

IUCN category: LC

Remarks: Reports from Setcases (Pe) (Morer, 1879) and Garrotxa county are erroneous. A report for Ppe (Figols i Alinyà, serra de cal Pinsà) (Devis, 2006) requires confirmation.

Helianthemum marifolium subsp. ***molle*** (Cav.) G. López [*H. organifolium* subsp. *molle* (Cav.) Font Quer & Rothm.]

Distribution: Cc Cs

IUCN category: LC

Helianthemum marifolium subsp. ***organifolium*** (Lam.) G. López [*H. organifolium* (Lam.) Pers.; *H. organifolium* subsp. *glabratum* (Willk.) Guinea & Heywood]

Distribution: Aw S Cc

IUCN category: LC

Helianthemum nummularium (L.) Mill. [*H. nummularium* subsp. *pyrenaicum* (Janch.) Hegi; *H. nummularium* subsp. *tomentosum* auct.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Two subspecies were recognised by Bolòs & Vigo (1990). The splitting of *H. nummularium* into taxonomic units of any rank seems unjustified, as morphological characters that were treated as diagnostic are not stable but correlated with ecological conditions (see Volkova & al., 2016).

Helianthemum oelandicum (L.) Dum. Cours. subsp. ***alpestre*** (Jacq.) Ces. [*H. oelandicum* subsp. *italicum* sensu O. Bolòs & Vigo; *H. oelandicum* var. *hirtum* sensu O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Helianthemum oelandicum subsp. ***incanum*** (Willk.) G. López [*H. canum* (L.) Hornem. subsp. *incanum* (Willk.) Rivas Goday & Borja]

Distribution: Pa Pc ?Pe Ppc Ppe Cc Cs

IUCN category: LC

Remarks: Intermediate specimens from Cc (Prades and Llaberia mountains) between this species and *H. marifolium* subsp. *marifolium* are probably referable to *H. marifolium* f. *fontii* O. Bolòs & Vigo.

Helianthemum oelandicum subsp. ***italicum*** (L.) Ces. [*H. talicum* var. *penicillatum* (Dunal) Nyman]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Helianthemum salicifolium (L.) Mill.

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Helianthemum squamatum (L.) Dum. Cours.

Distribution: Aw S Cc

IUCN category: LC

Helianthemum syriacum (Jacq.) Dum. Cours. [*H. syriacum* subsp. *thibaudii* (Pers.) Meikle]

Distribution: Ppc Ae Aw S Cc Cs

IUCN category: LC

Helianthemum violaceum (Cav.) Pers. [*H. apenninum* subsp. *violaceum* (Cav.) O. Bolòs & Vigo; *H. apenninum* subsp. *pilosum* sensu O. Bolòs & Vigo, non (L.) P. Fourn.]

Distribution: ?Pa Pc Ppc Ppe Ae Aw S [O] R Cn Cc Cs

IUCN category: LC

Remarks: Reported from a single location in Pa (Garós) (Carrillo & Font, 1988, sub *H. pilosum*); casual alien in O (Oliver & Font, 2009).

Helianthemum* × *lineariforme Pau [*H. hirtum* × *H. violaceum*]

Distribution: Cs

Helianthemum* × *sulphureum Willd. [*H. apenninum* subsp. *apenninum* × *H. nummularium*]

Distribution: Ae Cn Cc Cs

Remarks: Probably overlooked and more widespread than currently documented.

Tuberaria guttata (L.) Fourn. [*Helianthemum guttatum* (L.) Mill.; *Xolantha guttata* (L.) Raf.]

Distribution: Pe O R Cn Cc

IUCN category: LC

Tuberaria lignosa (Sweet) Samp. [*Helianthemum tuberaria* (L.) Mill.; *Xolantha tuberaria* (L.) Gallego, Muñoz Garm. & C. Navarro]

Distribution: Cn

IUCN category: LC

Tuberaria plantaginea (Willd.) Gallego [*Xolantha plantaginea* (Willd.) Gallego, Muñoz Garm. & C. Navarro; *T. inconspicua* (Pers.) Willk.]

Distribution: R Cn Cc

IUCN category: LC

Tuberaria plantaginea* × *T. praecox

Distribution: Cn

Remarks: Some specimens from Barcelona and its surroundings are morphologically intermediate between *T. plantaginea* and *T. praecox* (Boiss. & Reut.) Grosser (Gallego, 1993). These specimens suggests the existence of the latter species in our area.

TROPAEOLACEAE*Tropaeolum majus* L.

Non-native: N

Distribution: R Cn Cc

Remarks: This species, which is grown as an ornamental, usually occurs as casual but sometimes constitutes persistent naturalised populations in suburban environments.

RESEDACEAE

Reseda barrelieri Müll. Arg. [*R. suffruticosa* Loefl. subsp. *barrelieri* (Müll. Arg.) Fern. Casas]

Distribution: Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs

IUCN category: LC

Remarks: Most old reports of *R. alba* are referable to *R. barrelieri*.

Reseda glauca L.Distribution: Pa Pc Pe Ppe

IUCN category: LC

Reseda hookeri Guss. [*R. alba* L. subsp. *hookeri* (Guss.) Arcang.]

Distribution: Cn

IUCN category: CR

Remarks: Only known in a beach of Maresme (Guardiola & Romera, 2018).

Reseda jacquinii Rchb. [*R. phyteuma* subsp. *jacquinii* (Rchb.) Bolòs & Vigo; *R. jacquinii* subsp. *litigiosa* (Sennen & Pau) Abdallah & de Wit]

Distribution: R

IUCN category: NT

Remarks: Restricted to Cap de Creus peninsula. *Reseda jacquinii* subsp. *litigiosa* (Sennen & Pau) Abdallah & de Wit is not listed as taxonomically distinct in recent treatments (Martín-Bravo, 2011; Tison & al., 2014).

Reseda lutea L. subsp. *lutea*Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Reseda lutea subsp. *vivantii* (P. Monts.) Rovira [*R. lutea* var. *vivantii* (P. Monts.) Fern. Casas & Molero]

Distribution: S

IUCN category: LC

Reseda luteola L. subsp. *luteola*Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Reseda odorata L.

Non-native: C

Distribution: R Cn Cc

Reseda phyteuma L. subsp. *phyteuma*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Reseda stricta Pers. subsp. *stricta*

Distribution: Ppc Aw S Cc Cs

IUCN category: LC

Reseda undata L. subsp. *undata* [*R. alba* subsp. *gayana* (Boiss.) Maire]

Distribution: Ppc Aw S Cc Cs

IUCN category: LC

Sesamoides interrupta (Boreau) G. López

Distribution: Pa Pc Pe

IUCN category: LC

CAPPARACEAE

Capparis spinosa subsp. *rupestris* (Sm.) Nyman [*C. orientalis* Veill.]

Distribution: [Ppc] [Aw] [S] [Cn] [Cc] Cs

IUCN category: LC

Remarks: Its native status is uncertain. Some populations from Cs are probably native.

Capparis spinosa L. subsp. *spinosa*

Distribution: S

IUCN category: NT

CLEOMACEAE

Cleome violacea L.

Non-native: C

Distribution: Cc

Remarks: Reported once from Serra del Montsant (Molero, 1976).

BRASSICACEAE

Aethionema saxatile subsp. *ovalifolium* (DC.) Nyman [*A. saxatile* subsp. *monospermum* (R. Br.) P. Fourn.; *A. monospermum* R. Br.; *A. marginatum* (Lapeyr.) Pau]

Distribution: Pa Pc Pe Ppc Ppe Cc

IUCN category: LC

Remarks: As proposed Aymerich & Sáez (2015), *A. monospermum* R. Br. and *A. marginatum* (Lapeyr.) Pau are taxonomic synonyms of *A. saxatile* subsp. *ovalifolium* (I. Al-Shehbaz and E. Schranz in litt., February 2020).

Aethionema saxatile (L.) R. Br. subsp. *saxatile*

Distribution: Pc Ppc Ppe Cc Cs

IUCN category: LC

Remarks: There are much needed, population-based, molecular, cytological, and critical morphological studies throughout the species range to understand the complexity of *A. saxatile* and divide into infraspecific taxa (I. Al-Shehbaz in litt., February 2020).

Alliaria petiolata (M. Bieb.) Cavara & Grande

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Alyssum alyssoides (L.) L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Alyssum cacuminum Spaniel, Marhold & Lihová [*A. cuneifolium* auct., non Ten.]

Distribution: Subendemic. Pc Pe ?Ppe

IUCN category: LC

Remarks: High mountain populations from central and eastern Pyrenees previously assigned to *A. cuneifolium* Ten. subsp. *cuneifolium* are referable to *A. cacuminum* (Zozomová-Lihová & al., 2014).

Alyssum collinum Brot. [*A. simplex* sensu auct., non Rudolphi]

Distribution: Pc Pe Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: This species (tetraploid populations of *A. simplex* in a broad sense) was reported from our area (Cetlová & al., 2019). The presence of *A. simplex* Rudolphi in the studied area, although probable, requires confirmation.

Alyssum fastigiatum Heywood [*A. montanum* auct., non L.]*Distribution:* Ppc Ppe Cn Cc Cs*IUCN category:* LC*Remarks:* Populations distributed throughout most of the Iberian Peninsula, previously referred mostly to *A. montanum* L., are treated as *A. fastigiatum* (Zozomová-Lihová & al., 2014). *Alyssum montanum* in a strict sense does not occur in the Iberian Peninsula, but it is found in nearby areas of French Pyrenees.***Alyssum granatense*** Boiss. & Reut.*Distribution:* S Cc Cs*IUCN category:* LC***Arabidopsis thaliana*** (L.) Heynh.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Arabis alpina*** L. subsp. *alpina**Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC*Remarks:* In Pe there are some non-native populations which became naturalised from road-sides revegetation. These plants are morphologically close to subsp. *caucasica* (Willd.) Briq.***Arabis auriculata*** Lam. [*A. recta* Vill.]*Distribution:* Pc Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Arabis ciliata*** Clairv.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Arabis hirsuta*** (L.) Scop.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs*IUCN category:* LC***Arabis nova*** subsp. *iberica* Talavera*Distribution:* Ppc Cc*IUCN category:* VU***Arabis nova*** Vill. subsp. *nova**Distribution:* Pc Pe Ppc Ppe ?Cc ?Cs*IUCN category:* LC*Remarks:* Its presence in Cardó (Cc) and Ports massif (Cs) requires confirmation.

Arabis parvula Dufour*Distribution*: S Cc*IUCN category*: LC***Arabis planisiliqua*** (Pers.) Rchb. [*A. hirsuta* subsp. *gerardi* Hartm. f.]*Distribution*: Pc Pe Ppc Ae Aw S R Cn Cc Cs*IUCN category*: LC***Arabis scabra*** All.*Distribution*: Ppc Cc Cs*IUCN category*: LC*Remarks*: Some Pyrenean reports (Pa, Pc, Pe) are based on confusion with other species of the genus.***Arabis serpillifolia*** Vill.*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC***Arabis soyeri*** Reut. & Huet subsp. *soyeri**Distribution*: Subendemic. Pa Pc*IUCN category*: VU*Remarks*: This taxon is considered subendemic based on currently available information. However, an extensive suitable habitat exists in the French Pyrenees. Therefore, *A. soyeri* subsp. *soyeri* probably has a wider distribution in the latter area than previously believed, in which case it would lose its subendemic status.***Arabis verna*** (L.) R. Br.*Distribution*: R*IUCN category*: DD*Remarks*: Known only from Cap de Creus Peninsula; there is no recent information.***Armoracia rusticana*** P. Gaertn., B. Mey. & Scherb.*Non-native*: N*Distribution*: O*Remarks*: Regarded as naturalised in O (Béjar & al., 2009) based on the persistence of a population since the 19th century. We have not included old reports from Aw and R since is unknown if the plants were cultivated or naturalised.***Aubrieta columnae*** Guss.*Non-native*: N*Distribution*: Pe Ae*Remarks*: Cultivated for ornament and occasionally in roadsides revegetation (Aymerich, 2014; 2016a).

Barbarea intermedia Boreau*Distribution:* Pa Pc Pe Ppc Ppe O R*IUCN category:* LC*Remarks:* Probably casual in Ppc and R.***Barbarea verna*** (Mill.) Asch.*Distribution:* Pa Pc Pe Ppe O R Cn Cc*IUCN category:* LC***Barbarea vulgaris*** R. Br.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC*Remarks:* Also reported from Fredes (northern Castelló province) close to the boundary of Cs.***Berteroa incana*** (L.) DC.*Non-native:* N*Distribution:* Pe*Remarks:* Known only from Cerdanya plain, in Llívia (Terrisse, 1988, and others) and Fontanals de Cerdanya (Aymerich, 2016a).***Biscutella auriculata*** L.*Distribution:* Ppc Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably only casual in northern and maritime areas.***Biscutella cichoriifolia*** Loisel.*Distribution:* Pe Ppe O*IUCN category:* LC***Biscutella laevigata*** L. aggr.*Remarks:* The systematics of this aggregate in our area is still very poorly known. Moreover, there is no consensus on the taxonomic status of several species listed here. Therefore, the present treatment should be regarded as provisional and tentative.***Biscutella controversa*** Boreau [*B. laevigata* subsp. *controversa* (Boreau) O. Bolòs & Masclans]*Distribution:* Pe ?Ppe O Cn*IUCN category:* LC

Biscutella coronopifolia L. [*B. laevigata* subsp. *coronopifolia* (L.) Rouy & Foucaud]

Distribution: Pe Ppe Ae O Cn Cc

IUCN category: LC

Remarks: A conclusive statement concerning the taxonomic status of the infraspecific variants recognised by Bolòs & Vigo (1990) is required.

Biscutella flexuosa Jord. [*B. laevigata* subsp. *flexuosa* (Jord.) O. Bolòs & Masclans; *B. macroclada* Sennen]

Distribution: Pa ?Pc Pe Ppc ?Aw Cn ?Cc

IUCN category: LC

Remarks: Bolòs & Vigo (1990) suggested that this species was also present in Montserrat mountain (Cc) and Segarra county (Aw). Its presence in these areas require confirmation.

Biscutella fontqueri subsp. *cardonica* (O. Bolòs & Masclans) L. Sáez, Aymerich & C. Blanché [*B. laevigata* var. *cardonica* O. Bolòs & Masclans]

Distribution: Subendemic. Cc Cs

IUCN category: LC

Remarks: Both subspecies of *B. fontqueri* differ morphologically (see Sáez & al., 2010) but are mainly parapatric and are connected by transitional forms.

Biscutella fontqueri Guinea & Heywood subsp. *fontqueri* [*B. laevigata* var. *cuneata* Font Quer; *B. laevigata* subsp. *fontqueri* (Guinea & Heywood) Masclans]

Distribution: Subendemic. Cc Cs

IUCN category: LC

Remarks: Reports of this taxon from Prades mountains (Masclans & Batalla, 1966, sub *B. laevigata* subsp. *fontqueri*) should be referred to *B. fontqueri* subsp. *cardonica*.

Biscutella intermedia Gouan [*B. pyrenaica* A. Huet; *B. laevigata* subsp. *pyrenaica* (Huet) Nyman]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Biscutella laevigata L. subsp. *laevigata*

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn

IUCN category: LC

Remarks: Its presence in southern Catalonia should be disregarded as being in all probability due to confusion with other species of the genus.

Biscutella mediterranea Jord. [*B. laevigata* var. *mediterranea* (Jord.) O. Bolòs & Masclans; *B. valentina* subsp. *mediterranea* (Jord.) Rivas Mart.]

Distribution: Pe Ppe Ae Aw ?O R Cn Cc

IUCN category: LC

Remarks: Its taxonomic status is unclear. Thiebaut & Tison (2016) included *B. mediterranea* in the synonymy of *B. lima* Rchb. The morphological plasticity exhibited by this species (in a broad concept) is highly remarkable. Further research is needed in order to clarify the taxonomy of this group of plants traditionally referred to *B. mediterranea*, including *B. tarraconensis* Sennen.

Biscutella scaposa Mach.-Laur. [*B. laevigata* var. *scaposa* (Guinea) Malag.; *B. subscaposa* Guinea]

Distribution: Pc Pe Ppc Ppe Ae Aw

IUCN category: LC

Remarks: Closely related on morphological grounds to typical *B. coronopifolia*, according to Bolòs & Vigo (1990).

Biscutella stenophylla Dufour subsp. *stenophylla*

Distribution: Cc Cs

IUCN category: LC

Remarks: Its presence in central and northern Catalonia should be disregarded as being in all probability due to confusion with other species of the genus.

Brassica barrelieri (L.) Janka

Non-native: C

Distribution: Pe

Remarks: Known only from Sanavastre, Cerdanya (González & Nuet, 2008). Old reports for Montserrat (Cc) are based on confusion with *B. fruticulosa* subsp. *fruticulosa*.

Brassica fruticulosa Cirillo subsp. *fruticulosa*

Distribution: Ppe O R Cn Cc Cs

IUCN category: LC

Brassica juncea (L.) Czern.

Non-native: C

Distribution: ?Pe ?R +Cn Cc Cs

Remarks: Recently found in the Ebre Delta (Curcó, 2019).

Brassica montana Pourr. [*B. oleracea* subsp. *robertiana* (Gay) Rouy & Foucaud]

Distribution: R Cn

IUCN category: LC

Brassica napus L.

Non-native: C

Distribution: Pe Ae Aw O R Cn Cc Cs

Remarks: Cultivated, sometimes escaped.

Brassica nigra (L.) W.D.J. Koch

Non-native: C

Distribution: Pa Ppe Ae Aw O R Cn Cc

Brassica oleracea L.

Non-native: C

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Cultivated, sometimes escaped.

Brassica rapa L.

Non-native: C

Distribution: Pc Pe Ppe O Cn Cc Cs

Remarks: Cultivated, sometimes escaped.

Brassica repanda (Willd.) DC. subsp. *cadevallii* (Font Quer) Heywood [*B. repanda* subsp. *humilis* (DC.) O. Bolòs & Vigo]

Distribution: Subendemic. Pe Ppc Ppe

IUCN category: LC

Remarks: *Brassica repanda* is a polymorphic species in which stems and fruit size and shape and the size of leaves were used for delimiting several subspecies in the Iberian Peninsula (Gómez Campo, 1993a) some of them of uncertain taxonomic value. According to Gómez Campo (1993a) *B. repanda* subsp. *cadevallii* is very similar to *B. repanda* subsp. *blancoana* (Boiss.) Heywood from which it probably should not be treated as a separated entity.

Brassica repanda subsp. *dertosensis* Molero & Rovira

Distribution: Endemic. Cs

IUCN category: LC

Remarks: Its taxonomic value is unclear. According to Gómez Campo (1993a) subsp. *dertosensis* is a form that does not exceed the limits of variation of subsp. *blancoana* (Boiss.) Heywood, except for its size. However, subsp. *dertosensis* is provisionally accepted as endemic in this treatment.

Brassica repanda subsp. *turbonis* (P. Monts.) J.M. Monts. & Romo

Distribution: Ppc

IUCN category: LC

Remarks: The morphological boundaries between this subspecies and *B. repanda* subsp. *cadevallii* are sometimes blurred.

Brassica tournefortii Gouan

Non-native: C

Distribution: Cn Cc Cs

Bunias erucago* L.Distribution:* Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain.***Bunias orientalis* L.***Non-native:* N*Distribution:* Pe Ppe*Remarks:* This species has colonised recently Cerdanya county (Aymerich, 2014, 2017b).***Cakile maritima* Scop. subsp. *maritima****Distribution:* R Cn Cc Cs*IUCN category:* LC***Calepina irregularis* (Asso) Thell.***Distribution:* Pa Pc Ppc Ppe R Cn Cc Cs*IUCN category:* LC*Remarks:* Its presence in Pa and Cs is based upon old reports.***Camelina microcarpa* DC. [*C. sativa* subsp. *microcarpa* (DC.) Hegi & Em. Schmid]***Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs***Camelina rumelica* Velen. [*C. sativa* subsp. *rumelica* (Velen.) O. Bolòs & Vigo]***Non-native:* N*Distribution:* S Cn***Camelina sativa* (L.) Crantz***Non-native:* C*Distribution:* R*Remarks:* Probably escaped from cultivation and not found recently.***Capsella bursa-pastoris* (L.) Medik.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its distribution is poorly known, since *C. bursa-pastoris* and *C. rubella* were not always separated in the floristic studies.***Capsella rubella* Reut. [*C. bursa-pastoris* subsp. *rubella* (Reut.) Hobkirk]***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* See comments under *C. bursa-pastoris*.

Cardamine alpina Willd. [*C. bellidifolia* L. subsp. *alpina* (Willd.) B.M.G. Jones]

Distribution: Pa Pc Pe

IUCN category: LC

Cardamine amara L. subsp. *pyrenaica* Sennen [*C. amara* subsp. *amara* auct., non L.]

Distribution: Subendemic. Pc Pe

IUCN category: LC

Cardamine amporitana Sennen & Pau [*C. amara* subsp. *olotensis* O. Bolòs]

Distribution: Pe Ppe Ae O R Cn

IUCN category: NT

Remarks: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.

Cardamine crassifolia Pourr. [*C. pratensis* subsp. *nuriae* (Sennen) Sennen]

Distribution: Subendemic. ?Pa Pc Pe Ppc

IUCN category: LC

Remarks: It probably occurs in Pa, since several populations exist in nearby areas.

Cardamine flexuosa With.

Distribution: Pa Pc Pe Ppe O Cn

IUCN category: LC

Remarks: Its presence in Ports massif (Bolòs, 1967) has hitherto not been well documented.

Cardamine heptaphylla (Vill.) O.E. Schulz

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn

IUCN category: LC

Cardamine hirsuta L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Cardamine impatiens L. subsp. *impatiens*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Cardamine occulta Hornem.

Non-native: N

Distribution: Pe Ppc Ppe Ae O Cn

Remarks: First reports were provided by Aymerich (2017b,d).

Cardamine parviflora* L.Distribution:* Pe R*IUCN category:* NT*Remarks:* Restricted to the lower area of Albera massif.***Cardamine pentaphyllos* (L.) Crantz***Distribution:* Pc Pe Ppe*IUCN category:* LC***Cardamine pratensis* L.***Distribution:* Pa Pc*IUCN category:* LC*Remarks:* In the southern side of the Pyrenees it is known only from westernmost Pc. Some specimens from this area show morphological features that suggest the occurrence of events of genetic introgression between *C. pratensis* and *C. crassifolia* (Lihová & al., 2003).***Cardamine raphanifolia* Pourr. [*C. pyrenaica* (L.) Rothm., nom. illeg., non Kuntze]***Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Cardamine resedifolia* L.***Distribution:* Pa Pc Pe Ppe Cn*IUCN category:* LC*Remarks:* A report for Ppc (BDBC) is based on a toponymic confusion.***Cardamine ×enriquei* Marhold, Lihová & Perny [*C. crassifolia* × *C. amara* subsp. *pyrenaica*]***Distribution:* Pc Pe*Remarks:* Recorded from Ripollès and Cerdanya (Marhold & al. 2002b).***Carrichtera annua* (L.) DC.***Distribution:* Aw S Cn Cc Cs*IUCN category:* LC***Clypeola jonthlaspi* L. [incl. *C. jonthlaspi* subsp. *microcarpa* (Moris) Arcang.]***Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Cochlearia pyrenaica* DC. [*C. officinalis* L. subsp. *pyrenaica* (DC.) Rouy & Foucaud]***Distribution:* Pa Pc*IUCN category:* VU

Coincya monensis (L.) Greuter & Burdet subsp. ***cheiranthos*** (Vill.) Aedo, Leadlay & Muñoz Garm. [*C. cheiranthos* (Vill.) Greuter & Burdet]

Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Conringia orientalis (L.) Dumort.

Non-native: N

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its current distribution is narrower than indicated by the historical reports, due to regression arising from changes in agriculture. This species has become vanished in some areas.

Descurainia sophia (L.) Prantl

Distribution: Pa Pc Pe Ppc Ppe Aw S Cn Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Descurainia suffruticosa (Coste & Soulié) Aymerich & L. Sáez [*D. tanacetifolia* (L.) Prantl subsp. *suffruticosa* (Coste & Soulié) Jauzein; *Hugueninia tanacetifolia* (L.) Rchb. subsp. *suffruticosa* (Coste & Soulié) P.W. Ball]

Distribution: Pa Pc

IUCN category: NT

Remarks: See Sáez & Aymerich (2017) for taxonomy.

Diplotaxis catholica (L.) DC.

Non-native: C

Distribution: Cn

Remarks: Reported from Riudarenes, Selva county (Gesti & Vilar, 2019).

Diplotaxis erucooides (L.) DC. subsp. ***erucooides***

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Diplotaxis ilorcitana (Sennen) Aedo, Mart.-Laborde & Muñoz-Garm.

Distribution: S

IUCN category: LC

Remarks: For its distribution see Pedrol & al. (2015).

Diplotaxis muralis (L.) DC. subsp. ***muralis***

Distribution: Pa Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Diplotaxis tenuifolia (L.) DC.*Non-native:* N*Distribution:* ?Pe ?Ppe R Cn ?Cc*Remarks:* Its non-native status is uncertain. Old reports from Pe, Ppe and Cc require confirmation.***Diplotaxis viminea*** (L.) DC.*Distribution:* Aw O R Cn Cc Cs*IUCN category:* LC***Diplotaxis virgata*** (Cav.) DC. subsp. ***virgata****Distribution:* S Cn Cc Cs*IUCN category:* LC*Remarks:* Probably casual outside S.***Draba aizoides*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Draba dubia*** Suter [*D. dubia* subsp. *laevipes* (DC.) Braun-Blanq.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Draba fladnizensis*** Wulfen*Distribution:* Pc*IUCN category:* VU*Remarks:* Also reported from French Pyrenees, close to the boundary of Pe.***Draba hispanica*** Boiss. subsp. ***hispanica****Distribution:* Cs*IUCN category:* NT***Draba nemorosa*** L.*Distribution:* Pc Pe Ppe*IUCN category:* LC***Draba siliquosa*** M. Bieb. [*D. siliquosa* subsp. *carinthiaca* (Hoppe) O. Bolòs & Vigo]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC

Draba subnivalis Braun-Blanq. [*D. tomentosa* subsp. *subnivalis* (Braun-Blanq.) O. Bolòs & Vigo]

Distribution: Pe

IUCN category: NT

Remarks: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.

Draba tomentosa Clairv. subsp. *ciligera* (O.E. Schulz) O. Bolòs & Vigo

Distribution: Pa Pc

IUCN category: LC

Draba verna (L.) DC. [*Erophila verna* (L.) DC.; incl. *E. verna* subsp. *spathulata* (Láng) Vollm.; *E. verna* subsp. *praecox* (Steven) Walters]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: A highly variable species. There appears to be no correlation between morphology, chromosome number, distribution and ecology to support the division of this species in several taxonomic entities (Al-Shehbaz & al., 2010).

Drabella muralis (L.) Fourr. [*Draba muralis* L.]

Distribution: Ppe Ae Aw R Cn Cc Cs

IUCN category: LC

Eruca vesicaria (L.) Cav. [*E. vesicaria* subsp. *sativa* (Mill.) Thell.]

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Usually rare and sporadic in the Pyrenees.

Erucastrum gallicum (Willd.) O.E. Schulz

Distribution: Pa Pc Ppe

IUCN category: NT

Erucastrum nasturtiifolium (Poir.) O.E. Schulz subsp. *nasturtiifolium*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Erucastrum nasturtiifolium subsp. *sudrei* Vivant

Distribution: Pa

IUCN category: DD

Remarks: Gómez Campo (1993) reported this taxon from the Pyrenees (Lleida province). This report is in all probability based on material collected in 22 July 1975 by G. López ("Puerto de la Bonaigua, cara N.", MA 321325), which was identified as *E. nasturtiifolium* subsp. *sudrei* by C. Gómez Campo in 1990.

Erucastrum virgatum C. Presl subsp. ***brachycarpum*** (Rouy) Gómez Campo

Distribution: Cs

IUCN category: LC

Remarks: Known only on the basis of specimens collected in Serra de Montsià (Forcadell, 1999; Royo, 2006); possibly adventive. However, this taxon is common in more southerly areas.

Erysimum cheiri (L.) Crantz [*Cheiranthus cheiri* L.]

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

Erysimum gomez-campo Potaschek [*E. grandiflorum* Desf. subsp. *dertosense* (O. Bolòs & Vigo) O. Bolòs & Vigo]

Distribution: Cc Cs

IUCN category: LC

Remarks: Further research is needed in order to clarify the systematic relationships between *E. gomezcampoi*, *E. medihispanicum* and *E. ruscinonense*.

Erysimum incanum Kunze subsp. ***aurigeranum*** (Jeanb. & Timb.-Lagr.) Nieto Fel.

Distribution: Subendemic. Pc Pe Ppc Ppe Aw S

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *E. incanum* are not clearly defined at present. Some authors regarded *E. incanum* as a variable species, not recognising infraspecific taxa.

Erysimum incanum subsp. ***mairei*** (Sennen & Mauricio) Nieto Fel.

Distribution: Aw S Cs

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *E. incanum* are not clearly defined at present. Some authors regarded *E. incanum* as a variable species, not recognising infraspecific taxa.

Erysimum medihispanicum Potaschek [*E. grandiflorum* Desf. subsp. *medio-hispanicum* (Polatschek) O. Bolòs & Vigo]

Distribution: Ppc Ppe

IUCN category: LC

Remarks: Further research is needed in order to clarify the systematic relationships between *E. medihispanicum*, *E. gomezcampoi* and *E. ruscinonense*.

Erysimum repandum L.

Non-native: N

Distribution: Aw S ?R

Remarks: Its non-native status is uncertain. Occurrences from Aw and S are based upon old observations; reports from l'Empordà (Malagarriga, 1976) require confirmation.

Erysimum ruscinonense Jord. [?*E. collisparsum* Jord.]

Distribution: Subendemic. Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Erysimum seipkae Polatschek [*E. ochroleucum* (Schleich.) DC. subsp. *pyrenaicum* Nyman; *E. sylvestre* subsp. *pyrenaicum* (Nyman) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc

IUCN category: LC

Remarks: López González & Muñoz Garmendia (2004) accepted this taxon at subspecies level within *E. ochroleucum*.

Fourraea alpina (L.) Greuter & Burdet [*Arabis pauciflora* (Grimm) Garcke, *Turritis brassica* Leers]

Distribution: Pa Pc Pe Ppc Ppe Ae Cn

IUCN category: LC

Hesperis laciniata All. subsp. *laciniata*

Distribution: Ppc

IUCN category: VU

Remarks: Restricted to two small areas in Pre-Pyrenean river gorges (Sáez & al., 2010; unpubl. data).

Hesperis matronalis subsp. *candida* (Schulzer, Kanitz & Knapp) Thell.

Distribution: Pa Pc

IUCN category: NT

Hesperis matronalis L. subsp. *matronalis*

Non-native: N

Distribution: Pe Ppe O R Cn

Hirschfeldia incana (L.) Lagr.-Foss.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Hormathophylla lapeyrouseana (Jord.) P. Küpfer [*Alyssum lapeyrouseanum* Jord.]

Distribution: Pc Ppc Ppe Cc

IUCN category: LC

Remarks: Crespo & Mateo (2010) referred the non-Pyrenean populations to *H. lapeyrouseana* subsp. *tortuosa* (Willk.) M.B. Crespo & Mateo [*H. lapeyrouseana* var. *angustifolia* (Willk.) P. Küpfer]. Further research might be useful to clarify the systematic relationships between Iberian and Pyrenean populations.

Hornathophylla spinosa (L.) P. K pfer [*Alyssum spinosum* L.]

Distribution: Ppe R Cc Cs

IUCN category: LC

Hornungia alpina (L.) O. Appel subsp. ***alpina*** [*Pritzelago alpina* (L.) Kuntze subsp. *alpina*]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Hornungia alpina subsp. ***auerswaldii*** (Willk.) O. Appel [*Pritzelago alpina* subsp. *auerswaldii* (Willk.) Greuter & Burdet]

Distribution: Pa

IUCN category: DD

Remarks: Information provided by Lu s Villar (pers. comm.).

Hornungia pauciflora (W.D.J. Koch) Soldano, F. Conti, Banfi & Galasso [*Hymenolobus procumbens* subsp. *pauciflorus* (W.D.J. Koch) Schinz & Thell.]

Distribution: Cc Cs

IUCN category: LC

Hornungia petraea subsp. ***aragonensis*** (Loscos & J. Pardo) Malag.

Distribution: Ppc Ppe Cc Cs

IUCN category: LC

Remarks: There is no consensus on the taxonomic recognition of this subspecies. It was listed from Barcelona province without specific location (Morales, 1993).

Hornungia petraea (L.) Rchb. subsp. ***petraea***

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Hornungia procumbens (L.) Hayek [*Hymenolobus procumbens* (L.) Nutt.]

Distribution: Ppc S R Cc Cs

IUCN category: LC

Iberis amara L. [*I. amara* subsp. *forestieri* (Jord.) Heywood]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Iberis carnosa Willd. subsp. ***carnosa*** [*I. ciliata* subsp. *pruitii* (Tineo) O. Bol s & Vigo]

Distribution: Ppc Ppe Cs

IUCN category: LC

Iberis ciliata All. subsp. ***ciliata***

Distribution: Ppc Ppe Aw S Cc Cs

IUCN category: LC

Iberis linifolia L. subsp. ***linifolia*** [*I. linifolia* subsp. *dunalii* (Bubani) Valdés]

Distribution: O R Cn

IUCN category: LC

Remarks: Its presence in Cc should be disregarded as being in all probability based on confusion with other species of the genus.

Iberis pinnata L.

Distribution: Ppc Aw S? O R Cn Cc Cs

IUCN category: LC

Iberis saxatilis L. subsp. ***saxatilis***

Distribution: Pe Ppc Ppe Cc Cs

IUCN category: LC

Iberis sempervirens L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Iberis spathulata DC. subsp. ***spathulata***

Distribution: Pc Pe Ppe

IUCN category: LC

Ionopsidium glastifolium (L.) M. Koch [*Cochlearia glastifolia* L.]

Distribution: +Cc

IUCN category: RE

Remarks: It has not been observed since 1949 (Sáez & al., 2010).

Isatis tinctoria L. subsp. ***tinctoria***

Non-native: N

Distribution: Pa Pc Pe Ppc Ae O R Cn Cs

Remarks: Formerly cultivated; sporadic outside the Pyrenees.

Kernera saxatilis (L.) Sweet subsp. ***saxatilis***

Distribution: Pa Pc Pe Ppc Ppe Cs

IUCN category: LC

Lepidium bonariense L.

Non-native: N

Distribution: Cs

Remarks: Reported from the Ebre Delta, where it is known since the 1970s.

Lepidium campestre (L.) R. Br.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lepidium coronopus (L.) Al-Shehbaz [*Coronopus squamatus* (Forssk.) Asch.]

Distribution: Pe Ppe Aw S O R Cn Cc Cs

IUCN category: LC

Lepidium densiflorum Schrad.

Non-native: C

Distribution: Cn

Remarks: Reported from suburban areas close to Barcelona (Pyke, 2013b).

Lepidium didymum L. [*Coronopus didymus* (L.) Sm.]

Non-native: N

Distribution: Pa Ppe Ae Aw S O R Cn Cc Cs

Lepidium draba L. subsp. ***draba*** [*Cardaria draba* (L.) Desv. subsp. *draba*]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain. Although it was treated as a non-native species in the studied area (Aymerich & Sáez, 2019b) it is probably an indigenous species.

Lepidium graminifolium L. [*L. graminifolium* subsp. *iberideum* Rouy & Foucaud]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lepidium heterophyllum Benth. subsp. ***heterophyllum***

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Lepidium hirtum (L.) Sm. subsp. ***calycotrichum*** (Kunze) Thell.

Distribution: Cs

IUCN category: VU

Remarks: *Lepidium hirtum* subsp. *hirtum* was reported by Gautier (1897) from northern slope of Albera massif (France), close to the boundary of Pe.

Lepidium latifolium L.

Non-native: N

Distribution: Pa Pe Ppe Ae Aw S R Cn Cc Cs

Remarks: Only casual in several areas.

Lepidium perfoliatum L.

Non-native: C

Distribution: Cn Cc

Lepidium ruderales L.

Distribution: Pc Pe Ppc Ppe S R Cn Cs

IUCN category: LC

Lepidium sativum L.*Non-native*: C*Distribution*: Pa Aw Cc*Remarks*: Cultivated, occasionally escaped.*Lepidium subulatum* L.*Distribution*: Ppc Aw S*IUCN category*: LC*Lepidium villarsii* Gren. & Godr. subsp. *villarsii**Distribution*: Pa Pc Ppe*IUCN category*: NT*Lepidium virginicum* L. subsp. *virginicum**Non-native*: I*Distribution*: Pc Pe Ppe Aw O R Cn*Lobularia maritima* (L.) Desv. subsp. *maritima* [*Alyssum maritimum* (L.) Lam. subsp. *maritimum*]*Distribution*: [Ppe] Aw [S] [O] R Cn Cc Cs*IUCN category*: LC*Lunaria annua* L. subsp. *annua**Non-native*: N*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*Lunaria rediviva* L.*Distribution*: Pa*IUCN category*: LC*Malcolmia maritima* (L.) W.T. Aiton*Non-native*: C*Distribution*: Cn Cc*Remarks*: Known from several coastal locations (Llobregat, Torredembarra-Creixell) where it was used in coastal dune restoration (González & al., 2016; L. Sáez, pers. obs.).*Marcus-kochia littorea* (L.) Al-Shehbaz [*Malcolmia littorea* (L.) W.T. Aiton]*Distribution*: +Cn Cc*IUCN category*: DD*Remarks*: For generic delineation see Al-Shehbaz & al. (2014). Old reports from coastal areas in Baix Llobregat (Cc) and Maresme (Cn) have not been confirmed. Recently found in Cc, probably as a result of introductions in restoration of coastal vegetation.

Marcus-kochia ramosissima (Desf.) Al-Shehbaz [*Malcolmia ramosissima* (Desf.) Thell.]

Distribution: R Cn

IUCN category: NT

Maresia nana (DC.) Batt.

Distribution: R Cc

IUCN category: VU

Matthiola fruticulosa (L.) Maire

Distribution: Ppc Aw S Cc Cs

IUCN category: LC

Matthiola incana (L.) W.T. Aiton subsp. *incana*

Non-native: N

Distribution: Ppe R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Matthiola lunata DC.

Non-native: C

Distribution: Ppe

Remarks: Observed once in Serra del Cadí area, where it was used in roadsides restoration (Vigo & al., 2003).

Matthiola sinuata (L.) W.T. Aiton

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: It has become more rare due to coastal urban development.

Matthiola valesiaca (Gaudin) Boiss. [*M. fruticulosa* subsp. *valesiaca* (Boiss.) P.W. Ball]

Distribution: Pa Pc

IUCN category: NT

Remarks: Restricted to Ruda-Bonaigua massif.

Meniocus linifolius (Willd.) DC. [*Alyssum linifolium* Willd.]

Distribution: S Cs

IUCN category: LC

Microthlaspi perfoliatum (L.) F.K. Mey. [*Thlaspi perfoliatum* L.; *Noccaea perfoliata* (L.) Al-Shehbaz]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Moricandia arvensis (L.) DC.*Distribution:* Pa Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Adventive or sporadic outside S and Cc, probably due to human-mediated range expansion.***Moricandia moricandioides*** subsp. *cavanillesiana* (Font Quer & A. Bolòs) Greuter & Burdet*Distribution:* Subendemic. S Cc Cs*IUCN category:* NT***Moricandia moricandioides*** (Boiss.) Heywood subsp. *moricandioides**Non-native:* C*Distribution:* Cc Cs*Remarks:* Reported from Llobregat Delta area by González & al. (2016). This plant was used in roadsides restoration in some areas. Reports of *M. moricandioides* subsp. *baetica* (Boiss. & Reut.) Sobr.-Vesp. from Cs (Royo, 2006) are probably also referable to subsp. *moricandioides*.***Murbeckiella pinnatifida*** (Lam.) Rothm.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Myagrum perfoliatum*** L.*Non-native:* C*Distribution:* +S***Nasturtium officinale*** R. Br. [*Rorippa nasturtium-aquaticum* (L.) Hayek subsp. *nasturtium-aquaticum*]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Neslia paniculata*** (L.) Desv. subsp. *thracica* (Velen.) Bornm.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs*Remarks:* Due to changes in agriculture, this plant is more rare than suggested by historical data.***Noccaea brachypetala*** (Jord.) F.K. Mey. [*Thlaspi brachypetalum* Jord.; *T. caerulescens* subsp. *brachypetalum* (Jord.) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC

Noccaea caerulea J. Presl & C. Presl subsp. ***caerulea*** [*Thlaspi caerulea* J. Presl & C. Presl subsp. *caerulea*]

Distribution: Pa Pc Pe

IUCN category: LC

Noccaea occitanica (Jord.) F.K. Mey. [*Thlaspi caerulea* subsp. *occitanicum* (Jord.) M. Lainz]

Distribution: Pc Pe

IUCN category: VU

Remarks: This species shows very close affinities (geographically and taxonomically) with *N. caerulea* and *N. brachypetala* (Koch & German, 2013). *Thlaspi tallonis* Sennen was reduced to synonymy of *N. occitanica* by Al-Shehbaz (2014).

Odontarrhena alpestris (L.) Ledeb. [*Alyssum alpestre* L.]

Distribution: Pc Ppc

IUCN category: LC

Odontarrhena serpyllifolia (Desf.) Jord. & Fourr. [*Alyssum serpyllifolium* Desf.; *A. alpestre* subsp. *serpyllifolium* (Desf.) Rouy & Foucaud]

Distribution: Pc Pe Ppc Ppe

IUCN category: LC

Remarks: It was reported from Cc and Cs (without precise locations) by Bolòs & Vigo (1990). Field work and screening of herbarium material did not yield specimens of *O. serpyllifolia* from southern Catalonia.

Petrocallis pyrenaica (L.) R. Br.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Pseudoturritis turrita (L.) Al-Shehbaz [*Arabis turrita* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw Q R Cn Cc Cs

IUCN category: LC

Remarks: On the basis of substantial molecular and morphological differences, Al-Shehbaz (2005) placed *Arabis turrita* in the monotypic new genus *Pseudoturritis* Al-Shehbaz.

Raphanus raphanistrum subsp. ***landra*** (DC.) Bonnier & Layens

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Raphanus raphanistrum L. subsp. ***raphanistrum***

Distribution: Pc Pe Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Raphanus raphanistrum subsp. *sativus* (L.) Domin

Non-native: C

Distribution: Ppe O Cn Cc Cs

Rapistrum rugosum (L.) All.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Rorippa amphibia (L.) Besser

Distribution: +R +Cn

IUCN category: RE

Remarks: Available reports are old (Sáez & al., 2010).

Rorippa islandica (Oeder) Borbás

Distribution: Pa Pc Ppc

IUCN category: LC

Rorippa palustris (L.) Besser

Distribution: Pc Pe Ppc Ppe Aw S +R Cn

IUCN category: LC

Rorippa pyrenaica (All.) Rchb.

Distribution: Pa Pc Pe Ppe O R Cn

IUCN category: LC

Rorippa sylvestris (L.) Besser

Distribution: Pc Pe Ppc Ppe Ae O R Cn

IUCN category: LC

Sinapis alba L. subsp. *alba*

Non-native: C

Distribution: Aw ?S Cc

Remarks: Rarely cultivated and occasionally escaped. This species has recently been used to add organic nutrients to soil (green manure).

Sinapis alba subsp. *mairei* (H. Lindb.) Maire

Non-native: N

Distribution: Ae Aw O R Cn Cc Cs

Remarks: Most reports of subsp. *alba* (Bolòs & al. 2005) are referable to subsp. *mairei*.

Sinapis arvensis L. subsp. ***arvensis****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain. Although it was treated as a non-native species in the studied area (Aymerich & Sáez, 2019b) it is probably an indigenous species.***Sinapis flexuosa*** Poir.*Non-native:* C*Distribution:* +Cc*Remarks:* A collection from Castelldefels (Baix Llobregat) in 1935 is the only known occurrence in our area (Macías, 2008).***Sisymbrella aspera*** (L.) Spach subsp. ***aspera*** [*Rorippa aspera* (L.) Maire subsp. *aspera*]*Pc* *Pe* Ppc Ppe Ae R Cc Cs*IUCN category:* LC***Sisymbrella aspera*** subsp. ***praeterita*** Heywood [*Rorippa aspera* subsp. *praeterita* (Heywood) O. Bolòs & Vigo]*Distribution:* Subendemic. Pc Pe Ppe*IUCN category:* LC*Remarks:* Its occurrence in Pc is based on a single reference (Carreras & al., 1993).***Sisymbrium altissimum*** L.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe***Sisymbrium austriacum*** Jacq. subsp. ***chrysanthum*** (Jord.) Rouy & Foucaud*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Sisymbrium austriacum*** subsp. ***contortum*** (Cav.) Rouy & Foucaud*Distribution:* Ppc*IUCN category:* DD*Remarks:* It was reported from Pallars Jussà (Conesa & Pedrol, 2008); also known from Cerdanya plain in French territory, close to Pe boundary.***Sisymbrium crassifolium*** Cav.*Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Sisymbrium erysimoides*** Desf.*Distribution:* R Cn Cc Cs*IUCN category:* LC

Sisymbrium irio L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Sisymbrium macroloma*** Pomel [*S. orientale* subsp. *macroloma* (Pomel) H. Lindb.]*Distribution:* Pc Pe Ppc Ppe Cc Cs*IUCN category:* NT***Sisymbrium officinale*** (L.) Scop.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Sisymbrium orientale*** L.*Distribution:* Pc Ppc Ppe Aw S R Cn Cc Cs*IUCN category:* LC***Sisymbrium runcinatum*** DC.*Distribution:* Ppc Aw S +Cn Cc Cs*IUCN category:* LC*Remarks:* Probably only sporadic in Cn, where it was known on the basis of an old reference.***Strigosella africana*** (L.) Botsch. [*Malcolmia africana* (L.) R. Br.]*Distribution:* Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably only sporadic in R, Cn and Cc. For generic delineation see Al-Shehbaz & al. (2014).***Subularia aquatica*** L. subsp. *aquatica**Distribution:* Pa Pc*IUCN category:* LC***Succowia balearica*** (L.) Medik.*Distribution:* [Cn] Cc*IUCN category:* VU*Remarks:* In Cn it is locally naturalised in Montjuïc, in Barcelona urban area.***Teesdalia coronopifolia*** (J.P. Bergeret) Thell.*Distribution:* Pe R Cn Cc*IUCN category:* LC***Teesdalia nudicaulis*** (L.) R. Br.*Distribution:* Pa Pe R Cn*IUCN category:* LC

Thlaspi arvense L.*Non-native*: N*Distribution*: Pa Pc Pe Ppc Ppe Ae S O R Cn Cs*Remarks*: Its non-native status is uncertain.*Turritis glabra* L. [*Arabis glabra* (L.) Bernh.]*Distribution*: Pa Pc Pe Ppc Ppe O Cn Cc*IUCN category*: LC*Vella aspera* Pers. [*Boleum asperum* (Pers.) Desv.]*Distribution*: S*IUCN category*: CR**SANTALACEAE***Arceuthobium gambyi* Fridl.*Distribution*: Pc Ppc Ppe ?Cs*IUCN category*: NT*Remarks*: This species, which is known from Provence and Pyrenees, has been separated from *A. oxycedri* on the basis of vegetative and reproductive characters (Fridlender, 2015). The plants of *A. gambyi* are parasitic on *Juniperus phoenicea* (exceptionally *J. oxycedrus*).*Arceuthobium oxycedri* (DC.) M. Bieb.*Distribution*: Cs*IUCN category*: NT*Remarks*: See comments under *A. gambyi*. The plants of *A. oxycedri* are parasitic on *Juniperus oxycedrus* and *J. communis* (Fridlender, 2015).*Osyris alba* L.*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Thesium alpinum* L. subsp. *alpinum**Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC*Thesium catalaunicum* Pedrol & M. Laínz*Distribution*: Endemic. Ppc Ppe*IUCN category*: LC*Thesium humifusum* DC. [*T. humifusum* subsp. *divaricatum* (Mert. & W.D.J. Koch) Bonnier & Layens]*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC

Thesium humile Vahl*Distribution:* Ppc Aw S ?Cn Cc Cs*IUCN category:* LC*Remarks:* It is very scarce and has probably disappeared from most of the locations in which it was reported.***Thesium pyrenaicum*** Pourr. subsp. ***pyrenaicum****Distribution:* Pa Pc ?Pe*IUCN category:* LC*Remarks:* Its presence in Pe requires confirmation. Reports for Ppe and Ppc are based on confusion with *T. catalaunicum*.***Viscum album*** subsp. ***abietis*** (Wiesb.) Janch.*Distribution:* Pa Ppc*IUCN category:* LC***Viscum album*** L. subsp. ***album****Distribution:* Pa Pc Pe Ppe O +Cc*IUCN category:* LC*Remarks:* The information of this taxon from Cc (Montserrat mountain) dates back to Marcet (1952), who reported it as growing on *Quercus ilex*.***Viscum album*** subsp. ***austriacum*** (Wiesb.) Vollm.*Distribution:* Pc Pe Ppe Aw S Cc Cs*IUCN category:* LC**FRANKENIACEAE*****Frankenia hirsuta*** L. [*F. laevis* subsp. *intermedia* (DC.) Maire]*Distribution:* S R Cc Cs*IUCN category:* LC*Remarks:* There is confusion about the distribution and abundance of *F. hirsuta* and *F. laevis*. According to Bolòs & al. (2005) *F. hirsuta* is the most widely distributed species in the studied area. However, Santos (1993) only listed the latter species from Girona province.***Frankenia laevis*** L. subsp. ***laevis****Distribution:* S R Cs*IUCN category:* DD*Remarks:* Its distribution in northeastern Spain needs to be assessed. Typical *F. laevis* was listed for Girona and Lleida provinces (Santos, 1993). Some reports from Cs (Royo, 2006) require confirmation.

Frankenia pulverulenta* L. subsp. *pulverulenta*Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Frankenia thymifolia* Desf.***Distribution:* S*IUCN category:* CR*Remarks:* Reported by Bolòs & al. (1998); see also BDBC. The species has probably become extinct, but it is assigned here to the CR category since less than 50 years have elapsed since the last observations and a few surveys have been conducted to relocate the species.**TAMARICACEAE*****Myricaria germanica* (L.) Desv.***Distribution:* Pc Ppc Aw S Cc*IUCN category:* NT***Tamarix africana* Poir.***Distribution:* Ppc [Ppe] [Ae] Aw S R Cn Cc Cs*IUCN category:* LC***Tamarix boveana* Bunge***Distribution:* Cs*IUCN category:* NT*Remarks:* Known only from coastal areas in the Ebre Delta.***Tamarix gallica* L. [*T. anglica* Webb; *T. canariensis* auct., non Willd.]***Distribution:* Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Villar & al. (2019) suggested that *T. canariensis* Willd. is probably restricted to the Canary Islands. The plants traditionally referred to *T. canariensis* from our area correspond to *T. gallica*.***Tamarix parviflora* DC.***Non-native:* C*Distribution:* R Cn Cc Cs***Tamarix ramosissima* Ledeb.***Non-native:* C*Distribution:* Cc*Remarks:* Known only from the Llobregat Delta (González & al., 2016).

PLUMBAGINACEAE

Armeria alpina Willd. [*A. maritima* subsp. *alpina* (Willd.) P. Silva]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: Reports of *A. bubanii* G.H.M. Lawr are probably referable to intermediate forms between this species and *A. alpina* (Nieto Feliner, 1990)

Armeria arenaria (Pers.) Schult. subsp. *arenaria* [*A. alliacea* subsp. *bupleuroides* (Godr. & Gren.) O. Bolòs & Vigo; *A. alliacea* subsp. *plantaginea* (All.) O. Bolòs & Vigo; *A. alliacea* var. *sicorisensis* (Sennen) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Armeria arenaria subsp. *bilbilitana* (Bernis) Nieto Fel. [*A. alliacea* var. *palearensis* O. Bolòs & Vigo]

Distribution: Ppc

IUCN category: LC

Armeria arenaria subsp. *confusa* (Bernis) Nieto Fel. [*A. alpina* subsp. *confusa* (Bernis) Malag.]

Distribution: Pa Pc

IUCN category: LC

Armeria fontqueri Pau [*A. maritima* var. *fontqueri* (Pau) Bernis]

Distribution: Subendemic. Cc Cs

IUCN category: NT

Armeria muelleri Huet [*A. maritima* subsp. *muelleri* (A. Huet) O. Bolòs & Vigo]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: It was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is probably outside the geographical coverage considered in this study.

Armeria ruscinonensis subsp. *littorifuga* (Bernis) Malag. [*A. alliacea* var. *littorifuga* (Bernis) O. Bolòs & Vigo]

Distribution: Subendemic. Pe R

IUCN category: NT

Armeria ruscinonensis Girard subsp. *ruscinonensis* [*A. alliacea* subsp. *ruscinonensis* (Girard) O. Bolòs & Vigo]

Distribution: Subendemic. R

IUCN category: LC

Ceratostigma plumbaginoides Bunge

Non-native: C

Distribution: Cn Cc

Remarks: Probably persistent after cultivation.

Limoniastrum monopetalum (L.) Boiss.

Distribution: [Cn] [Cc] Cs

IUCN category: VU

Remarks: There is no consensus on its native status. The population from the Ebre Delta was usually considered as autochthonous; however, its native status seems at least questionable.

Limonium auriculae-ursifolium (Pourr.) Druce

Distribution: R

IUCN category: EN

Remarks: It is documented only from Aiguamolls de l'Empordà (Sáez & al., 2010).

Limonium bellidifolium (Gouan) Dumort.

Distribution: +Ae R Cs

IUCN category: VU

Remarks: The disjunct occurrence of this species in Osona (Ae) is documented by the following collection: Costa de Bellmunt, s. Manlleu, 800-900 m, 1938, J. Sala (BC 90993).

Limonium caesium (Girard) O. Kuntze

Non-native: N

Distribution: Cc

Remarks: Known from Roda de Berà, where it was used in coastal restoration (Aymerich & Sáez, 2021c).

Limonium catalaunicum (Willk. & Costa) Pignatti

Distribution: S

IUCN category: VU

Remarks: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this study. *Limonium catalaunicum* is known from Huesca, Lleida, Teruel and Zaragoza provinces (López-Alvarado & al., 2017; L. Sáez, unpubl. data).

Limonium costae (Willk.) Pignatti

Distribution: S

IUCN category: EN

Remarks: Erben (1993) listed the hybrid between *L. aragonense* (Debeaux) Font Quer and *L. costae* for Lleida province.

Limonium densissimum (Pignatti) Pignatti*Distribution*: Cs*IUCN category*: VU*Remarks*: Some morphologically intermediate specimens between *L. densissimum* and *L. virgatum* are probably of hybrid origin.***Limonium echioides*** (L.) Mill.*Distribution*: ?Ae Aw S R Cn Cc Cs*IUCN category*: LC***Limonium geronense*** Erben*Distribution*: Endemic. R*IUCN category*: VU*Remarks*: See Sáez & al. (2009b; 2010) for conservation status and population trends.***Limonium gibertii*** (Sennen) Sennen*Distribution*: Subendemic. Cc Cs*IUCN category*: NT*Remarks*: Endemic to the Balearic Islands and Tarragona province. Some morphologically intermediate specimens between *L. gibertii* and *L. virgatum* are probably of hybrid origin.***Limonium girardianum*** (Guss.) Fourr.*Distribution*: R Cc Cs*IUCN category*: NT*Remarks*: According to Sáez & al. (1999) *L. glaucophyllum* Pignatti should be included in the synonymy of *L. girardianum*.***Limonium hibericum*** Erben [*L. catalaunicum* subsp. *procerum* (Willk.) Pignatti]*Distribution*: Ae Aw S Cc*IUCN category*: LC*Remarks*: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is probably outside the geographical coverage considered in this checklist. Some morphologically intermediate specimens between *L. ruizii* (Font Quer) Fern. Casas and *L. hibericum* are probably of hybrid origin. These plants morphologically related to *L. ruizii* were found in Almatret (L. Sáez, herb. pers.).***Limonium ilergabonum*** López-Alvarado, I. Cobacho, V.J. Arán & L. Sáez*Distribution*: Endemic. Cc*IUCN category*: CR*Remarks*: It is a polyploid relict species known from Flix, with an apomictic breeding system that has been originated from $2n=18$ ancestors (López-Alvarado & al., 2017).

Limonium latebracteatum Erben [*L. delicatulum* subsp. *latebracteatum* (Erben) Castrov. & Cirujano]

Distribution: [Aw] S Cs

IUCN category: NT

Remarks: The plants occurring in Aw (Cardona) are probably of alien origin and their naturalisation probably took place recently.

Limonium narbonense Mill. [*L. vulgare* subsp. *serotinum* (Rchb.) Gams]

Distribution: R Cn Cc Cs

IUCN category: LC

Limonium revolutum Erben [*L. minutum* subsp. *revolutum* (Erben) O. Bolòs & Vigo; *L. emporitanum* Fern. Casas & Molero]

Distribution: Endemic. R

IUCN category: NT

Remarks: Plants intermediate between *L. revolutum* and *L. virgatum* occur in Montgrí massif. They are probably the result of hybridisation and seem to be stabilised.

Limonium sinuatum (L.) Mill.

Non-native: C

Distribution: Cs

Remarks: Reported from two locations by Royo (2006).

Limonium tournefortii (Boiss.) Erben [*L. ilerdense* Erben]

Distribution: Subendemic. [Aw] S

IUCN category: NT

Remarks: Several populations show intermediate characters between *L. latebracteatum* and *L. tournefortii*.

Limonium tremolsii (Rouy) Guinea & Ceballos [*L. minutum* subsp. *tremolsii* (Rouy) P. Fourn.]

Distribution: Endemic. R Cn

IUCN category: NT

Limonium vigo L. Sáez, Curcó & Rosselló

Distribution: Endemic. Cc Cs

IUCN category: EN

Limonium virgatum (Willd.) Fourr.

Distribution: R Cn Cc Cs

IUCN category: LC

Myriolimon ferulaceum (L.) Lledó, Erben & M.B. Crespo [*Limonium ferulaceum* (L.) Chaz.]

Distribution: R Cs

IUCN category: VU

Plumbago auriculata Lam.

Non-native: N

Distribution: R Cn Cc

Plumbago europaea L.

Distribution: Aw S Cc Cs

IUCN category: LC

POLYGONACEAE

Fagopyrum esculentum Moench

Non-native: C

Distribution: Pa Pe Ae Aw S O Cn Cc

Remarks: Currently, it is rarely cultivated; most reports are old.

Fagopyrum tataricum (L.) Gaertn.

Non-native: C

Distribution: +Pa +O +Cn

Remarks: Formerly cultivated, sometimes escaped on cultivated and waste fields. All available reports are old (see Casasayas, 1989).

Fallopia baldschuanica (Regel) Holub [*F. aubertii* (L. Henry) Holub; *Polygonum aubertii* L.]

Non-native: I

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Widely cultivated as an ornamental and naturalised.

Fallopia convolvulus (L.) A. Löve [*Polygonum convolvulus* L.; *Bilderdykia convolvulus* (L.) Dumort.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Fallopia dumetorum (L.) Holub [*Polygonum dumetorum* L.; *Bilderdykia dumetorum* (L.) Dumort.]

Distribution: Pa Pc Pe Ppc Ppe Ae S O R Cn Cc

IUCN category: LC

Koenigia alpina (All.) T.M.Schust. & Reveal [*Polygonum alpinum* L.; *Persicaria alpina* (L.) H. Gross]

Distribution: Pa Pc Pe Cn

IUCN category: LC

Remarks: See Schuster & al. (2015) for taxonomy.

Muehlenbeckia sagittifolia (Ortega) Meisn.

Non-native: C

Distribution: Cc

Remarks: Reported from a disturbed habitat in Llobregat Delta area (Gómez-Bellver & al., 2016).

Oxyria digyna (L.) Hill

Distribution: Pa Pc Pe

IUCN category: LC

Persicaria amphibia (L.) Delarbre [*Polygonum amphibium* L.]

Distribution: Pc Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Persicaria bistorta (L.) Samp. subsp. ***bistorta*** [*Polygonum bistorta* L. subsp. *bistorta*]

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Remarks: A report for Aw (Guixé & al., 2008) should be disregarded as being in all probability erroneous.

Persicaria capitata (D. Don) H. Gross [*Polygonum capitatum* D. Don]

Non-native: C

Distribution: Cn

Remarks: It occurs as a garden escape reported from Sant Feliu de Codines, Vallès Oriental (Sáez & Guillot Ortiz, 2015) and Barcelona (H. Cybulski in biodiversidadvirtual.org).

Persicaria decipiens (R. Br.) K.L.Wilson [*Polygonum salicifolium* Willd.; *Persicaria serrulata* (Lag.) Webb & Moq.]

Distribution: R Cn Cc Cs

IUCN category: LC

Persicaria hydropiper (L.) Delarbre [*Polygonum hydropiper* L.]

Distribution: Pc Pe Ppc Ppe S O R Cn Cc Cs

IUCN category: LC

Persicaria lapathifolia (L.) Delarbre [*Polygonum lapathifolium* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Persicaria maculosa Gray [*Polygonum persicaria* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Persicaria minor (Huds.) Opiz [*Polygonum minus* Huds.]

Distribution: Pc Pe

IUCN category: VU

Remarks: The first confirmed reports were provided by Aymerich (2015a). Currently known from three locations in Cerdanya plain and two in Àneu valley. Old reports from Barcelona and Pa (Willkomm & Lange, 1861-1862; Costa, 1877) are not supported by herbarium specimens (Villar, 1987).

Persicaria mitis (Schrank) Holub [*Polygonum mite* Schrank]

Distribution: Pa Pe O R Cn

IUCN category: LC

Persicaria orientalis (L.) Spach [*Polygonum orientale* L.]

Non-native: C

Distribution: Ppe Ae Aw O Cn Cs

Remarks: Sometimes cultivated for ornament; escaped or locally naturalised in waste fields or damp places.

Persicaria vivipara (L.) Ronse Decr. [*Polygonum viviparum* L.]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Polygonum aviculare L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Polygonum bellardii All.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Polygonum depressum Meisn. [*P. aviculare* subsp. *depressum* (Meisn.) Arcang.; *P. arenastrum* Boreau; *P. aviculare* subsp. *microspermum* (Boreau) Berher]

Distribution: Pa Pc Pe S Cn Cc Cs

IUCN category: LC

Remarks: Its distribution is poorly known. This species has been under-recorded for *P. aviculare*.

Polygonum equisetiforme Sm.*Distribution:* Ppc S [Cn] Cc Cs*IUCN category:* LC*Remarks:* Probably naturalised in Cn, where it was reported based upon a herbarium specimen (BDBC).***Polygonum maritimum*** L.*Distribution:* R Cn Cc Cs*IUCN category:* LC***Polygonum robertii*** Loisel. [*P. aviculare* subsp. *robertii* (Loisel.) O. Bolòs & Vigo]*Distribution:* R Cn*IUCN category:* EN*Remarks:* Known from Empordà beaches and an small area of the Llobregat Delta (Villar, 1987; Sáez & al., 2010; Font & al., 2014; González & al., 2016).***Polygonum romanum*** Jacq. subsp. *gallicum* (Raffaelli) Raffaelli & L. Villar*Distribution:* R*IUCN category:* VU*Remarks:* Restricted to the lowlands of Albera massif. See Sáez & al. (2010) for information about its conservation status.***Polygonum rurivagum*** Boreau [*P. aviculare* subsp. *rurivagum* (Boreau) Berher]*Distribution:* Pc Ppe O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its distribution is poorly known. This species has been under-recorded for *P. aviculare*.***Reynoutria japonica*** Houtt. [*Fallopia japonica* (Houtt.) Ronse Decr.; *Polygonum cuspidatum* Siebold & Zucc.]*Non-native:* I*Distribution:* Pa Pe Cn*Remarks:* Recently naturalised. It is spreading rapidly in Pa (Garona river) due to its ability to reproduce vegetatively. Not invasive in Cn and Pe.***Rumex acetosa*** L. subsp. *acetosa**Distribution:* Pa Pc Pe Ppc Ppe Aw O Cn*IUCN category:* LC***Rumex acetosella*** L. subsp. *angiocarpus* (Murb.) Murb.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC

Rumex alpinus L. [*R. pseudalpinus* Höfft]Distribution: Pa Pc Pe ?Ppe

IUCN category: LC

Rumex arifolius All. [*R. acetosa* subsp. *amplexicaulis* (Lapeyr.) O. Bolòs & Vigo; *R. montanus* auct.]Distribution: Pa Pc Pe Ppe ?Cn

IUCN category: LC

Remarks: Its presence in Montseny (Cn) (BDBC) requires confirmation.

Rumex bucephalophorus L. subsp. ***bucephalophorus***Distribution: O R Cn ?Cc

IUCN category: LC

Rumex bucephalophorus subsp. ***gallicus*** (Steinh.) Rech. fil.

Distribution: ?R Cn ?Cc

IUCN category: LC

Remarks: Its distribution is poorly known. Some specimens morphologically intermediate between subsp. *bucephalophorus* and subsp. *gallicus* have been found in Cc and R.***Rumex conglomeratus*** MurrayDistribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Rumex crispus L.Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Rumex cristatus DC.

Non-native: N

Distribution: Aw R Cn Cc Cs

Rumex hydrolapathum Huds.

Distribution: R +Cn

IUCN category: VU

Rumex intermedius DC.Distribution: Ppc ?Ppe S R Cc Cs

IUCN category: LC

Remarks: Its presence in Ppe (Vives, 1964) requires confirmation.

Rumex longifolius DC.Distribution: Pa Pc Pe Ppc Ppe O

IUCN category: LC

Rumex obtusifolius* L.Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Rumex palustris* Sm.***Distribution:* ?Pa ?Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* There is no consensus on its native status (see Pyke, 2003). Reports from Pa (Vielha) and Ae (Vic) (Cadevall, 1933) require confirmation.***Rumex patientia* L.***Non-native:* N*Distribution:* Pc Pe Ppe O ?R Cn*Remarks:* It was formerly cultivated and is currently casual or locally naturalised. Its presence in R (Bolòs & al., 2005) requires confirmation.***Rumex pulcher* L. subsp. *pulcher****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc ?Cs*IUCN category:* LC*Remarks:* The respective distribution areas of both subspecies recognised within *R. pulche* are not clearly defined at present. According to López González (1990b), subsp. *pulcher* is restricted to Barcelona and Lleida provinces.***Rumex pulcher* subsp. *woodsii* (De Not.) Arcang. [*R. pulcher* subsp. *verrucifer* Font Quer; *R. pulcher* subsp. *divaricatus* auct.]***Distribution:* ?Ppc ?Ae ?Aw ?S ?R Cn Cc Cs*IUCN category:* LC*Remarks:* The respective distribution areas of both subspecies recognised within *R. pulcher* are not clearly defined at present. López González (1990b) listed *R. pulcher* subsp. *woodsii* for all the catalan provinces.***Rumex roseus* L.***Distribution:* R*IUCN category:* NT***Rumex sanguineus* L.***Distribution:* Ppe O ?R Cn*IUCN category:* LC*Remarks:* Its presence in R requires confirmation. Reports from Aiguamolls de l'Empordà (Vayreda, 1902, Cadevall, 1913-1937) are erroneous (Gesti, 2006).***Rumex scutatus* L.***Distribution:* Pa Pc Pe Ppc Ppe O Cs*IUCN category:* LC

Rumex spinosus L. [*Emex spinosa* (L.) Campd.]

Distribution: Cn Cc Cs

IUCN category: LC

Remarks: See Schuster & al. (2015) for taxonomy.

Rumex xpratensis Mert. & W.D.J. Koch [*R. crispus* × *R. obtusifolius*]

Distribution: Pe S Cn Cc

DROSERACEAE

Drosera anglica Huds. [*D. longifolia* L.]

Distribution: Pa Pc

IUCN category: VU

Remarks: Reports of *D. intermedia* (Pérez-Haase & al., 2012) are based on confusion with *D. anglica* (Aymerich & Sáez, 2015).

Drosera rotundifolia L.

Distribution: Pa Pc Pe Cn

IUCN category: LC

Remarks: Occasionally in Pa plants are found that are intermediate in their characters between *D. anglica* and *D. rotundifolia* and probably are of hybrid origin. These supposed hybrids were already reported by Coste & Soulié (1914).

CARYOPHYLLACEAE

Agrostemma githago L.

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Formerly common in cultivated fields, currently rare and only casual in most of the studied area.

Arenaria aggregata (L.) Loisel. subsp. *aggregata*

Distribution: ?Pa Pc Pe Ppc Ppe O Cc Cs

IUCN category: NT

Arenaria biflora L.

Distribution: Pa Pc

IUCN category: NT

Arenaria conimbricensis Brot. subsp. *conimbricensis*

Distribution: ?Ppc ?Ppe Ae Aw S Cn Cc Cs

IUCN category: LC

Remarks: Pyrenean reports (Molero & Vigo, 1981; Guixé & al., 2008) are probably due to confusion with *A. fontqueri*.

Arenaria conimbricensis* subsp. *viridis (Font Quer) Font Quer*Distribution*: Subendemic. Cc Cs*IUCN category*: NT*Remarks*: Both subspecies of *A. conimbricensis* differ morphologically but are connected by transitional forms. Further research might be useful to clarify the systematic relationships between the subspecies recognised within *A. conimbricensis*.***Arenaria fontqueri*** Cardona & J.M. Monts. subsp. ***cavanillesiana*** (Font Quer) Cardona & J.M. Monts. [*A. modesta* var. *cavanillesiana* (Font Quer) O. Bolòs & Vigo]*Distribution*: Endemic. Cn*IUCN category*: NT*Remarks*: *Arenaria fontqueri* subsp. *cavanillesiana* and *A. fontqueri* subsp. *hispanica* were considered to belong to the same taxon by López González (1990a) although no investigations were carried out in depth. Morphological and molecular (nuclear and plastid DNA sequences) studies support the recognition of subsp. *cavanillesiana* as a taxonomic segregate within *A. fontqueri* (C. Roquet & L. Sáez, unpubl. data). *Arenaria fontqueri* subsp. *cavanillesiana* is endemic to the mountain area of Sant Llorenç del Munt and Serra de l'Obac.***Arenaria fontqueri*** subsp. ***hispanica*** (H.J. Coste & Soulié) Cardona & J.M. Monts.*Distribution*: Subendemic. Pc Ppc Ppe*IUCN category*: LC***Arenaria grandiflora*** L. subsp. ***grandiflora****Distribution*: Pa Pc Pe Ppc Ppe Cs*IUCN category*: LC***Arenaria leptoclados*** (Rchb.) Guss. [*A. serpyllifolia* subsp. *leptoclados* (Rchb.) Nyman]*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Arenaria ligericina*** Lecoq & Lamotte subsp. ***canescens*** (H.J. Coste & Soulié) L. Sáez, Aymerich & C. Blanché*Distribution*: Subendemic. Pe Ppe*IUCN category*: LC***Arenaria marschlinsii*** W.D.J. Koch [*A. serpyllifolia* subsp. *marschlinsii* (W.D.J. Koch) Nyman]*Distribution*: Pe Pc*IUCN category*: NT*Remarks*: See Guardiola & al. (2018) for information about its distribution and conservation status.

Arenaria modesta Dufour subsp. ***modesta****Distribution:* Ppc Aw S Cc Cs*IUCN category:* LC*Remarks:* A report from Ppe (Soriano, 1984) is based on confusion with *A. fontqueri* subsp. *hispanica*.***Arenaria multicaulis*** L. [*A. ciliata* subsp. *multicaulis* (L.) Ces.; *A. moehringoides* Murr]*Distribution:* Pa Pc*IUCN category:* LC*Remarks:* See Gutermann (2019) for taxonomy. Reports from Ppe are based on confusion with *A. ligericina* subsp. *canescens*.***Arenaria montana*** L. subsp. ***montana****Distribution:* Pa Pc*IUCN category:* DD*Remarks:* Also reported from Barcelona province without precise location (López González, 1990). We do not know the background of this report, which is probably erroneous.***Arenaria obtusiflora*** G. Kunze subsp. ***ciliaris*** (Loscos) Font Quer*Distribution:* Cs*IUCN category:* DD*Remarks:* Not found recently in Ports massif (Cs) where it was reported based upon herbarium specimens (BC 10562) collected by P. Font Quer in 1917.***Arenaria purpurascens*** DC.*Distribution:* Pa Pc*IUCN category:* LC***Arenaria serpyllifolia*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Arenaria tetraquetra*** L. subsp. ***tetraquetra****Distribution:* Pa Ppc*IUCN category:* LC***Arenaria xestevei*** Font Quer [*A. conimbricensis* subsp. *conimbricensis* × *A. serpyllifolia*]*Distribution:* Aw*Remarks:* Described on the basis of specimens collected in 1910 in Manresa, Bages (see Font Quer, 1949).

Atocion armeria (L.) Raf. [*Silene armeria* L.]

Non-native: C

Distribution: Ppc Ppe

Remarks: A garden escape (Bolòs & Vigo, 1990), rarely occurring found near gardens and houses. Most reports are old.

Atocion rupestre (L.) Oxelman [*Silene rupestris* L.]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Bufonia paniculata Delarbre

Distribution: Ppc Ppe ?R Cs

IUCN category: NT

Remarks: Also reported from Girona province without precise location (Amich, 1990).

Bufonia perennis Pourr. subsp. *perennis*

Distribution: Ppe R

IUCN category: DD

Remarks: Further research might be useful to clarify the systematic relationships between the subspecies recognised within *B. perennis*.

Bufonia perennis Pourr. subsp. *tuberculata* (Loscos) Malag.

Distribution: Ppe Ae Aw Cn Cc Cs

IUCN category: LC

Remarks: Also reported from Central Prepyrenees in Aragon close to Ppc boundary.

Bufonia tenuifolia L.

Distribution: Pc Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Cerastium alpinum L. [*C. alpinum* subsp. *lanatum* (Lam.) Greml; *C. alpinum* subsp. *glabratum* (Hartm.) Á. Löve & D. Löve]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Cerastium arvense L.

Distribution: Pa Pc Pe Ppc Ppe Cn Cs

IUCN category: LC

Cerastium brachypetalum Pers. subsp. *brachypetalum* [incl. *C. brachypetalum* subsp. *tauricum* (Spreng.) Murb.]

Distribution: Pa Pc Pe Ppc Ppe S O R Cn Cc Cs

IUCN category: LC

Cerastium cerastoides (L.) Britton*Distribution:* Pa Pc Pe*IUCN category:* LC***Cerastium dichotomum*** L.*Non-native:* N*Distribution:* R Cn*Remarks:* Its non-native status is uncertain. This species was reported from Banyoles (BDBC; Bolòs & al., 2000) and Barcelona as an introduced species (Bolòs, 1950).***Cerastium fontanum*** aggr.*Remarks:* Two species, usually recognised as subspecies within *C. fontanum* Baumg., are herein provisionally accepted as distinct species.***Cerastium holosteoides*** Fr. [*C. fontanum* subsp. *vulgare* (Hartm.) Greuter & Burdet]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Cerastium lucorum*** Schur [*C. fontanum* subsp. *lucorum* (Schur) Soó]*Distribution:* Ppe O*IUCN category:* LC***Cerastium glomeratum*** Thuill.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cerastium gracile*** Dufour*Distribution:* Pc Ppc Ae Aw S Cc Cs*IUCN category:* LC***Cerastium perfoliatum*** L.*Distribution:* [Pe] [Ppc] [Ppe] [Aw] S [Cn] [Cc] [Cs]*IUCN category:* LC*Remarks:* Its native status is uncertain. Populations from coastal areas are unstable.***Cerastium pumilum*** Curtis*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cerastium pyrenaicum*** J. Gay*Distribution:* Pa Pc Pe*IUCN category:* LC

Cerastium semidecandrum L. [incl. *C. diffusum* var. *sennenii* (Font Quer) O. Bolòs & Vigo; *C. balearicum* F. Herm.]

Pa Pc Pe Ppc Ppe Ae ?Aw S O R Cn Cc Cs

IUCN category: LC

Cerastium tomentosum L.

Non-native: N

Distribution: Pc Pe Ppe Ae Aw O Cn Cc Cs

Remarks: Cultivated for ornament; escaped in scattered places.

Cherleria laricifolia (L.) Iamónico subsp. ***diomedis*** (Braun-Blanq.) A.J. Moore & Dillenb. [*Minuartia laricifolia* (L.) Schinz subsp. *diomedis* (Braun-Blanq.) Mattf.]

Distribution: Pc Pe Ppe Cn

IUCN category: LC

Remarks: It is represented in our area by subsp. *diomedis* (Moore & Dillenberger, 2017). However, the morphological distinction between the two subspecies (based on trichome types) is equivocal (Sáez & al., 2015a).

Cherleria sedoides L. [*Minuartia sedoides* (L.) Hiern]

Distribution: Pa Pc Pe

IUCN category: LC

Corrigiola litoralis L. subsp. ***litoralis***

Distribution: Pc R Cn ?Cc

IUCN category: LC

Corrigiola telephiifolia Pourr.

Distribution: Pc Pe R Cn Cc

IUCN category: LC

Remarks: *Corrigiola litoralis* subsp. *imbricata* (Lapeyr.) O. Bolòs & Vigo was included within the variation of *C. telephiifolia* (Chaudhri, 1990).

Dianthus armeria L. subsp. ***armeria***

Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc

IUCN category: LC

Dianthus barbatus L. subsp. ***barbatus***

Distribution: Pa Pc

IUCN category: LC

Dianthus benearnensis Loret*Distribution:* Pc*IUCN category:* LC*Remarks:* Plants morphologically intermediate between *D. benearnensis* and typical *D. pyrenaicus* were called *D. benearnensis* var. *cognobilis* Timb.-Lagr. [*D. cognobilis* (Timb.-Lagr.) Timb.-Lagr.; *D. pungens* subsp. *cognobilis* (Timb.-Lagr.) O. Bolòs & Vigo].***Dianthus broteri*** Boiss. & Reut.*Distribution:* S ?Cn Cc Cs*IUCN category:* LC***Dianthus carthusianorum*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Dianthus caryophyllus*** L. subsp. *caryophyllus**Non-native:* C*Distribution:* +Cc*Remarks:* Not found recently in Montserrat (Nuet & Panareda, 1991).***Dianthus costae*** Willk.*Distribution:* Ppc S*IUCN category:* LC***Dianthus deltoides*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Dianthus hyssopifolius*** L. subsp. *hyssopifolius**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC***Dianthus multiceps*** Costa & Willk. [incl. subsp. *praepyrenaicus* Bernal]*Distribution:* Subendemic. Pe Ppc Ppe Ae Aw ?O Cn Cc*IUCN category:* LC*Remarks:* An old report for O requires confirmation (Oliver & Font, 2009).***Dianthus nudiflorus*** Griff. [*Velezia rigida* L.]*Distribution:* Ppc Aw S Cn Cc Cs*IUCN category:* LC***Dianthus pungens*** subsp. *brachyanthus* (Boiss.) Bernal, Fern. Casas, G. López, M. Lainz & Muñoz Garm.*Distribution:* Ppc Aw Cc Cs*IUCN category:* LC

Dianthus pungens* subsp. *hispanicus (Asso) O. Bolòs & Vigo*Distribution*: Pc Ppc Aw S Cc Cs*IUCN category*: LC***Dianthus pungens* L. subsp. *pungens****Distribution*: R Cn*IUCN category*: LC***Dianthus pungens* subsp. *ruscinonensis*** (Boiss.) Bernal, M. Laínz & Muñoz-Garm.*Distribution*: Pe*IUCN category*: LC***Dianthus pyrenaicus* subsp. *attenuatus*** (Sm.) Bernal, M. Laínz & Muñoz-Garm. [*D.**pungens* subsp. *catalaunicus* (Willk. & Costa) A. Bolòs & O. Bolòs]*Distribution*: Subendemic. Pe R Cn*IUCN category*: LC*Remarks*: Some populations are morphologically intermediate between subsp. *attenuatus* and subsp. *pyrenaicus* (Bernal, 1999).***Dianthus pyrenaicus* Pourr. subsp. *pyrenaicus****Distribution*: Subendemic. Pa Pc Pe Ppc Ppe*IUCN category*: LC***Dianthus seguieri* Vill. subsp. *requienii*** (Godr.) Bernal, M. Laínz & Muñoz-Garm.[*D. seguieri* subsp. *cadevallii* (Sennen & Pau) O. Bolòs & Vigo]*Distribution*: Subendemic. Pe Ppe Ae O R Cn*IUCN category*: LC***Dianthus vigoi* M. Laínz** [*D. seguieri* subsp. *vigoi* (M. Laínz) O. Bolòs]*Distribution*: Subendemic. Pe*IUCN category*: LC***Dianthus* ×*artignanii*** Sennen [*D. hyssopifolius* subsp. *hyssopifolius* × *D. multiceps*]*Distribution*: Pe Ppc***Dianthus* ×*saxatilis*** nothosubsp. *varians* (Rouy & Foucaud) Bernal, M. Laínz &Muñoz-Garm. [*D. hyssopifolius* subsp. *hyssopifolius* × *D. seguieri* subsp. *requienii*]*Distribution*: Ppe Cn***Dianthus* ×*warionii*** Bucquoy & Timb.-Lagr. [*D. hyssopifolius* subsp. *hyssopifolius* × *D. pyrenaicus* subsp. *attenuatus*]*Distribution*: Cn

Facchinia cerastiifolia (DC.) Dillenb. & Kadereit [*Minuartia cerastiifolia* (DC.) Graebn.]

Distribution: Pa

IUCN category: DD

Remarks: Its presence in our area is based on a report from upper Nere river valley (Coste & Soulié, 1914). Two specimens collected on the way to estany de Garrabea (Pallars Sobirà) identified as *Minuartia cerastiifolia* (BC 925321 and BC 925288) correspond to *Arenaria multicaulis* [= *A. moehringioides*] (also mixed with a small fragment of *A. grandiflora* in the latter herbarium specimen).

Gypsophila elegans M. Bieb.

Non-native: C

Distribution: Pe

Remarks: Observed once in Castellar de n'Hug, Berguedà (Vigo & al., 2003), where it was used in roadsides restoration.

Gypsophila paniculata L.

Non-native: C

Distribution: Cn

Remarks: Cultivated for ornament; escaped in Hostalric, Selva (Llensa, 1945).

Gypsophila repens L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Gypsophila struthium Loefl. subsp. *hispanica* (Willk.) G. López

Distribution: Pc Ppc Aw S

IUCN category: LC

Gypsophila tomentosa L. [*G. perfoliata* subsp. *ilerdensis* (Sennen & Pau) O. Bolòs & Vigo]

Distribution: S

IUCN category: EN

Remarks: A rare species known from few locations in Urgell plain (Sáez & al., 2010).

Gypsophila vaccaria (L.) Sm. [*Vaccaria hispanica* (Mill.) Rauschert; *V. pyramidata* Medik.]

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Formerly common in cultivated fields, but now rare in most of the studied area.

Herniaria alpina Chaix*Distribution:* Pe*IUCN category:* NT

Remarks: Its presence in the studied area has been confirmed by Guardiola (2019), who find a small population in upper Ter Valley. This species was long ago known in French territory of the same massif.

Herniaria cinerea DC. [*H. hirsuta* subsp. *cinerea* (DC.) Arcang.]*Distribution:* Ppc Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Herniaria fruticosa*** L.*Distribution:* Aw S R Cc Cs*IUCN category:* LC***Herniaria glabra*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC

Remarks: Also reported from a location in Castelló province close to the boundary Cs (Royo, 2006).

Herniaria hirsuta L. subsp. *hirsuta**Distribution:* Ppe Aw R Cn Cc*IUCN category:* LC***Holosteum umbellatum*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs*IUCN category:* LC***Loeflingia hispanica*** L.*Distribution:* S R Cs*IUCN category:* NT***Minuartia campestris*** L. subsp. *campestris**Distribution:* Ppc S Cs*IUCN category:* LC

Minuartia cymifera (Rouy & Foucaud) Graebn. [*M. rubra* subsp. *cymifera* (Rouy & Foucaud) P. Monts.; *M. rubra* auct.; *M. funkii* auct.]

Distribution: Pa Pc Pe Ppc Ppe*IUCN category:* LC***Minuartia dichotoma*** L.*Distribution:* Cc*IUCN category:* NT

Minuartia funkii (Jord.) Graebn. [*M. rubra* subsp. *funkii* (Jord.) M. Laínz]

Distribution: Ppc Cs

IUCN category: NT

Minuartia hamata (Hauskn. & Bornm.) Mattf.

Distribution: Ppc Cc Cs

IUCN category: LC

Minuartia montana L. subsp. *montana*

Non-native: C

Distribution: ?S +Cn

Remarks: Vanished in the Barcelona area (see Font Quer, 1949; Bolòs & Vigo, 1990). Its presence in S requires confirmation

Minuartia mucronata (L.) Schinz & Thell. [*M. rubra* (Scop.) McNeill; *M. rubra* subsp. *fastigiata* (Sm.) O. Bolòs, Vigo, Massalles & Ninot]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Iamonico (2016) proposed the names *Stellaria rubra* Scop. and *Arenaria fastigiata* Sm. as heterotypic synonyms of *M. mucronata*.

Minuartia recurva (All.) Schinz & Thell. [*M. recurva* subsp. *condensata* (C. Presl) Greuter & Burdet]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Minuartia rostrata (Pers.) Rchb.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Moehringia muscosa L.

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc

IUCN category: LC

Moehringia pentandra J. Gay [*M. trinervia* subsp. *pentandra* (J. Gay) Nyman]

Distribution: Pe Ppc Ae Aw R Cn Cc Cs

IUCN category: LC

Remarks: According to Oliver & Font (2009), reports from O are erroneous.

Moehringia trinervia (L.) Clairv.

Distribution: Pa Pc Pe Ppc Ppe Ae ?Aw O R Cn Cc Cs

IUCN category: LC

Moenchia erecta (L.) G. Gaertn., B. Mey. & Scherb.

Distribution: Pa Ae O R Cn Cc

IUCN category: LC

Remarks: According to Fernández Carvajal (1990) two subspecies are found in the studied area: subsp. *erecta* and subsp. *octandra* (Mert. & W.D.J. Koch) Cout.

Myosoton aquaticum (L.) Moench

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Paronychia aretioides DC.

Distribution: Cs

IUCN category: DD

Remarks: Reported from Ports massif (Bolòs & al., 2000; Royo & al., 2010).

Paronychia argentea Lam.

Distribution: Pe Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Paronychia capitata (L.) Lam. subsp. *capitata*

Distribution: Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Paronychia echinulata Chater [*P. echinata* (Poir.) DC., nom. illeg., non Lam.]

Distribution: R Cn

IUCN category: LC

Paronychia kapela (Hacq.) A. Kern. subsp. *kapela*

Distribution: ?Aw Cc Cs

IUCN category: LC

Remarks: Chaudhri (1990) listed this taxon for Girona (indicated by a question mark) and Lleida provinces. The distribution of this taxon in the studied area is probably more widespread than currently documented.

Paronychia kapela subsp. *serpyllifolia* (Chaix) Graebn.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc

IUCN category: LC

Remarks: Reports from southern Catalonia (Cs) are probably referable to subsp. *kapela*.

Paronychia polygonifolia (Vill.) DC. [*P. argentea* subsp. *polygonifolia* (Vill.) Rouy]

Pa Pc Pe Ppe

IUCN category: LC

Petrocoptis montsiciana O. Bolòs & Rivas Mart. [*P. pardoii* subsp. *montsiciana* (O. Bolòs & Rivas Mart.) P. Monts.]

Distribution: Subendemic. Ppc Ppe

IUCN category: NT

Remarks: Its taxonomic status is controversial. It was treated at subspecies level under *P. crassifolia* Rouy and *P. pardoii* Pau, or reduced to synonymy of the latter species.

Petrorhagia nanteuilii (Burnat) P.W. Ball & Heywood [*P. prolifera* subsp. *nanteuilii* (Burnat) O. Bolòs & Vigo]

Distribution: Pe Ae Aw S R Cn Cc Cs

IUCN category: LC

Petrorhagia prolifera (L.) P.W. Ball & Heywood

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Polycarpon polycarpoides (Biv.) Zodda subsp. *catalaunicum* O. Bolòs & Vigo

Distribution: R

IUCN category: LC

Polycarpon tetraphyllum L. subsp. *tetraphyllum*

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Polycarpon tetraphyllum subsp. *diphyllum* (Cav.) O. Bolòs & Font Quer [*P. tetraphyllum* var. *font-queri* O. Bolòs & Vigo]

Distribution: R ?Cn Cc Cs

IUCN category: LC

Psammophiliella muralis (L.) Ikonn. [*Gypsophila muralis* L.]

Distribution: Pa Pe ?R Cn

IUCN category: DD

Remarks: Reports from R require confirmation. Recent information about this species is poor, also from the Pyrenees. However, its presence was confirmed in French Cerdanya plain, very close (c. 150 m away) to Pe boundary (Lewin, 2018).

Rabelera holostea (L.) M.T. Sharples & E. Tripp [*Stellaria holostea* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Remarks: See Sharples & Tripp (2019) for taxonomy. This species is also known from Fredes (Castelló province) close to the boundary of Cs.

Rhodalsine geniculata (Poir.) F.N. Williams [*Minuartia geniculata* (Poir.) Thell.]

Non-native: C

Distribution: +Aw +Cn

Remarks: Reported as probably adventive in Anoia and Barcelonès (Font Quer, 1949; Bolòs & Vigo, 1990).

Sabulina mediterranea (Link) Rchb. [*Minuartia mediterranea* (Link) K. Malý; *M. hybrida* subsp. *mediterranea* (Link) O. Bolòs & Vigo]

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: See Dillenberger & Kadereit (2014) for taxonomy.

Sabulina tenuifolia (L.) Rchb. subsp. *tenuifolia* [*Minuartia hybrida* (Vill.) Schischk. subsp. *hybrida*]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sabulina tenuifolia subsp. *vaillantiana* (DC.) Dillenb. & Kadereit [*Minuartia hybrida* subsp. *vaillantiana* (DC.) Friedrich]

IUCN category: DD

Remarks: Its distribution is very incompletely known. Favarger & Montserrat (1990) listed this taxon for Barcelona, Lleida and Tarragona provinces.

Sabulina verna (L.) Rchb. subsp. *verna* [*Minuartia verna* (L.) Hiern subsp. *verna*]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Sabulina villarii (Balb.) Rchb. [*Minuartia villarii* (Balb.) Wilczek & Chenevard]

Distribution: ?Pc Pe Ppe

IUCN category: NT

Remarks: Known only from Tosa d'Alp and Pedraforca massifs. This species was listed for Lleida province (Favarger & Montserrat, 1990), probably based on a collection from Mata de València, Pallars Sobirà (1933, leg. P. Font Quer in BC, specimen revised by C. Favarger 1985).

Sagina alexandrae Iamónico [*S. subulata* (Sw.) C. Presl, nom. illeg., non d'Urv.]

Distribution: R Cn

IUCN category: LC

Sagina apetala Ard. [*S. apetala* subsp. *ciliata* (Fr.) Hook. f.]

Distribution: Pa Pe Ppe O R Cn Cc

IUCN category: LC

Sagina maritima G. Don [*S. apetala* subsp. *maritima* (G. Don) Hook. f.]

Distribution: R Cn Cc Cs

IUCN category: LC

Sagina micropetala Rauschert [*S. apetala* subsp. *erecta* (Hornem.) Herm.]

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: In some regions (Ppe and Ae) it is probably an introduced plant occurring in anthropic habitats.

Sagina procumbens L.

Distribution: Pa Pc Pe Ppc Ppe ?Ae O R Cn [Cc]

IUCN category: LC

Sagina saginoides (L.) H. Karst. [*S. saginoides* subsp. *pyrenaica* (Rouy) Font Quer]

Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Saponaria bellidifolia Sm.

Distribution: Pa Pc

IUCN category: VU

Remarks: A rare species known from four locations (Sáez & al., 2010).

Saponaria caespitosa DC.

Distribution: Pa Ppc

IUCN category: LC

Saponaria glutinosa M. Bieb. [*S. glutinosa* subsp. *zapateri* (Pau) Rivas Goday & Borja]

Distribution: Ppc Cc

IUCN category: EN

Remarks: A rare species known from two locations in Anoia and Alt Urgell counties (Sáez & al., 2010).

Saponaria ocymoides L.

Distribution: Pa Pc Pe Ppc Ppe Ae S Aw O R Cn Cc Cs

IUCN category: LC

Saponaria officinalis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: In several places, it is also cultivated for ornament and some specimens can be locally naturalised.

Scleranthus annuus L.*Distribution:* Pc Pe Ppc Ppe Ae R Cn*IUCN category:* LC*Remarks:* Its distribution is poorly known. This species has been over-recorded for *S. polycarpus*.***Scleranthus delortii*** Gren. [*S. annuus* subsp. *delortii* (Gren.) Meikle; *S. annuus* subsp. *ruscinonensis* (Gillot & H.J. Coste) P.D. Sell]*Distribution:* Pe Ppc R Cn Cc*IUCN category:* LC***Scleranthus perennis*** L.*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Scleranthus polycarpus*** L. [*S. annuus* subsp. *polycarpus* (L.) Bonnier & Layens]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw R Cn Cc Cs*IUCN category:* LC***Scleranthus polycnemoides*** Willk. & Costa [*S. perennis* subsp. *polycnemoides* (Willk. & Costa) Font Quer]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Scleranthus uncinatus*** Schur*Distribution:* Pa Pc*IUCN category:* LC***Scleranthus verticillatus*** Tausch [*S. annuus* subsp. *collinus* (Opiz) Schübl. & G. Martens]*Distribution:* Pc R Cn*IUCN category:* LC***Silene acaulis*** (L.) Jacq.*Distribution:* Pa Pc Pe ?Ppc Ppe*IUCN category:* LC*Remarks:* Its presence in Ppc (Boumort massif) (Gruber, 1978) requires confirmation.***Silene apetala*** Willd. [*S. decipiens* Barceló]*Distribution:* Cc*IUCN category:* DD*Remarks:* Known only from Ginestar, Ribera d'Ebre (Bolòs & al., 1999; Sáez & al., 2010). It was also reported from Rosell (Castelló province) close to the boundary of Cs (Villasescusa, 1998).

Silene baccifera (L.) Roth [*Cucubalus baccifer* L.]
Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc
IUCN category: LC

Silene borderei Jord.
Distribution: Pe Ppc Ppe
IUCN category: LC

Remarks: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.

Silene ciliata Pourr. subsp. *ciliata*
Distribution: Pa Pc Pe Ppe
IUCN category: LC

Silene conica L. subsp. *conica*
Distribution: Pc Ppc S R Cn Cc Cs
IUCN category: LC

Remarks: Its presence in O requires confirmation (Oliver & Font, 2009).

Silene conoidea L.
Distribution: Pe Ppc Ppe Aw O Cn Cc Cs
IUCN category: LC

Silene coronaria (L.) Clairv. [*Lychnis coronaria* (L.) Desr.]
Non-native: I

Distribution: Pa Pc Pe Ppe S O Cn Cc
Remarks: Widely naturalised in Pa, casual or locally naturalised in the rest of the studied area.

Silene dichotoma Ehrh. subsp. *dichotoma*
Non-native: C
Distribution: Pe
Remarks: Reported once from Ribes valley (Bolòs & Vigo, 1979).

Silene dioica (L.) Clairv.
Distribution: Pa Pc Pe Ppc Ppe Cn
IUCN category: LC

Silene diversifolia Otth [*S. rubella* subsp. *segetalis* (Léon Dufour) Nyman]
Distribution: S R Cn Cc Cs
IUCN category: LC
Remarks: A closely related taxon, *S. bergiana* Lindman, was reported from a single location in Ulldecona Montsià (Cs) by Royo (2006, sub *S. rubella* L. subsp. *rubella*). The presence of *S. bergiana* in our area requires confirmation.

Silene flos-cuculi (L.) Clairv. subsp. ***flos-cuculi*** [*Lychnis flos-cuculi* L. subsp. *flos-cuculi*]

Distribution: Pa Pc Pe Ppe Ae O R Cn Cc

IUCN category: LC

Silene gallica L.

Distribution: Pa Pe Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Silene inaperta L. subsp. ***inaperta***

Distribution: Pc Ppc ?Ae Aw S O R Cn Cc Cs

IUCN category: LC

Silene latifolia Poir.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Silene legionensis Lag.

Distribution: Ppc

IUCN category: VU

Remarks: Restricted to Serra del Montsec.

Silene mellifera Boiss. & Reut. [*S. italica* subsp. *nevadensis* (Boiss.) Font Quer, comb. inval.]

Distribution: Cc Cs

IUCN category: LC

Silene muscipula L.

Distribution: Pc Ppc Ppe Aw S O R Cn Cc Cs

IUCN category: LC

Silene neglecta Ten. [*S. nocturna* subsp. *neglecta* (Ten.) Arcang.]

Distribution: Cc

IUCN category: EN

Remarks: It was firstly reported from Gavà by Talavera (1990). In the Iberian Peninsula it is an extremely rare species only known from few locations in Baix Llobregat (L. Sáez, unpubl. data). According to Peruzzi & al. (2014) the first available name at species level for the plant called *S. neglecta* is *S. mutabilis* L. However, our research on this topic (L. Sáez, unpubl. data) conclude that *S. mutabilis* is not conspecific with *S. neglecta*, rather, the first falls within the range of morphological variation of the current concept of *S. nocturna* L.

Silene nemoralis Waldst. & Kit. [*S. italica* subsp. *nemoralis* (Waldst. & Kit.) Nyman; *S. nemoralis* subsp. *crassicaulis* (Willk. & Costa) Rouy]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Silene niceensis All.*Distribution:* R Cn Cc Cs*IUCN category:* LC***Silene noctiflora*** L.*Non-native:* I*Distribution:* Pc Pe Ppe Ae*Remarks:* See Aymerich (2013a, 2016a) for its ecology and distribution. Most populations are found near the Segre river.***Silene nocturna*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Silene nutans*** L. subsp. *nutans* [*S. nutans* subsp. *brachypoda* (Rouy) Graebn. & P. Graebn.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Silene otites*** (L.) Wibel subsp. *otites**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Silene pendula*** L.*Non-native:* C*Distribution:* Ae Cn*Remarks:* A garden escape; sporadically found in urban habitats (Talavera, 1979; Aymerich, 2013d); sometimes confused with *S. pseudoatocion*.***Silene pseudoatocion*** Desf.*Non-native:* N*Distribution:* Pc Ae ?O Cn Cc Cs*Remarks:* A common garden escape; usually occurring as casual, occasionally naturalised in urban and suburban habitats.***Silene ramosissima*** Desf.*Distribution:* Cc*IUCN category:* CR*Remarks:* Confirmed only from Cap de Salou, Tarragonès (Sáez & al., 2010) where it is seriously threatened by urban development and habitat degradation. Reports from the Ebre Delta are probably based on confusion with *S. sclerocarpa* (Curcó, 2007).***Silene saxifraga*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC

Silene sclerocarpa Dufour [*S. cerastoides* auct.]*Distribution:* R ?Cn Cc Cs*IUCN category:* LC*Remarks:* Reports from Mataró (Cn) (Montserrat, 1968) require confirmation.***Silene secundiflora*** Otth*Distribution:* [R] [Cn] Cs*IUCN category:* DD*Remarks:* Reported from Sénia river (Villasescusa, 2000) where it has not been found recently (Royo, 2006). It was also reported as casual from Barcelona area and Llers, Empordà (Bolòs & Vigo, 1990; Sáez & al., 2010).***Silene sedoides*** Poir.*Distribution:* R*IUCN category:* NT***Silene sennenii*** Pau [*S. italica* subsp. *sennenii* (Pau) O. Bolòs & Vigo]*Distribution:* Endemic. R*IUCN category:* VU***Silene stricta*** L.*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Sant Iscle de Vallalta, Maresme (Montserrat, 1967).***Silene tridentata*** Desf.*Distribution:* S [Cn] Cc Cs*IUCN category:* LC***Silene viridiflora*** L.*Distribution:* Pe Cn Cc*IUCN category:* NT*Remarks:* Not found recently in Requesens, Albera massif (Pe) where it was collected by F. Trèmols (voucher specimen at BC).***Silene vulgaris*** subsp. *commutata* (Guss.) Hayek*Distribution:* Pa Pc Pe Ppe ?O Cn ?Cs*IUCN category:* LC*Remarks:* Its distribution is very incompletely known. Further research might be useful to clarify the distribution of the subspecies recognised within *S. vulgaris*.

Silene vulgaris subsp. ***glareosa*** (Jord.) Marsden-Jones & Turrill

Distribution: Ppc Ppe Cs

IUCN category: LC

Remarks: Its distribution in northeastern Iberian Peninsula needs to be assessed. This taxon was reported from Pyrenees (Barcelona and Lleida provinces) by Talavera (1990). Old reports from Cadaqués (see Willkomm & Lange, 1874-1880) are probably erroneous.

Silene vulgaris subsp. ***prostrata*** (Gaudin) Schinz & Thell.

Distribution: Pc Pe Ppc Ppe Cs

IUCN category: LC

Remarks: Its distribution is very incompletely known. Further research might be useful to clarify the distribution of the subspecies recognised within *S. vulgaris*.

Silene vulgaris (Moench) Garcke subsp. ***vulgaris***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Spergula arvensis L.

Distribution: Pc Pe Ppe Ae O R Cn Cc

IUCN category: LC

Spergula morisonii Boreau [*S. pentandra* subsp. *morisonii* (Boreau) Celak.]

Distribution: Pc Pe Ppc R

IUCN category: LC

Spergula pentandra L.

Distribution: Ppc R Cn Cc

IUCN category: LC

Spergularia bocconei (Scheele) Graebn. [*Spergula bocconei* (Scheele) Pedersen; *Spergularia rubra* subsp. *atheniensis* (Heldr. & Sartori) Rouy & Foucaud]

Distribution: S R Cn Cc Cs

IUCN category: LC

Spergularia diandra (Guss.) Heldr. [*Spergula diandra* (Guss.) Murb.; *Spergularia rubra* subsp. *diandra* (Guss.) Arcang.]

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Spergularia heldreichii Foucaud [*Spergula heldreichii* (Foucaud) G. López; *Spergularia rubra* subsp. *heldreichii* (Foucaud) O. Bolòs & Vigo]

Distribution: R Cs

IUCN category: LC

Spergularia marina (L.) Besser [*Spergula marina* (L.) Bartl.]

Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Spergularia media (L.) C. Presl [*Spergula media* (L.) Bartl.]

Distribution: Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Spergularia nicaeensis Burnat [*Spergula nicaeensis* (Burnat) G. López; *Spergularia rubra* subsp. *nicaeensis* (Burnat) Briq.]

Distribution: Pe Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Its presence in Pe (BDBC) requires confirmation.

Spergularia purpurea (Pers.) G. Don [*Spergula purpurea* (Pers.) D. Dietr.]

Distribution: Cn

IUCN category: DD

Remarks: Although this species was not listed for our area by Ratter (1990) and no recent reports exist, it was formerly collected at two locations in Selva and Maresme counties (Montserrat, 1968; Bolòs & Vigo, 1990; Aymerich & Sáez, 2015).

Spergularia rubra (L.) J. Presl & C. Presl [*Spergula rubra* (L.) Bartl.; *Spergularia campestris* (L.) Asch.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Spergularia segetalis (L.) G. Don [*Spergula segetalis* (L.) Vill.]

Distribution: ?Pc Pe Cc

IUCN category: VU

Remarks: Currently only known from Cerdanya area (Pe) and Prades mountains (Cc).

Stellaria alsine Grimm

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Stellaria apetala Ucria [*S. pallida* (Dumort.) Crép.; *S. media* subsp. *pallida* (Dumort.) Asch. & Graebn.]

Distribution: ?Pc Ppc S R Cn Cc Cs

IUCN category: LC

Stellaria graminea L.

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Stellaria media (L.) Vill. [*S. maritima* (All.) Chiov.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Stellaria neglecta Weihe [*S. media* subsp. *major* Arcang.]

Distribution: Pc Pe O Cn

IUCN category: LC

Remarks: Old reports from Cadaqués (R) due to Vayreda (1879, sub *Stellaria media* var. *major*) require confirmation.

Stellaria nemorum subsp. *montana* (Pierrat) Berher [*S. nemorum* subsp. *glochidisperma* Murb.]

Distribution: Pa Pc Pe Ppc Ppe O

IUCN category: LC

Remarks: Intermediate specimens between both subspecies of *S. nemorum* were called *S. ×nemorum* nothosubsp. *kersii* Romo. These intermediate plants were reported from Pc, Pe and O.

Stellaria nemorum L. subsp. *nemorum*

Distribution: Pa Pc

IUCN category: LC

Stellaria ruderalis M. Lepší, P. Lepší, Z. Kaplan & P. Koutecký

Distribution: Pe Ae R Cn

IUCN category: LC

Remarks: First reports from Collserola mountain and Cap de Creus Peninsula (Sáez, 2020); later found elsewhere. Its distribution seems to be underestimated due to confusion with *S. media*.

Telephium imperati L. subsp. *imperati*

Distribution: Pc Pe Ppc Ppe Ae S Cn Cc Cs

IUCN category: LC

Viscaria alpina (L.) Don [*Silene suecica* (Lodd.) Greuter & Burdet; *Lychnis alpina* L.]

Distribution: Pa Pc Pe

IUCN category: LC

Viscaria vulgaris Bernh. [*Lychnis viscaria* L.; *Silene viscaria* (L.) Jess.]

Non-native: C

Distribution: Pc ?O

Remarks: Reported once from Alt Urgell, as a probably garden throw-out (Aymerich, 2013a). Oliver (2019) listed this species for Garrotxa.

AMARANTHACEAE*Alternanthera caracasana* Kunth*Non-native:* N*Distribution:* Cn Cc Cs*Alternanthera philoxeroides* (Mart.) Griseb.*Non-native:* I*Distribution:* Cn*Remarks:* Guardiola & Petit (2020) reported this species from the river Mogent, in Vallès plain.*Alternanthera pungens* Kunth*Non-native:* N*Distribution:* Cn Cc Cs*Amaranthus albus* L.*Non-native:* I*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Amaranthus blitoides* S. Watson*Non-native:* I*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Amaranthus blitum* L.*Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain.*Amaranthus caudatus* L.*Non-native:* C*Distribution:* O Cn Cc*Remarks:* Cultivated as an ornamental and rarely escaped.*Amaranthus cruentus* L. [*A. hybridus* subsp. *cruentus* (L.) Thell.]*Non-native:* N*Distribution:* ?Pa Pe ?Ppe Ae Aw O R Cn Cc Cs*Remarks:* The name *A. cruentus* is applied here to those plants included in the southern group of *A. hybridus* (in a broad sense) with short bracts (see Adhikary & Pratt, 2015).*Amaranthus deflexus* L. [*A. mauritii* Sennen, nom. inval.]*Non-native:* N*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs

Amaranthus emarginatus Uline & W.L. Bray [*A. blitum* subsp. *emarginatus* (Uline & W.L. Bray) Carretero, Muñoz Garm. & Pedrol; *A. polygonoides* Moq., nom. illeg.]

Non-native: N

Distribution: Pc Ppe Ae Aw S Cn Cc Cs

Amaranthus graezicans L. subsp. *sylvestris* (Vill.) Brenan [*A. angustifolius* auct., non Lam.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Amaranthus hybridus L. [*A. cruentus* auct., non L.]

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn CcCs

Remarks: The name *A. hybridus* is applied here to those plants included in the northern group of *A. hybridus* (in a broad sense) with long bracts. These plants were usually called *A. hybridus* subsp. *hypochondriacus*, which creates confusion with the domesticated species *A. hypochondriacus*.

Amaranthus hypochondriacus L. [*A. hybridus* subsp. *hypochondriacus* (L.) Thell.]

Non-native: C

Distribution: Ppe Cn

Remarks: The name *A. hypochondriacus* is applied here to domesticated plants with red inflorescences which are probably originated from *A. hybridus*. These plants are cultivated for ornament and rarely escape.

Amaranthus muricatus Moq.

Non-native: I

Distribution: Pe Aw S R Cn Cc Cs

Amaranthus palmeri S. Watson

Non-native: N

Distribution: +Ae S Cn Cc Cs

Remarks: See Verloove & al. (2019).

Amaranthus powellii S. Watson [incl. *A. bouchonii* Thell.]

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae S O R Cn Cc Cs

Remarks: The plants with indehiscent fruits (which were called *A. bouchonii* Thell. or *A. hybridus* subsp. *bouchonii* (Thell.) O. Bolòs & Vigo) are included here within *A. powellii*.

Amaranthus retroflexus L.

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Amaranthus spinosus L.

Non-native: C

Distribution: +Cn Cs

Amaranthus tricolor L.

Non-native: C

Remarks: This species was reported without precise location (Andreu & al., 2012) and it has not been checked by us. We do not know the background of this report.

Amaranthus viridis L.

Non-native: I

Distribution: Ae S Cn Cc Cs*Amaranthus* × *ozanonii* Priszter [*A. hybridus* × *A. retroflexus*]

Non-native: C

Distribution: Ae

Remarks: *Amaranthus* × *galii* Sennen & Gonzalo, described from Manlleu, is a taxonomic synonym of *A. ozanonii* (Mestre & al., 2021).

Amaranthus × *soproniensis* Priszter & Kárpáti [*A. powellii* × *A. retroflexus*]

Non-native: C

Distribution: Aw

Remarks: Reported from Artesa de Segre, Noguera (Casasayas, 1989)

Amaranthus × *tarraconensis* Sennen & Pau [*A. deflexus* × *A. muricatus*]

Non-native: N

Distribution: Cn Cc Cs

Arthrocaulon macrostachyum (Moric.) Piirainen & G. Kadereit [*Arthrocnemum macrostachyum* (Moric.) Moris]Distribution: S Cn Cc Cs

IUCN category: LC

Remarks: Its current presence in S requires confirmation, since the last confirmed report goes back to c. 1985 (Conesa & al., 2012).

Atriplex halimus L.Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Atriplex hortensis L.

Non-native: N

Distribution: Pc Pe Ppe Aw S O R Cn Cc Cs

Atriplex micrantha Ledeb. [*A. heterosperma* Bunge]

Non-native: N

Distribution: Pe Ppe S

Atriplex patula L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Atriplex portulacoides L. [*Halimione portulacoides* (L.) Aellen]

Distribution: R Cn Cc Cs

IUCN category: LC

Atriplex prostrata DC. [*A. hastata* auct.]

Distribution: Pc Ppc Ppe ?Ae Aw S R Cn Cc Cs

IUCN category: LC

Atriplex rosea L.

Distribution: Pc Ppc Ae Aw S Cc Cs

IUCN category: LC

Atriplex semibaccata R. Br.

Non-native: I

Distribution: Cn Cc

Remarks: Reported from the lower Llobregat basin, in Barcelona metropolitan area (Sánchez Gullón & Verloove 2015; Álvarez & al., 2016).

Atriplex tatarica L.

Non-native: N

Distribution: Aw ?S Cn ?Cs

Remarks: Sometimes confused with *A. tornabenei* (Aymerich, 2016a). Reports of *A. tornabenei* from inland areas are probably referable to *A. tatarica*.

Atriplex tornabenei Guss. [*A. rosea* subsp. *tarraconensis* (Sennen) O. Bolòs & Vigo, *A. tatarica* auct., non L.]

Distribution: ?S R Cn Cc Cs

IUCN category: LC

Remarks: Its presence in S (Mayoral, 1994) requires confirmation.

Bassia hyssopifolia (Pall.) Kuntze [*B. hyssopifolia* subsp. *reuteriana* (Boiss.) O. Bolòs & Font Quer]

Distribution: Ppc S [Cn]

IUCN category: LC

Remarks: It has not been observed in S since 1986 (Conesa & al., 2012).

Bassia prostrata (L.) Beck [*Kochia prostrata* (L.) Schrad.]

Distribution: Pc Ppc Aw S R Cc Cs

IUCN category: LC

Bassia scoparia (L.) Voss subsp. ***densiflora*** (B.D. Jacks.) Cirujano & Velayos [*Kochia sicorica* O. Bolòs & Masclans; *Bassia sicorica* (O. Bolòs & Masclans) Greuter & Burdet]

Distribution: Pc Pe Ppc Ppe Aw S R Cc Cs

IUCN category: LC

Remarks: The morphological characters used to distinguish subsp. *scoparia* from subsp. *densiflora* are few and further study may prove that they are not constant enough to be taxonomically useful.

Bassia scoparia (L.) Voss subsp. ***scoparia*** [incl. *Kochia scoparia* subsp. *culta* (Voss) O. Bolòs & Vigo]

Non-native: N

Distribution: ?Pc Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Beta maritima L. [*B. vulgaris* subsp. *maritima* (L.) Arcang.]

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Beta vulgaris L. [incl. *B. cicla* L.]

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Blitum bonus-henricus (L.) Rchb. [*Chenopodium bonus-henricus* L.]

Distribution: Pa Pc Pe Ppc Ppe Aw

IUCN category: LC

Blitum petiolare Link [*Chenopodium exsuccum* (Loscos) Uotila]

Distribution: Ppc Ppe

IUCN category: EN

Remarks: According to Fuentes-Bazan & al. (2012) *Chenopodium exsuccum* is a taxonomic synonym of *B. petiolare*. This species, which is morphologically close to *B. virgatum*, was reported from two mountain areas: Montsec (Romo, 1989a) and Queralt (Aymerich, 1998).

Blitum virgatum L. subsp. ***virgatum*** [*Chenopodium foliosum* (Moench) Asch.]

Distribution: Pe Ppc Ppe

IUCN category: NT

Camphorosma monspeliaca (L.) Voss subsp. ***monspeliaca***

Distribution: ?Aw S R Cn Cc Cs

IUCN category: LC

Caroxylon vermiculatum (L.) Akhani & Roalson [*Salsola vermiculata* L.]

Distribution: Ae Aw S Cn Cc Cs

IUCN category: LC

Celosia argentea L.

Non-native: C

Distribution: Cn

Remarks: Recently found in Tordera river (Verloove & Aymerich, 2020). In this treatment, *C. argentea* and *C. cristata* are considered separate species, being the first taxon the likely wild direct progenitor of the second one.

Celosia cristata L.

Non-native: C

Distribution: R Cn

Remarks: Most records date back to early 20th century (Casasayas, 1989); recently found in Guilleries massif (Gesti & Vilar, unpubl. data). In our treatment, the ornamental plants traditionally called *C. argentea* are referred to *C. cristata*. This species is known only in cultivation or as an escape from cultivation.

Chenopodium hybridum (L.) S. Fuentes, Uotila & Borsch [*Chenopodium hybridum* L.]

Distribution: Pa Pc Pe Ppe ?Ae R Cn

IUCN category: LC

Chenopodium murale (L.) S. Fuentes, Uotila & Borsch [*Chenopodium murale* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Chenopodium album L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: *Chenopodium pedunculare* Bertol., sometimes recognised at infraspecific rank within *C. album*, was reported from Barcelona urban area (Pyke, 2003).

Chenopodium nutans (R. Br.) S. Fuentes & Borsch subsp. *nutans* [*Einadia nutans* (R. Br.) A.J. Scott subsp. *nutans*; *Rhagodia nutans* R. Br. subsp. *nutans*]

Non-native: I

Distribution: Cn

Remarks: Naturalised in coastal habitats and waysides, between Calella and Sant Feliu de Guíxols.

Chenopodium opulifolium W.D.J. Koch & Ziz [*C. album* subsp. *opulifolium* (W.D.J. Koch & Ziz) Celak.]

Distribution: Pc Pe Ppc Ppe ?Ae Aw S R Cn Cc Cs

IUCN category: LC

Chenopodium striatiforme Murr*Non-native:* N*Distribution:* Cn Cc Cs

Remarks: The name *C. strictum* Roth (Aymerich & Sáez, 2019b) should be provisionally referred to *C. striatiforme*, which belongs to the *C. strictum* aggr. (Uotila, 2011). Further studies are needed to confirm the taxonomic value of *C. striatiforme* and understand its relationships with *Ch. betaceum* Andr. (see Mosyakin, 2017). *Chenopodium striatiforme* was reported by Pyke (2003) and Molero & al. (2016). See also Mosyakin & Mandák (2020) for the problematic taxonomic identity of *C. missouriense* Aellen (*C. album* var. *missouriense* (Aellen) Bassett & Crompton).

Chenopodium vulvaria L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Dysphania ambrosioides*** (L.) Mosyakin & Clemants [*Chenopodium ambrosioides* L.]*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Dysphania anthelmintica*** (L.) Mosyakin & Clemants [*Chenopodium anthelminticum* L.]*Non-native:* N*Distribution:* Cn

Remarks: Reported as naturalised in waste places from river Ripoll in Ripollet, Vallès plain (Sánchez Gullón & Verloove, 2015).

Dysphania botrys (L.) Mosyakin & Clemants [*Chenopodium botrys* L.]*Distribution:* Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Dysphania multifida*** (L.) Mosyakin & Clemants [*Chenopodium multifidum* L.]*Non-native:* N*Distribution:* Cn Cc Cs***Dysphania pumilio*** (R. Br.) Mosyakin & Clemants [*Chenopodium pumilio* R. Br.]*Non-native:* N*Distribution:* O R Cn Cc Cs***Halogeton sativus*** (L.) Moq. [*Salsola sativa* L.]*Non-native:* C*Distribution:* ?+R

Remarks: An occurrence from Girona province is supported by herbarium material collected in 1956 (Pedrol, 1990).

Lipandra polysperma (L.) S. Fuentes, Uotila & Borsch [*Chenopodium polyspermum* L.]

Distribution: Pa Pc Pe Ppc Ppe O R Cn

IUCN category: LC

Remarks: Reports from Barcelona urban area are probably erroneous (Bolòs & Vigo, 1990).

Microcnemum coralloides (Loscós & J. Pardo) Buen subsp. ***coralloides***

Distribution: S

IUCN category: CR

Remarks: Only a single location is known in Urgell plain. Its population is strongly fluctuant (Aymerich & Sáez, 2021a).

Oxybasis chenopodioides (L.) S. Fuentes, Uotila & Borsch [*Chenopodium chenopodioides* (L.) Aellen; *C. rubrum* subsp. *crassifolium* (Hornem.) Maire]

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: See comments under *Oxybasis rubra*.

Oxybasis glauca (L.) S. Fuentes, Uotila & Borsch [*Chenopodium glaucum* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Oxybasis rubra (L.) S. Fuentes, Uotila & Borsch [*Chenopodium rubrum* L.]

Distribution: Pc Pe Ppc Ppe Aw

IUCN category: LC

Remarks: Known mainly from upper Segre basin, and locally from La Baells reservoir, Llobregat basin (Aymerich, 2017d). Previous Pyrenean reports of *O. chenopodioides* are probably based on confusion with *O. rubra*.

Oxybasis urbica (L.) S. Fuentes, Uotila & Borsch [*Chenopodium urbicum* L.]

Distribution: Pc Ppe S O R Cn Cc Cs

IUCN category: LC

Patellifolia procumbens (Hornem.) Scott, Ford.-Lloyd & J.T. Williams [*Beta patellaris* Moq.; *Patellifolia patellaris* (Moq.) A.J. Scott, B.V. Ford-Lloyd & J.T. Williams]

Distribution: Cn Cs

IUCN category: LC

Remarks: See Thulin & al. (2010) for taxonomy. Reported as naturalised from Barcelona (BDBC, based on HBIL) and Sant Carles de la Ràpita (Royo, 2003, 2006). Its presence in Barcelona requires confirmation.

Polycnemum arvense L. [*P. majus* auct., non A. Braun]

Distribution: Pc Pe Ppc Ppe ?Ae Aw S O R Cn Cc Cs

IUCN category: LC

Salicornia alpini Lag. subsp. ***alpini*** [*Sarcocornia perennis* subsp. *alpini* (Lag.) Castrov.]

Distribution: R Cs

IUCN category: DD

Remarks: See Piirainen & al. (2017) for taxonomy. Hybrids between this species and *Sarcocornia fruticosa* (here treated as *Salicornia lagascae*) were reported from Sant Carles de la Ràpita (Castroviejo & Lago, 1992).

Salicornia lagascae (Fuente, Rufo & Sánchez Mata) Piirainen & G. Kadereit

Distribution: R Cc Cs

IUCN category: LC

Remarks: Reports of *Salicornia fruticosa* (L.) L. [*Sarcocornia fruticosa* (L.) A.J. Scott] are apparently referable to *S. lagascae*. See Fuente & al. (2015) and Piirainen & al. (2017) for taxonomy.

Salicornia perennans Willd. subsp. ***perennans*** [*S. patula* Duval-Jouve]

Distribution: S R Cc Cs

IUCN category: LC

Salicornia procumbens Sm. subsp. ***procumbens*** [*S. emericii* Duval-Jouve; *S. dolichostachya* Moss; *S. herbacea* auct.]

Distribution: ?S R Cs

IUCN category: VU

Salsola squarrosa Moq. subsp. ***controversa*** (Lojac.) Mosyakin [*S. controversa* Lojac.; *S. kali* auct., non L.]

Distribution: R Cn Cc Cs

IUCN category: LC

Salsola tragus L. [*S. kali* subsp. *tragus* (L.) Čelak.; *S. kali* subsp. *ruthenica* auct.]

Distribution: Pe Ppc Ppe ?Ae Aw S

IUCN category: LC

Soda inermis Fourr. [*Salsola soda* L.]

Distribution: S R Cn Cc Cs

IUCN category: LC

Spinacia oleracea L.

Non-native: C

Distribution: Ppc ?Aw S Cn Cc Cs

Remarks: Cultivated and sometimes escaped.

Suaeda spicata (Willd.) Moq. [*S. maritima* subsp. *spicata* (Willd.) O. Bolòs & Vigo; *S. maritima* auct.; *S. altissima* auct.]

Distribution: S R Cn Cc Cs

IUCN category: LC

Suaeda splendens (Pourr.) Gren. & Godr.

Distribution: S R Cc Cs

IUCN category: LC

Suaeda vera J.F. Gmel. [*S. vera* subsp. *braun-blanquetii* (Pedrol & Castrov.) O. Bolòs & Vigo; *S. vera* subsp. *longifolia* sensu O. Bolòs & Vigo; *S. fruticosa* auct.]

Distribution: S R Cn Cc Cs

IUCN category: LC

AIZOACEAE

Aizoanthemopsis hispanicum (L.) Klak [*Aizoon hispanicum* L.]

Distribution: Aw S Cs

IUCN category: LC

Carpobrotus acinaciformis (L.) L. Bolus

Non-native: C

Distribution: R Cn Cc Cs

Carpobrotus edulis (L.) N.E. Br.

Non-native: I

Distribution: S R Cn Cc Cs

Delosperma cooperi (Hook f.) L. Bolus

Non-native: C

Distribution: Pe Ppe

Remarks: It is known from man-made habitats from Espinavell (Ripollès) and Berga (Berguedà) (Aymerich, 2017b, 2019).

Delosperma ecklonis (Salm-Dyck) Schwantes

Non-native: N

Distribution: Cn

Remarks: Naturalised (with invasive tendency) in coastal habitats from Blanes, Selva (Aymerich, 2016d).

Disphyma crassifolium (L.) L. Bolus [*Mesembryanthemum crassifolium* L.]

Non-native: N

Distribution: R Cn Cc

Remarks: Locally naturalised in coastal habitats.

Drosanthemum floribundum (Haw.) Schwantes*Non-native:* N*Distribution:* Aw S R Cn Cc Cs

Remarks: Plants with light-coloured flowers from the northern coast were referred to *D. candens* (Haw.) Schwantes by Pyke (2009). Moreover, *D. hispidum* (L.) Schwantes was reported from Barcelona (Casasayas, 1989). However, *D. candens* and *D. hispidum* are closely related to *D. floribundum* and difficult to separate. Although we refer all the Catalan populations to *D. floribundum*, the presence of plants morphologically closer to *D. candens* or *D. hispidum* cannot be excluded.

Glottiphyllum longum (Haw.) N.E. Br.*Non-native:* N*Distribution:* R Cn Cc

Remarks: First report from Palamós (Cn, Baix Empordà), where a naturalised population is known (Mallol & Maynés, 2008b); later found in R and Cc as a casual alien.

Lampranthus aureus (L.) N.E. Br.*Non-native:* C*Distribution:* R

Remarks: Found once in Port de la Selva, Alt Empordà (Aymerich, 2017b).

Lampranthus multiradiatus (Jacq.) N.E. Br.*Non-native:* N*Distribution:* R Cc Cs

Remarks: Mainly naturalised in maritime rocks of the northernmost coast (Roses-Colera). Reported by Royo (2006) and Aymerich (2015e, 2017b). There are also reports of *Lampranthus* sp. (*L. cf. conspicuus*) as casual in suburban areas of Barcelona.

Malephora purpureocrocea (Haw.) Schwantes*Non-native:* N*Distribution:* R Cn Cc

Remarks: Mainly naturalised in maritime rocks of the northernmost coast (Roses-Colera) (Pyke, 2008b; Giménez, 2012; unpubl. data); usually casual further south. The garden plants usually called (outside South Africa) *M. crocea* correspond to *M. purpureocrocea*. The taxonomic status of *M. crocea* (Jacq.) Schwanthes is uncertain.

Malephora uitenhagensis Jacobsen & Schwanthes*Non-native:* N*Distribution:* R Cn Cc Cs

Remarks: Known from Roses, Blanes, Ametlla de Mar and Alcanar (Aymerich, 2015e, 2017b, 2020a, unpubl. data). So far it is only naturalised in R and Cn.

Mesembryanthemum cordifolium L. fil. [*Aptenia cordifolia* (L. fil.) Schwantes]

Non-native: N

Distribution: ?R Cn Cc ?Cs

Remarks: Cultivated for ornament and locally naturalised in coastal areas. This species is often confused with *M. ×vascosilvae* (see below).

Mesembryanthemum crystallinum L.

Non-native: C

Distribution: +Cn Cc

Remarks: Reported from Barcelona metropolitan area in 19th century (Costa, 1864; Vayreda, 1879). This species was listed (without precise location) for the coast of the Metropolitan Region of Barcelona (Basnou & al., 2015).

Mesembryanthemum lancifolium (L. Bolus) Klak [*Aptenia lancifolia* L. Bolus]

Non-native: C

Distribution: Cn

Remarks: Reported from Blanes (Guillot, 2012).

Mesembryanthemum nodiflorum L.

Distribution: R +Cn Cs

IUCN category: DD

Remarks: Its populations are unstable. Only recently reported from two locations in Ebre Delta area (Royo, 2003; Curcó & Guerao, 2019) and one location in Cap de Creus peninsula (Aymerich, 2016e), where it could have been transported by seagulls. Reports from Cn (Barcelona and its surroundings) go back to the 19th century.

Mesembryanthemum ×vascosilvae (Gideon, F. Sm., E. Laguna, F. Verloove & P.P. Ferrer) L. Sáez & Aymerich [*M. cordifolium* × *M. haeckelianum* A. Berger]

Non-native: N

Distribution: Ae Aw R Cn Cc Cs

Remarks: This hybrid, which is often confused with *M. cordifolium*, is found as a garden escape and locally naturalised, mainly in coastal areas. See Sáez & Aymerich (2020) for taxonomy.

Ruschia caroli (L. Bolus) Schwantes

Non-native: N

Distribution: R

Remarks: Reported from Portbou, Llançà and Port de la Selva (Aymerich, 2015e, 2016c, sub *Ruschia tumidula* (Haw.) Schwantes); see also Aymerich (2017b).

Ruschia uncinata (L.) Schwantes

Non-native: C

Distribution: R

Remarks: Reported from Port de la Selva, Alt Empordà (Gómez-Bellver & al., 2020).

PHYTOLACCACEAE*Phytolacca dioica* L.*Non-native:* C*Distribution:* R Cn*Phytolacca americana* L.*Non-native:* I*Distribution:* Pa Ppe Ae Aw S O R Cn Cc Cs**NYCTAGINACEAE***Bougainvillea glabra* Choisy*Non-native:* C*Distribution:* Cn Cc*Remarks:* Listed without precise location by Andreu & Pino (2013); also reported from Garraf and Tossa de Mar (M. Benavides in biodiversidadvirtual.org, 2019-2020).*Mirabilis jalapa* L.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Widely cultivated for ornament. This species constitutes naturalised populations in waste places, mainly in coastal areas, whilst it is generally rare and sporadic in inland areas.**MOLLUGINACEAE***Glinus lotoides* L.*Distribution:* Cn*IUCN category:* CR*Remarks:* Reported from a single location in Caldes de Malavella (Mercadal, 2002); also observed in another nearby place. Its populations are usually unstable, but in this area it has persisted for over a decade.*Mollugo verticillata* L.*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Blanes, Tordera river (Verloove & Aymerich, 2020).**MONTIACEAE***Montia arvensis* Wallr. [*M. fontana* subsp. *chondrosperma* (Fenzl) Walters]*Distribution:* Pe R Cn Cc*IUCN category:* LC

Montia fontana subsp. *amporitana* Sennen

Distribution: Pe R

IUCN category: LC

Montia fontana L. subsp. *fontana* [*M. fontana* subsp. *variabilis* Walters]

Distribution: Pa Pc Pe Ppc Cn

IUCN category: LC

DIDIEREACEAE

Portulacaria afra Jacq.

Non-native: C

Distribution: R Cc Cs

BASELLACEAE

Anredera cordifolia (Ten.) Steenis [*Boussingaultia cordifolia* Ten.]

Non-native: N

Distribution: Pe Ppe Ae Aw S O R Cn Cc Cs

Remarks: Cultivated for ornament. This species constitutes naturalised populations in waste places which are probably maintained through vegetative reproduction.

TALINACEAE

Talinum paniculatum (Jacq.) Gaertn.

Non-native: C

Distribution: Cn

Remarks: Reported from Santa Coloma de Farners, Selva county (Gesti, 2021).

PORTULACACEAE

Portulaca grandiflora Hook.

Non-native: C

Distribution: Aw R Cn Cc Cs

Remarks: Cultivated in gardens, sometimes escaped. In southern Catalonia it is locally naturalised in waste places.

Portulaca oleracea L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Within this species some forms sometimes have been recognised at subspecies or species level. Among these, the following taxa have been reported: subsp. *stellata* Danin & H.G. Baker, subsp. *papillatostellulata* Danin & H.G. Baker, subsp. *granulatostellulata* (Poellnitz) Danin and subsp. *nitida* Danin & H.G. Baker (Danin, 1990). Detailed morphological and molecular studies (El-Bakatoushi & al., 2013)

suggest that morphological differences must not necessarily reflect the genetic variation in *P. oleracea* taxa, and phylogenetic relationships are positively correlated with patterns of genetic variation. The latter authors conclude that *P. oleracea* is a polymorphic species and is not divisible into microspecies.

CACTACEAE

Austrocylindropuntia subulata (Muehlenpf.) Backeb. [*Opuntia subulata* (Muehlenpf.) Engelm.]

Non-native: N

Distribution: Aw R Cn Cc Cs

Cereus hildmannianus K. Schum.

Non-native: C

Distribution: Cn Cc

Remarks: Reports of *C. jamacaru* DC. and *C. repandus* (L.) Mill. are erroneous (Aymerich & Sáez, 2019a).

Cleistocactus hyalacanthus (K. Schum.) Rol.-Goss.

Non-native: C

Distribution: Cc

Remarks: A single individual was found in Vendrell, Baix Penedès (Aymerich, 2017b).

Cleistocactus strausii (Heese) Backeb.

Non-native: C

Distribution: Cn

Remarks: A single individual was found in Gualba, Vallès Oriental (Aymerich, 2017b).

Cylindropuntia fulgida (Engelm.) F.M. Knuth

Non-native: C

Distribution: Cs

Remarks: Reported from Alcanar, Montsià (Gómez-Bellver & al., 2019a).

Cylindropuntia imbricata (Haw.) F.M. Knuth

Non-native: N

Distribution: Aw S Cn Cc

Remarks: First report from Cambrils, Baix Camp (Sanz & Sobrino, 2002); later found elsewhere.

Cylindropuntia leptocaulis (DC.) F.M. Knuth

Non-native: C

Distribution: Cc

Remarks: Sometimes cultivated for ornament; escaped in Hospitalet de l'Infant, Vendrell and Pira (Aymerich & Gustamante, 2015; Aymerich, 2016b; Gómez-Bellver & al., 2019c).

Cylindropuntia pallida (Rose) F.M. Knuth [*C. rosea* auct., non (DC.) Backeb.]

Non-native: I

Distribution: Ppc Ae Aw Cn Cc ?Cs

Remarks: See Aymerich (2015d) and Verloove & Guiggi (2019) for its distribution. Sometimes confused with *C. tunicata*.

Cylindropuntia prolifera (Engelm.) F.M. Knuth

Non-native: C

Distribution: Cc

Remarks: Reported from Riera d'Alforja, Baix Camp (Verloove & Guiggi, 2019).

Cylindropuntia spinosior (Engelm.) F.M. Knuth

Non-native: C

Distribution: Ppc Ae Aw S Cc

Remarks: Known from several areas, mainly inland (Sanz & al., 2004a,b; Aymerich, 2015d, 2019).

Cylindropuntia tunicata (Lehm.) F.M. Knuth

Non-native: C

Distribution: Cc

Remarks: Reported from L'Ampolla, Baix Ebre (Verloove & Guiggi, 2019). It is easily confused with *C. pallida*.

Echinopsis eyriesii (Turpin) Pfeiff. & Otto

Non-native: C

Distribution: Aw

Remarks: A single individual has been observed in Castellbell, Bages (Aymerich, 2015d).

Echinopsis oxygona (Link) Pfeiff. & Otto

Non-native: C

Distribution: Cc

Remarks: Reported from Pira, Conca de Barberà (Gómez-Bellver & al., 2019c).

Mammillaria elongata DC.

Non-native: C

Distribution: Cc

Remarks: Reported from Pira, Conca de Barberà (Gómez-Bellver & al., 2019c).

Myrtillocactus geometrizans (Pfeiff.) Console

Non-native: C

Distribution: Cs

Remarks: Reported from Roquetes, Baix Ebre (Gómez-Bellver & al., 2020).

Opuntia aurantiaca Lindl.*Non-native:* N*Distribution:* R Cn Cc Cs

Remarks: It was observed in Collserola mountain in 2011, but the record was not published and no data about the specific site was provided. A naturalised population was reported from Caldes de Montbui (Guàrdia Valle, 2016). Subsequently this species has been found in other coastal areas (Verloove & Guiggi, 2019; Guardiola & Petit, 2020).

Opuntia chlorotica Engelm. & J.M. Bigelow*Non-native:* C*Distribution:* Cc

Remarks: Reported from Collbató, Baix Llobregat (Gómez-Bellver & al., 2019c).

Opuntia dejecta Salm-Dyck [*Nopalea dejecta* (Salm-Dyck) Salm-Dyck]*Non-native:* C*Distribution:* Cc

Remarks: Reported from Ametlla de Mar, Baix Ebre (Verloove & Guiggi, 2019).

Opuntia elata Salm-Dyck*Non-native:* N*Distribution:* Aw R Cn Cc

Remarks: First report from Artés, Bages (Sáez & al., 2015b); later found elsewhere (López-Pujol & al., 2016; Gómez-Bellver & al., 2016; Verloove & Guiggi, 2019).

Opuntia elatior Mill.*Non-native:* C*Distribution:* Cn Cc

Remarks: Reported from Barcelona metropolitan area (Montjuïc and Esplugues de Llobregat) and Calafell, Baix Penedès (Gómez-Bellver & al., 2019a; Verloove & Guiggi, 2019).

Opuntia engelmannii Salm-Dyck subsp. *engelmannii**Non-native:* N*Distribution:* Aw Cc

Remarks: See Aymerich (2019) and Verloove & Guiggi (2019) for its distribution.

Opuntia engelmannii subsp. *lindheimeri* (Engelm.) U. Guzmán & Mandujano*Non-native:* N*Distribution:* Ae Aw S R Cn Cc Cs

Remarks: Most populations are referable to var. *linguiformis* (Griffiths) B.D. Parfitt & Pinkava, which have stems segments becoming very elongate.

Opuntia ficus-indica (L.) Mill. [*O. maxima* Mill.; *O. ficus-barbarica* A. Berger]

Non-native: I

Distribution: Ppc Ae Aw S R Cn Cc Cs

Remarks: Forms with relatively long white spines, that would be attributable to that *O. megacantha* Salm-Dyck, can be found in Cn. Some reports of *O. paraguayensis* K. Schum. from Barcelona and its surroundings are probably due to confusion with *O. ficus-indica*.

Opuntia leoglossa Font & M. Köhler

Non-native: N

Distribution: Aw R Cn Cc

Remarks: This species has been wrongly assigned to *Salmonopuntia schickendantzii* (F.A.C. Weber) Font & M. Köhler [*Opuntia schickendantzii* F.A.C. Weber] (Köhler & al., 2021; Köhler & Font, 2021). *Opuntia leoglossa* has been detected in many Catalan locations (Aymerich, 2015d; 2016b, 2016c; Gómez-Bellver & al., 2016; Verloove & Guiggi, 2019).

Opuntia leucotricha DC.

Non-native: C

Distribution: Aw R Cn Cc Cs

Remarks: Known from several locations, mainly in the southern coastal areas (Sáez & al., 2015b; Aymerich, 2015d; 2016b, 2017b; Gómez-Bellver & al., 2019a; Verloove & Guiggi, 2019). Reports of *O. huajuapensis* Bravo (Sanz & al., 2004; Pyke, 2008) belong to *O. leucotricha*.

Opuntia mesacantha Raf. subsp. *mesacantha* [*O. vulgaris* auct., non Mill.; *O. humifusa* auct., non (Raf.) Raf.]

Non-native: I

Distribution: Pc Ppc Ppe Ae Aw R Cn Cc

Remarks: See Gómez-Bellver & Sáez (2017) for taxonomy and distribution. It is invasive only in middle Ter basin.

Opuntia microdasys (Lehm.) Pfeiff.

Non-native: N

Distribution: Aw S Cn Cc Cs

Remarks: In the studied area there are specimens with golden glochidia (wild morphotype), white glochidia (cultivar *albispina*) and red-brown glochidia (a cultivar which is sometimes confused with *Opuntia rufida* Engelm.).

Opuntia monacantha Haw.

Non-native: N

Distribution: Aw R Cn Cc Cs

Opuntia phaeacantha Engelm.

Non-native: I

Distribution: Aw S Cc Cn

Remarks: Invasive in Riera d'Alforja, Baix Camp (Verloove & Guiggi, 2019); naturalised elsewhere. *Opuntia phaeacantha* is very variable and sometimes considered a «catch-all taxon» that may include several species. The assignment of some forms to *O. phaeacantha* or *O. engelmannii* / *lindheimeri* is controversial, even in their American natural range.

Opuntia puberula Pfeiff.

Non-native: N

Distribution: R Cn Cc

Remarks: Reported from Ametlla de Mar (Baix Ebre), Piera (Anoia) and Cadaqués (Alt Empordà) (Aymerich & Gustamante, 2016, Aymerich, 2016c, 2017b). The identity of these plants is uncertain: they resemble «garden *O. puberula*» (and also like Australian naturalised ones) but they seem clearly different to Mexican native populations.

Opuntia robusta J.C. Wendl

Non-native: C

Distribution: R Cn Cc

Remarks: First reports from Blanes (Guillot & van der Meer, 2007) and Ametlla de Mar (Sáez & al., 2015b); later found elsewhere.

Opuntia scheeri F.A.C. Weber

Non-native: N

Distribution: Pc Aw Cc

Remarks: It is known in several inland and mid-altitude locations (Aymerich, 2016a, 2017b, 2019).

Opuntia stricta (Haw.) Haw.

Non-native: I

Distribution: Aw S R Cn Cc Cs

Remarks: Within this species we have included the strongly spiny plants that some authors recognised as *O. dillenii* (Ker Gawl.) Haw., and also plants with small, narrow and spiny cladodia that sometimes were called *O. ammophila* or *O. tuna*. These latter forms are known from the southern coastal areas. The more typical forms (prostrate and non-spiny) are mainly found in northern coastal areas.

Opuntia tomentosa Salm-Dyck

Non-native: N

Distribution: Cn

Remarks: Reported from Blanes, Selva (Aymerich, 2016d); also found in Sant Feliu de Codines, Vallès Oriental (L. Sáez, unpubl. data).

Opuntia tortispina Engelm. & J.M. Bigelow*Non-native:* N*Distribution:* Aw*Remarks:* Only known from Castellnou de Bages, where firstly was confused with an *O. phaeacantha* form (Aymerich, 2019). The identity of these plants is controversial.*Opuntia ficus-indica* × *O. tomentosa**Non-native:* N*Distribution:* Cn*Remarks:* Intermediate specimens between *O. ficus-indica* and *O. tomentosa*, presumably of hybrid origin, have been found in Sant Feliu de Codines, Vallès Oriental (L. Sáez, unpubl. data).*Salmonopuntia salmiana* (Pfeiff.) P.V. Heath [*Opuntia salmiana* Pfeiff.; *Salmiopuntia salmiana* (Pfeiff.) Guiggi]*Non-native:* N*Distribution:* Cc*Remarks:* Known from Riera de Riudecanyes where it has an incipient invasive behaviour (Aymerich, 2018a).*Selenicereus grandiflorus* (L.) Britton & Rose*Non-native:* C*Distribution:* Cc*Remarks:* Reported from Sant Climent de Llobregat, Baix Llobregat (Gómez-Bellver & al., 2016) and Vendrell, Baix Penedès (Aymerich, 2017b).*Selenicereus undatus* (Haw.) D.R. Hunt [*Hylocereus undatus* (Haw.) Britton & Rose]*Non-native:* C*Distribution:* Cn Cc*Remarks:* Three locations are currently known: two in Hospitalet de l'Infant-Ametlla de Mar area (Aymerich & Gustamante, 2015, Aymerich, 2020a) and one in Garraf coast (Gómez-Bellver & al., 2019b).*Trichocereus macrogonus* (Salm-Dyck) Riccob. [*Echinopsis macrogona* (Salm-Dyck) H. Friedrich & G.D. Rowley; *E. pachanoi* (Britton & Rose) Friedrich & G.D. Rowley; *E. peruviana* (Britton & Rose) Friedrich & G.D. Rowley]*Non-native:* C*Distribution:* Cn Cc Cs*Remarks:* It is represented in our area by two varieties recognised by Albesiano & Kiesling (2012). See Aymerich & Sáez (2019a) and Senar & Cardero (2019, sub *E. pachanoi*) for its distribution.

Trichocereus schickendantzii (F.A.C. Weber) Britton & Rose [*Echinopsis schickendantzii* F.A.C. Weber]

Non-native: C

Distribution: Ppc Aw S

Remarks: First report from Castellar de la Ribera, Solsonès (Aymerich, 2015); later found elsewhere.

Trichocereus spachianus (Lem.) Riccob. [*Echinopsis spachiana* (Lem.) Friedrich & G.D. Rowley]

Non-native: C

Distribution: Aw Cn Cc Cs

Remarks: See Aymerich & Sáez (2019a) for its distribution.

Trichocereus taquibalensis Cárdenas

Non-native: C

Distribution: Cn

Remarks: Only known in Blanes, Selva (Aymerich & Sáez, 2019).

HYDRANGEACEAE

Philadelphus coronarius L.

Non-native: C

Distribution: Pe Ppc Ppe O

CORNACEAE

Cornus mas L.

Non-native: N

Distribution: Ae

Remarks: Only a single population is known, found in the middle basin of Llobregat river (Aymerich, 2013b).

Cornus sanguinea L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

BALSAMINACEAE

Impatiens balfourii Hook. f.

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae S O R Cn Cc Cs

Impatiens balsamina L.*Non-native:* C*Distribution:* +Aw R Cn*Remarks:* Only three reports are known as individuals escaped from gardens (Casasayas, 1989); the reference which corresponds to Aw goes back to the 19th century.*Impatiens glandulifera* Royle*Non-native:* I*Distribution:* Pa Pe Ppe Ae*Remarks:* Recently this species has colonised the upper and middle Ter river valley (Rifa, 2015; Aymerich, 2016) and the upper Segre (Aymerich, 2021). Also known very locally in lower Aran valley (Clavell & Izuzquiza, 2015; Aymerich, 2019) where a future expansion is expected.*Impatiens noli-tangere* L.*Distribution:* Pa Pc*IUCN category:* VU*Remarks:* Mainly found in lower Aran valley, where the populations are connected with those found along the northern slope of the Pyrenees. A single population, apparently isolated, is known for Pc (Ninot & al., 2010).*Impatiens parviflora* DC.*Non-native:* C*Distribution:* Pc*Remarks:* Recently found in Valira river, Anserall, Alt Urgell (Jordi Dalmau, pers. comm. 15 Sept 2021); probably in naturalisation process.**EBENACEAE***Diospyros kaki* L.*Non-native:* C*Distribution:* Cs*Remarks:* Cultivated in orchards, sometimes escaped.*Diospyros lotus* L.*Non-native:* N*Distribution:* Ppe Ae Cn Cc Cs*Remarks:* Some groups of non-breeding individuals are propagated vegetatively in streams in Cc. These specimens probably correspond to buds of male *D. lotus* formerly used as rootstocks for *D. kaki*.*Diospyros virginiana* L.*Non-native:* C*Distribution:* Cn Cs

PRIMULACEAE

Androsace argentea (C.F.Gaertn.) Lapeyr. [*A. vandellii* auct., non Chiov.]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: For taxonomy, see Dentant & al. (2018).

Androsace ciliata DC.

Distribution: Pa Pc

IUCN category: LC

Androsace elongata L. subsp. ***breistrofferi*** (Charpin & Greut.) Molero & J.M. Monts.

Distribution: Pc Pe Ppe Aw Cc

IUCN category: LC

Androsace halleri L. subsp. ***nuria*** Schönsw. & Schneew. [*A. halleri* auct., non L.]

Distribution: Subendemic. Pc Pe

IUCN category: LC

Remarks: Endemic to eastern Pyrenees (Schönswetter & al., 2015). Its taxonomic recognition was already anticipated by Dixon & Schneeweiss (2007).

Androsace laggeri Huet [*A. carnea* L. subsp. *laggeri* (Huet) Nyman]

Distribution: Pa Pc ?Pe

IUCN category: LC

Remarks: Its presence in Pe (Vigo, 1983) is uncertain. According to Galicia & al. (2002) the herbarium specimens collected in Pe are referable to *A. halleri* [subsp. *nuria*].

Androsace maxima L.

Distribution: Pc Pe Ppc Ppe Ae Aw S Cc Cs

IUCN category: LC

Androsace pyrenaica Lam.

Distribution: Pc

IUCN category: EN

Remarks: Recently found in Alta Ribagorça (A. Petit, pers. comm. 11 Nov 2021). It has been provisionally assigned to EN category, but detailed information is lacking for a reliable evaluation.

Androsace villosa L. subsp. ***villosa***

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Androsace vitaliana (L.) Lapeyr. subsp. ***vitaliana*** [*Vitaliana primuliflora* Bertol. subsp. *canescens* O. Schwarz]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: Only this subspecies of *A. vitaliana* occurs in the Pyrenees (Dixon & al., 2016).

Coris monspeliensis subsp. ***fontqueri*** Masclans

Distribution: S Cc Cs

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *C. monspeliensis* are not clearly defined at present. Subspecies *fontqueri* is apparently widely distributed in southern dry areas.

Coris monspeliensis L. subsp. ***monspeliensis***

Distribution: Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Cyclamen bederifolium Aiton

Non-native: N

Distribution: Pa +Cn

Remarks: Known from Bausen, lower Aran valley (Aymerich & Sáez, 2015); formerly reported from Calella de Palafrugell (Bolòs & Vigo, 1996).

Cyclamen persicum Mill.

Non-native: C

Distribution: ?O Cn

Remarks: Observed in an urban habitat of Sarrià, Barcelona (J.I. Tejedor in biodiversidadvirtual.org) and in an anthropised pinewood in Tossa de Mar (M. Benavides in biodiversidadvirtual.org, 2019-2020). Oliver (2019) listed this species for Garrotxa.

Lysimachia arvensis (L.) U. Manns & Anderb. [*Anagallis arvensis* L.]

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Reports of *L. arvensis* in a broad sense usually do not distinguish between *L. arvensis* and *L. foemina*.

Lysimachia collina (Schousb.) F.J. Jiménez-López [*Anagallis collina* Schousb.; *A. monelli* subsp. *collina* (Schousb.) H. Lindb.]

Distribution: Cc Cs

IUCN category: LC

Remarks: Red-flowered plants of *L. monelli* (L.) U. Manns & Anderb. [*Anagallis monelli* L.] should be called *L. collina*.

Lysimachia ephemerum* L.Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Lysimachia foemina* (Mill.) U. Manns & Anderb. [*Anagallis foemina* Mill.; *A. arvensis* subsp. *foemina* (Mill.) Schinz & Thell.]***Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Reports of *L. arvensis* in a broad sense usually do not distinguish between *L. arvensis* and *L. foemina*.***Lysimachia linum-stellatum* L. [*Asterolinon linum-stellatum* (L.) Duby]***Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Lysimachia loeflingii* F.J. Jiménez-López & M. Talavera [*Anagallis latifolia* L.; *A. arvensis* subsp. *latifolia* (L.) Arcang.]***Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* *Lysimachia loeflingii* is a new name for blue-flowered plants of *L. arvensis*.***Lysimachia minima* (L.) U. Manns & Anderb. [*Anagallis minima* (L.) E.H.L. Krause; *Centunculus minimus* L.]***Distribution:* Pa Pe R Cn Cc*IUCN category:* LC***Lysimachia nemorum* L.***Distribution:* Pa Pc Pe Ppe O*IUCN category:* LC***Lysimachia talaverae* L. Sáez & Aymerich [*L. arvensis* subsp. *parviflora* (Hoffmanns. & Link) Peruzzi; *Anagallis arvensis* subsp. *parviflora* (Hoffmanns. & Link) Arcang.]***Distribution:* R*IUCN category:* DD*Remarks:* Its distribution in our area is probably more widespread than currently documented (see Aymerich & Sáez, 2015).***Lysimachia tenella* L. [*Anagallis tenella* (L.) L.]***Distribution:* Pa Pc Pe Ppe Ae Aw R Cn Cc Cs*IUCN category:* LC***Lysimachia vulgaris* L.***Distribution:* Pc Pe Ppc S O R Cn Cc Cs*IUCN category:* LC

Primula acaulis (L.) L. subsp. *acaulis**Distribution*: ?Pc Ppe Ae Aw Cn Cs*IUCN category*: LC***Primula elatior*** (L.) L.*Distribution*: Pa Pc Pe*IUCN category*: LC*Remarks*: In Pc and Pe it is restricted to small areas of Àneu valley and Cerdanya plain.***Primula farinosa*** L.*Distribution*: Pa Pc*IUCN category*: LC***Primula hirsuta*** All.*Distribution*: Pc*IUCN category*: VU*Remarks*: Only known from Puigpedrós massif (Pérez-Haase & al., 2009).***Primula integrifolia*** L.*Distribution*: Pa Pc Pe Ppe*IUCN category*: LC***Primula intricata*** Gren. & Godr. [*P. elatior* subsp. *intricata* (Gren. & Godr.) Widmer]*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC*Remarks*: According to Kress (2016) it is represented in our area by subsp. *intricata*, endemic to eastern and central Pyrenees. *Primula intricata* subsp. *impigrorum* Kress can also reach the westernmost Catalan Pyrenees. The morphological differences between these subspecies seem subtle, so further studies are necessary.***Primula latifolia*** Lapeyr. subsp. *latifolia**Distribution*: Subendemic. Pe*IUCN category*: LC*Remarks*: Reports for Pc (Puigpedrós massif) are due to confusion with *P. hirsuta*.***Primula subpyrenaica*** Aymerich, L. Sáez & López-Alvarado*Distribution*: Endemic. Ppe*IUCN category*: NT*Remarks*: This species, endemic to Picancel mountain, is related to *P. auricula* L. and *P. lutea* Vill. (Aymerich & al., 2014b). Results obtained in a phylogenomic study (Boucher & al., 2016) supported current species delimitations in the *Auricula* clade by confirming that *P. auricula*, *P. lutea*, and *P. subpyrenaica* all deserve species rank.

Primula veris L. [incl. *P. veris* subsp. *columnnae* (Ten.) Maire & Petitmengin]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: The available information about subspecific taxa is unclear. It was considered that most populations are referable to subsp. *columnnae*, whereas subsp. *veris* (or subsp. *canescens*) was occasionally found in northern humid areas (Pa, Pc, Cn), often in locations where subsp. *columnnae* also occurs. The attribution of many populations to a particular subspecies is difficult due to i) the presence of intermediate characters between subspecies and ii) disagreements between several authors about the characters that are considered typical of each subspecies.

Primula xaranensis Cadevall [*P. intricata* × *P. veris*]

Distribution: Pa

Remarks: Old reports from Artiga de Lin are probably referable to hybrids between *P. intricata* and *P. veris* (in a broad sense) since both taxa are found in this location.

Primula x digenea A. Kerner [*P. xternovania* A. Kerner *P. acaulis* subsp. *acaulis* × *P. veris*]

Distribution: Ppe Ae Cs

Samolus valerandi L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Soldanella alpina L. subsp. *alpina*

Distribution: Pa Pc Pe Ppe

IUCN category: LC

ERICACEAE

Arbutus unedo L.

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Arctostaphylos uva-ursi (L.) Spreng.

Distribution: Pa Pc Pe Ppc Ppe Aw S Cn Cc Cs

IUCN category: LC

Arctous alpina (L.) Nied. [*Arctostaphylos alpina* (L.) Spreng.]

Distribution: Pa Pc

IUCN category: LC

Calluna vulgaris (L.) Hull

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc

IUCN category: LC

Empetrum nigrum L. subsp. ***hermaphroditum*** (Hagerup) Böcher

Distribution: Pa Pc Pe

IUCN category: LC

Erica arborea L.

Distribution: Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Erica cinerea L.

Distribution: Cn

IUCN category: NT

Erica multiflora L.

Distribution: Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Erica scoparia L. subsp. ***scoparia***

Distribution: Pe Ppc Ppe Ae ?Aw O R Cn

IUCN category: LC

Erica tetralix L.

Distribution: Pa Pc

IUCN category: NT

Erica vagans L.

Distribution: Pc Cn

IUCN category: VU

Remarks: Restricted to two small areas in Vall Fosca (Pc) and Bertí-Gallifa mountains (Cn); see also Sáez & al. (2010).

Hypopitys hypophegea (Wallr.) G. Don [*Monotropa hypophegea* Wallr.; *M. hypopitys* var. *glabra* Roth]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Hypopitys monotropa Crantz [*Monotropa hypopitys* L.]

Distribution: Pa Pc Pe ?Ppc Ppe Cs

IUCN category: LC

Kalmia procumbens (L.) Galasso, Bansi & F. Conti [*Loiseleuria procumbens* (L.) Desv.]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: Its presence in Ppe (see Font & al., 2001) is probably erroneous.

Moneses uniflora (L.) A. Gray [*Pyrola uniflora* L.]

Distribution: Pa Pc Pe Ppc Ppe Cs

IUCN category: LC

Orthilia secunda (L.) House [*Pyrola secunda* L.]

Distribution: Pa Pc Pe Ppc Ppe Cs

IUCN category: LC

Phyllodoce caerulea (L.) Bab.

Distribution: Pa

IUCN category: VU

Remarks: Only a single population is known in Montludde mountain (Villar & Ferrández, 1995; Sáez & al., 2010).

Pyrola chlorantha Sw.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw Cc Cs

IUCN category: LC

Pyrola minor L.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Rhododendron ferrugineum L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: It was reported from Cs (Terra Alta), Aw (Anoia) and Cn (Maresme) by Lloret & al. (2009); these reports are erroneous.

Vaccinium myrtillus L.

Distribution: Pa Pc Pe Ppc Ppe Cn Cc

IUCN category: LC

Remarks: An unlocated report for Bages county (Aw) due to Lloret & al. (2009) is erroneous.

Vaccinium uliginosum L. subsp. *gaultherioides* (Bigelow) S.B. Young [*V. uliginosum* subsp. *microphyllum* (Lange) Tolm.]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Vaccinium vitis-idaea L. subsp. *vitis-idaea*

Distribution: ?Pa Pc ?Pe

IUCN category: VU

Remarks: Known from a single location in Àneu valley, Pallars Sobirà (Sáez & al., 2010). A report for Montardo (Pa) due to Llensa (1953) requires confirmation. An old report for Setcases (Pe) (Morer, 1879) is likely, since the species exists in a nearby area in France (Pi valley).

GARRYACEAE

Aucuba japonica Thunb.

Non-native: C

Distribution: O

Remarks: This garden plant was reported from Garrotxa (Oliver, 2009).

RUBIACEAE

Asperula aristata L. fil. subsp. *scabra* (Lange) Nyman [*A. cynanchica* subsp. *aristata* (L. fil.) Bég.]

Distribution: Pc Ppe Aw S R Cn Cc Cs

IUCN category: LC

Asperula arvensis L.

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Asperula cynanchica L. subsp. *cynanchica* [incl. *A. cynanchica* subsp. *brachysiphon* (Lange) O. Bolòs & Vigo]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Asperula cynanchica subsp. *pyrenaica* (L.) Nyman

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Asperula hirta Ramond

Distribution: Pa Pc

IUCN category: LC

Remarks: An unlocated report for Girona province (Ortega & Devesa, 2007a) is probably erroneous.

Asperula laevigata L.

Distribution: Cn

IUCN category: LC

Callipeltis cucullaris (L.) Steven

Distribution: S

IUCN category: CR

Remarks: Only two collection sites, Vilanoveta and Almatret (Segrià), are known in our area (Sáez & al., 2010; Batriu & Mercadé, 2020).

Crucianella angustifolia L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* There is only one old reference for O (Oliver & Font, 2009).***Crucianella latifolia*** L.*Distribution:* Cc Cs*IUCN category:* LC***Crucianella maritima*** L.*Distribution:* R Cn Cc Cs*IUCN category:* LC***Crucianella patula*** L.*Distribution:* Aw S Cc Cs*IUCN category:* LC***Cruciata glabra*** (L.) Ehrend.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC*Remarks:* Represented in the studied area by two subspecies, namely subsp. *glabra* and subsp. *hirticaulis* (Beck) Natali & Jeanm. However, they are usually connected by intermediates (Devesa, 2007a).***Cruciata laevipes*** Opiz*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn*IUCN category:* LC***Cruciata pedemontana*** (Bellardi) Ehrend.*Distribution:* Pc*IUCN category:* NT*Remarks:* So far it is known only from Àneu valley (Pérez-Haase & Mercadé, 2012). Its presence in other areas of Pc and even Pe is likely, since this species has been found recently also in two locations of eastern Pyrenees in French territory (Molina & Andrieu, 2016; Lewin, 2018).***Galium album*** Mill. [*G. mollugo* subsp. *erectum* Syme]*Distribution:* Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Galium aparine*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Galium brockmannii Briq. [*G. pusillum* subsp. *brockmannii* (Briq.) O. Bolòs]

Distribution: Subendemic. Ppc R Cc Cs

IUCN category: LC

Remarks: Its occurrence in R is based solely on specimens collected in Montgrí massif in 19th century (Sáez & al., 2002).

Galium cometerhizon Lapeyr.

Distribution: Pa Pc Pe

IUCN category: LC

Galium corrudifolium Vill. [*G. lucidum* subsp. *corrudifolium* (Vill.) Bonnier]

Distribution: ?Ppe S

IUCN category: DD

Remarks: Also reported from an Aragonese area close to the boundary of Ppc. Ortega & Devesa (2007b) listed *G. corrudifolium* for Tarragona province, in all probability based on data provided by Molero (1976) from Cc, which are probably erroneous. Moreover, *G. corrudifolium* was regarded as doubtful by Bolòs & Vigo (1996), and it was not listed by Bolòs & al. (2005).

Galium debile Desv. [*G. palustre* subsp. *debile* (Desv.) Behrer]

Distribution: O R Cn

IUCN category: LC

Galium divaricatum Lam. [*G. parisiense* subsp. *divaricatum* (Lam.) Rouy & E.G. Camus]

Distribution: Pe Aw O R Cn Cc

IUCN category: LC

Galium elongatum C. Presl [*G. palustre* subsp. *elongatum* (C. Presl) Lange]

Distribution: Ae S R Cn Cc Cs

IUCN category: LC

Galium estebanii Sennen [*G. pumilum* Murray subsp. *pinetorum* (Ehrend.) Vigo]

Distribution: Pa Pc Pe Ppc Ppe O Cn Cc Cs

IUCN category: LC

Galium frutescens Cav. [*G. lucidum* subsp. *frutescens* (Cav.) O. Bolòs & Vigo]

Distribution: Pc Ppc Aw S R Cn Cc Cs

IUCN category: LC

Galium lucidum All. subsp. *lucidum*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Galium marchandii Roem. & Schult. [*G. pumilum* Murray subsp. *marchandii* (Roem. & Schult.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Galium maritimum L.

Distribution: Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Galium minutulum Jord.

Distribution: R ?Cn

IUCN category: DD

Remarks: An old report for Barcelona area (Cn) has not been confirmed (Sáez & al., 2010).

Galium mollugo L.

Distribution: Pa Pc Pe Ppe O

IUCN category: LC

Remarks: Reports of this taxon outside the Pyrenees are probably due to confusion with *G. lucidum* (Bolòs & Vigo, 1996).

Galium murale (L.) All.

Distribution: Aw S Cn Cc Cs

IUCN category: LC

Galium odoratum (L.) Scop.

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Galium palustre L.

Distribution: Pa Pc Pe Ppc Ppe S O R Cn Cs

IUCN category: LC

Galium papillosum Lapeyr. subsp. *papillosum* [*G. pumilum* Murray subsp. *papillosum* (Lapeyr.) Masclans & Batalla]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Galium parisiense L.

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Galium pyrenaicum Gouan

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Galium rotundifolium L. [*G. rotundifolium* var. *batallae* O. Bolòs & Vigo]

Distribution: Pa Pc Cc

IUCN category: LC

Galium saxatile L.

Distribution: Pa

IUCN category: LC

Galium scabrum L.

Distribution: Cn

IUCN category: NT

Galium spurium L. [*G. aparine* subsp. *spurium* (L.) Hartm.]

Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Galium tricornutum Dandy

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Galium uliginosum L.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Galium verrucosum Huds. subsp. *verrucosum*

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Galium verticillatum Lam.

Distribution: Ppc Cc Cs

IUCN category: LC

Galium verum L. subsp. *verum*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Galium ×barcinonense Sennen [*G. lucidum* subsp. *lucidum* × *G. maritimum*]

Distribution: Cn

Galium ×viciosorum Sennen & Pau [*G. maritimum* × *G. verum* subsp. *verum*]

Distribution: Cn

***Rubia peregrina* L.**

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Two subspecies were traditionally recognised: subsp. *peregrina*, widely distributed in the studied area, and subsp. *longifolia* (Poir.) O. Bolòs [*R. longifolia* Poir.], restricted to warm coastal areas. However, *R. peregrina* subsp. *longifolia* was included in the synonymy of typical *R. peregrina* (Rodríguez Riaño & Devesa, 2007).

***Rubia tinctorum* L.**

Non-native: I

Distribution: Pc Pe Ppe Aw S R Cn Cc Cs

Remarks: Formerly cultivated and locally naturalised. Most of the reports are old and the species is considered to be declining.

***Sherardia arvensis* L.**

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

***Valantia hispida* L.**

Distribution: R Cn Cc Cs

IUCN category: LC

***Valantia muralis* L.**

Distribution: S R Cn Cc Cs

IUCN category: LC

GENTIANACEAE

Blackstonia acuminata (W.D.J. Koch & Ziz) Domin subsp. ***acuminata*** [*B. perfoliata* subsp. *serotina* (Rchb.) Vollm.]

Distribution: Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *B. acuminata* are not clearly defined at present; therefore, the region assignment here provided is provisional. According to Díaz Lifante (2011) this subspecies is the most widely distributed in Catalonia.

Blackstonia acuminata subsp. ***aestiva*** (K. Malý) Zeltner [*B. perfoliata* subsp. *serotina* (Rchb.) Vollm.]

Distribution: Ppe Ae R Cn

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *B. acuminata* are not clearly defined at present; therefore, the region assignment here provided is provisional. Díaz Lifante (2011) listed *B. acuminata* subsp. *aestiva* for Barcelona and Girona provinces.

Blackstonia imperfoliata (L. fil.) Samp. [*B. perfoliata* subsp. *imperfoliata* (L. fil.) Franco & Rocha Afonso]

Distribution: R Cc Cs

IUCN category: LC

Blackstonia perfoliata subsp. *intermedia* (Ten.) Zeltner

Distribution: Ppe S O R Cn Cc

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *B. perfoliata* are not clearly defined at present; therefore, the region assignment here provided is provisional. Díaz Lifante (2011) listed *B. perfoliata* subsp. *intermedia* for Barcelona and Girona provinces.

Blackstonia perfoliata (L.) Huds. subsp. *perfoliata*

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *B. perfoliata* are not clearly defined at present; therefore, the region assignment here provided is provisional. According to Díaz Lifante (2011) this subspecies is the most widely distributed in Catalonia.

Centaurium erythraea Rafn subsp. *erythraea*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Centaurium erythraea subsp. *rhodense* (Boiss. & Reut.) Melderis

Distribution: ?Cn ?Cc

IUCN category: DD

Remarks: Its distribution is very poorly known. Díaz Lifante (2011) reported this taxon from coastal areas in Barcelona and Tarragona provinces.

Centaurium grandiflorum (Pers.) Ronniger subsp. *grandiflorum* [*C. erythraea* subsp. *majus* sensu O. Bolòs & Vigo, non (Hoffmans & Link) M. Laínz]

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Centaurium maritimum (L.) Janch.

Distribution: O R Cn Cc

IUCN category: LC

Centaurium pulchellum (Sw.) Druce

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Centaurium quadrifolium (L.) G. López & C.E. Jarvis subsp. ***barrelieri*** (Dufour) G. López [*C. barrelieri* (Dufour) Font Quer & Rothm.]

Distribution: Aw S Cc Cs

IUCN category: LC

Remarks: Díaz Lifante (2011) also listed *C. quadrifolium* subsp. *linariifolium* (Lam.) G. López for Barcelona and Tarragona provinces, and Royo (2006) also reported the presence of similar plants. The distribution in our area of plants referable to both subspecies seems to be similar and, apparently, there are no differences in regards to their ecology.

Centaurium quadrifolium subsp. ***parviflorum*** (Willk.) Pedrol [*C. favargeri* Zeltner]

Distribution: S

IUCN category: NT

Centaurium tenuiflorum (Hoffmans. & Link) Janch. [*C. pulchellum* subsp. *tenuiflorum* (Hoffmans. & Link) Maire]

Distribution: Ppc Ppe Aw S R Cn Cc Cs

IUCN category: LC

Cicendia filiformis (L.) Delarbre

Distribution: Cn

IUCN category: NT

Comastoma tenellum (Rottb.) Toyok. [*Gentiana tenella* Rottb.]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Exaculum pusillum (Lam.) Caruel

Distribution: R Cn

IUCN category: NT

Gentiana acaulis L.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Gentiana alpina Vill.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Gentiana angustifolia Vill. [*G. acaulis* subsp. *angustifolia* (Vill.) Nyman]

Distribution: Ppc

IUCN category: EN

Remarks: An alpine taxon known from a single Pyrenean location in Cabó valley, Boumort massif (Sáez & al., 2010; Renobales, 2011). The relationships between Alpine and Pyrenean-Cantabrian populations of *G. angustifolia* and *G. occidentalis* require further research.

Gentiana burseri Lapeyr. subsp. *burseri**Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Gentiana cruciata*** L.*Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Gentiana lutea*** L. subsp. *lutea**Distribution:* Pa Pc Pe Ppe O Cn*IUCN category:* LC***Gentiana montserratii*** Greuter [*G. lutea* subsp. *montserratii* (Greuter) Romo]*Distribution:* Subendemic. Pc Ppc Ppe*IUCN category:* LC***Gentiana nivalis*** L.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Gentiana occidentalis*** Jakow. [*G. angustifolia* subsp. *corbariensis* (Braun-Blanq.) Renob.]*Distribution:* Pa Pc*IUCN category:* LC*Remarks:* Restricted, in the studied area, to areas of Atlantic influence in the Pyrenees.***Gentiana pneumonanthe*** L.*Distribution:* Pc +Pe Ppe*IUCN category:* EN*Remarks:* Currently known in two small areas from Cerdanya (Pc) and Ripollès, Montgrony (Ppe).***Gentiana pyrenaica*** L.*Distribution:* Pc Pe Ppe*IUCN category:* LC***Gentiana verna*** L. subsp. *verna**Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC*Remarks:* Pyrenean reports of *G. schleicheri* (Vacc.) Kunz [*G. terglouensis* subsp. *schleicheri* (Vacc.) Tutin] are uncertain because the ascription of the Pyrenean plants to this alpine species is unclear. Moreover, molecular data suggest that *G. schleicheri* (in a broad sense) should be included in *G. verna* with infraspecific taxonomic rank or treated as forms with special morphology (Haemmerli, 2007).

Gentiana ×marcailhouana Rouy [*G. lutea* × *G. burseri*]

Remarks: Listed without precise location by Bolòs & Vigo (1996).

Gentianella campestris (L.) Börner subsp. ***campestris*** [*Gentiana campestris* L. subsp. *campestris*]

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Gentianopsis ciliata (L.) Ma subsp. ***ciliata*** [*Gentiana ciliata* L. subsp. *ciliata*]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc

IUCN category: LC

Schenkia spicata (L.) G. Mans. [*Centaureum spicatum* (L.) Janch.]

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Swertia perennis L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

APOCYNACEAE

Araujia sericifera Brot.

Non-native: N

Distribution: Aw S O R Cn Cc Cs

Asclepias curassavica L.

Non-native: C

Distribution: Cn Cc

Remarks: Reported from Barcelona (Bolòs & Vigo, 1996) and Santa Coloma de Cervelló, Baix Llobregat (Gómez-Bellver & al., 2019a).

Catharanthus roseus (L.) G. Don [*Vinca rosea* L.]

Non-native: C

Distribution: Cn Cs

Remarks: Probably it has become naturalised in urban areas from Cs (Royo, 2006).

Cynanchum acutum L. subsp. ***acutum***

Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Gomphocarpus fruticosus (L.) W.T. Aiton

Non-native: N

Distribution: Aw O R Cn Cc Cs

Nerium oleander L. subsp. ***oleander****Distribution:* Cc Cs*IUCN category:* LC*Remarks:* Widely cultivated for ornament in other areas.***Orbea variegata*** (L.) Haw. [*Stapelia variegata* L.]*Non-native:* C*Distribution:* Cc*Remarks:* Solitary individuals have been reported from three locations in Baix Camp and Baix Ebre (Aymerich & Gustamante, 2016; Verloove & al., 2019).***Periploca graeca*** L.*Non-native:* I*Distribution:* S*Remarks:* Restricted to Segre river in Lleida (Conesa & al., 2009).***Vinca difformis*** Pourr. subsp. ***difformis****Distribution:* [Pc] [Ppc] [Ppe] [Ae] [Aw] [S] [O] R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain.***Vinca major*** L. subsp. ***major****Distribution:* [Pc] [Ppc] [Ppe] [Ae] [Aw] [S] R Cn Cc [Cs]*IUCN category:* LC*Remarks:* Its native status is uncertain.***Vinca minor*** L.*Distribution:* Pa [Pc] Pe Ppc Ppe Ae O Cn [Cc]*IUCN category:* LC*Remarks:* Widely cultivated for ornament. Probably, many populations in areas where this species is regarded as native have originated through naturalisation of cultivated plants.***Vincetoxicum hirundinaria*** Medik. [*V. hirundinaria* subsp. *intermedium* (Loret & Barrandon) Markgraf.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Vincetoxicum nigrum*** (L.) Moench*Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

BORAGINACEAE

Aegonychon purpurocaeruleum (L.) J. Holub [*Lithospermum purpurocaeruleum* L.;
Buglossoides purpurocaeruleum (L.) I.M. Johnst.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Alkanna lutea A. DC.

Distribution: S R Cn Cc

IUCN category: DD

Alkanna tinctoria Tausch subsp. *tinctoria*

Distribution: Ppc Ae Aw S R Cn Cc Cs

IUCN category: DD

Anchusa arvensis (L.) M. Bieb. subsp. *arvensis* [*Lycopsis arvensis* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: DD

Remarks: Its native status is uncertain.

Anchusa arvensis subsp. *orientalis* (L.) Nordh. [*Lycopsis orientalis* L.]

Non-native: C

Distribution: Pe

Remarks: Its distribution is poorly known. This taxon was reported from Prats (Cerdanya plain) by Luque (1983); Valdés (2012a) listed it for Girona, Lleida and Tarragona provinces.

Anchusa azurea Mill. [*A. italica* Retz.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: DD

Remarks: Its native status is uncertain.

Anchusa undulata L. subsp. *undulata*

Distribution: Cn

IUCN category: DD

Remarks: Reported from a single location in Vallès Oriental (Bolós & Vigo, 1996), from where it has not been seen again. Reports from other regions are due to confusion with other species of the genus.

Asperugo procumbens L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Remarks: There is no consensus on its native status.

Borago officinalis L.

Distribution: [Pa] [Pc] [Pe] Ppc [Ppe] [Ae] Aw S [O] R Cn Cc Cs

IUCN category: LC

Buglossoides arvensis (L.) I.M. Johnst. subsp. *arvensis* [*Lithospermum arvense* L. subsp. *arvense*]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Buglossoides incrassata (Guss.) I.M. Johnst. subsp. *incrassata* [*Lithospermum arvense* subsp. *gasparrinii* (Guss.) O. Bolòs & Vigo; *Buglossoides arvensis* subsp. *gasparrinii* (Guss.) R. Fern.]

Distribution: Pc Ppe S Cs

IUCN category: NT

Remarks: So far this species is known only from few locations: Ports massif (Cs), Balaguer (S), Vall Fosca (Pc) and Coborriu, Bellver de Cerdanya (Ppe). Its distribution in the studied area is probably more widespread than currently documented.

Cerithe glabra Mill. subsp. *glabra* [*C. glabra* subsp. *pyrenaica* (Arv.-Touv.) Kérguelen]

Distribution: Pc

IUCN category: CR

Remarks: Known only from a single location in Àneu valley (Aymerich, 2008; Sáez & al., 2010).

Cerithe major L. subsp. *major* [*C. gymnandra* Gasp.; *C. major* subsp. *gymnandra* (Gasp.) P. Cout.]

Distribution: R

IUCN category: VU

Remarks: Restricted to few locations in Empordà littoral area.

Cynoglossum creticum Mill.

Distribution: Pe Ppc Ppe Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Remarks: Old reports from Pa are due to confusion with *C. officinale* (Bolòs & Vigo, 1996).

Cynoglossum cheirifolium L. subsp. *cheirifolium*

Distribution: Pc Ppc Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Cynoglossum dioscoridis Vill.

Distribution: Pc Pe Ppc Ppe Ae O R Cn ?Cc Cs

IUCN category: LC

Remarks: Reports from Cc (Tarragona and L'Espluga de Francolí) (Nogués, 1923; Cadevall, 1932) are doubtful.

Cynoglossum officinale L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn*IUCN category:* LC***Cynoglossum ×salesianorum*** Sennen [*C. cheirifolium* × *C. creticum*]*Distribution:* Cc***Echium arenarium*** Guss.*Distribution:* ?Cn Cc*IUCN category:* CR

Remarks: This species is known only from a beach in Hospitalet de l'Infant, Baix Camp (Gutiérrez & al., 2015); it was also reported from Barranc de la Barbiguera, close to the boundary of Cs (Royo, 2006). Valdés (2012d) listed this species for Girona and Barcelona provinces, where no verified reports are known.

Echium asperrimum L. [*E. italicum* subsp. *pyrenaicum* Rouy]*Distribution:* Aw S O R Cn Cc Cs*IUCN category:* LC***Echium candicans*** L. fil.*Non-native:* C*Distribution:* Cn

Remarks: Known from Tossa de Mar and Blanes, Selva (P. Aymerich & F. Verloove, unpubl. data). The identity of some observed “Macaronesian *Echium*” of garden origin is somewhat uncertain, but it is likely that all belong to *E. candicans*, by far the most cultivated.

Echium creticum L. subsp. *creticum**Distribution:* R Cn*IUCN category:* LC***Echium creticum*** subsp. *granatense* (Coincy) Valdés*Distribution:* Ae Cn Cc Cs*IUCN category:* LC

Remarks: Probably overlooked and more common than known.

Echium italicum L. subsp. *italicum**Distribution:* R*IUCN category:* LC***Echium plantagineum*** L.*Distribution:* R Cn Cc Cs*IUCN category:* LC

Echium parviflorum Moench [*E. calycinum* Viv.]

Distribution: R Cn Cc Cs

IUCN category: LC

Echium sabulicola Pomel subsp. *sabulicola*

Distribution: R [Cc]

IUCN category: DD

Remarks: Reported from Roses, Port de la Selva and Llançà (Gibbs, 1971). Its presence in Girona province was also confirmed by Valdés (2012d). The occurrence of *E. sabulicola* in Cc (Llobregat Delta) (González & al., 2016) could be due to a recent introduction.

Echium vulgare subsp. *pustulatum* (Sm.) Bonnier & Layens [*E. pustulatum* Sm.; *E. vulgare* var. *lacaitae* (Sennen) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Echium vulgare L. subsp. *vulgare*

Distribution: Pa Pc Pe Ppe O Cn

IUCN category: LC

Glandora oleifolia (Lapeyr.) D.C. Thomas [*Lithospermum oleifolium* Lapeyr.; *Lithodora oleifolia* (Lapeyr.) Griseb.]

Distribution: Endemic. Ppe

IUCN category: NT

Remarks: A narrow endemic restricted to Alta Garrotxa area.

Hackelia deflexa (Wahlenb.) Opiz [*Lappula deflexa* (Wahlenb.) Garcke]

Distribution: Pe Ppe

IUCN category: EN

Remarks: Restricted to a few locations, mainly in Tosa d'Alp massif (Sáez & al., 2010).

Lappula patula (Lehm.) Gürke

Distribution: S

IUCN category: CR

Remarks: Known only from a single location in Raimat, Segrià (Conesa & al., 2012; Pedrol & al., 2015).

Lappula squarrosa (Retz.) Dumort. subsp. *squarrosa*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lithodora fruticosa (L.) Griseb. [*Lithospermum fruticosum* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Lithospermum officinale L

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Myosotis alpestris F.W. Schmidt subsp. ***alpestris*** [*M. sylvatica* subsp. *alpestris* (F.W. Schmidt) Gams]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Myosotis alpestris subsp. ***pyrenaeorum*** (Blaise & Kerguélen) Valdés [*M. pyrenaica* auct., non Pourr.; *M. alpina* Lapeyr.]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Myosotis arvensis (L.) Hill. subsp. ***arvensis***

IUCN category: LC

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: *Myosotis ×catalaunica* Sennen was regarded as the hybrid between *M. arvensis* and *M. stricta*. However, its hybrid nature requires confirmation.

Myosotis decumbens Host subsp. ***teresiana*** (Sennen) Grau [*M. sylvatica* subsp. *teresiana* (Sennen) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn

IUCN category: LC

Myosotis discolor Pers. subsp. ***discolor*** [*M. versicolor* Sm.]

Distribution: Pe R Cn Cc Cs

IUCN category: LC

Remarks: See comments on *Myosotis discolor* subsp. *dubia*. Valdés (2012e) listed this taxon for Girona province, without precise location.

Myosotis discolor subsp. ***dubia*** (Arrond.) Blaise

Distribution: Pe R Cn ?Cc Cs

IUCN category: LC

Remarks: Listed for Barcelona, Girona and Tarragona provinces (Valdés, 2012e). Arrufat & al. (2008) reported this taxon from Ports massif (Cs). Its distribution is poorly known, since this taxon was not separated from typical *M. discolor* by Bolòs & Vigo (1996).

Myosotis hervei Sennen [*M. palustris* subsp. *tuxeniana* O. Bolòs & Vigo; *M. tuxeniana* (O. Bolòs & Vigo) O. Bolòs & Vigo; *M. scorpioides* subsp. *tuxeniana* (O. Bolòs & Vigo) O. Bolòs, Nuet & Panareda]

Distribution: Pa Pc Pe Ppe Ae O R Cn

IUCN category: LC

Remarks: Sáez & al. (2010) regarded this species as subendemic. However, according to distribution data provided by Valdés (2012e) this species cannot be regarded as subendemic.

Myosotis martini Sennen [*M. lamottiana* (Chass.) Grau; *M. scorpioides* subsp. *lamottiana* Chass.; *M. scorpioides* auct.]

Distribution: Pa Pc Pe

IUCN category: LC

Myosotis minutiflora Boiss. & Reut.

Distribution: Pe

IUCN category: CR

Remarks: An extremely rare species known from a single location in Tosa d'Alp massif (see Aymerich, 2017d).

Myosotis ramosissima subsp. ***gracillima*** (Loscos & J. Pardo) Rivas Mart. [*M. ramosissima* var. *gracillima* (Loscos & J. Pardo) O. Bolòs & Vigo; *M. collina* subsp. *gracillima* (Loscos & J. Pardo) Nyman]

Distribution: Cn Cc ?Cs

IUCN category: LC

Myosotis ramosissima Rochel subsp. ***ramosissima***

Distribution: Pa Pc Pe Ppc Ppe Ae S O R Cn Cc Cs

IUCN category: LC

Remarks: Intermediate forms between both subspecies of *M. ramosissima* were called *M. ramosissima* subsp. *ruscinonensis* (Rouy) O. Bolòs & Vigo (Valdés, 2012e). According to the latter author subsp. *ruscinonensis* is restricted to southern France.

Myosotis sicula Guss.

Distribution: R

IUCN category: DD

Remarks: Apparently restricted to scattered locations in Alt Empordà county, where it usually occurs on winter flooded pools over siliceous soil. Reports of this species from Olot (O) and Montseny massif and Montcada (Cn) are referable to *M. hervei* (Bolòs & Vigo, 1996, sub *M. scorpioides* subsp. *tuxeniana*).

Myosotis stricta Roem. & Schult.

Distribution: Pc Pe Ppc Ppe Cn Cc

IUCN category: LC

Remarks: *Myosotis xreyana* Sennen was regarded as the hybrid between *M. ramosissima* subsp. *gracillima* and *M. stricta*. However, its hybrid nature requires confirmation.

Neatostema apulum (L.) I.M. Johnst. [*Lithospermum apulum* (L.) Vahl]

Distribution: Pe Ppc Ppe Aw S O R Cn Cc Cs

IUCN category: LC

Nonea echioides (L.) Roem. & Schult. [*N. pulla* (L.) DC.; *N. ventricosa* (Sm.) Griseb.]

Distribution: Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Nonea lutea (Desr.) DC.

Non-native: C

Distribution: Cn

Remarks: Escaped in the surroundings of the Botanical garden of Barcelona (Bolòs & Vigo, 1996).

Nonea micrantha Boiss. & Reut.

Distribution: Aw S Cs

IUCN category: LC

Nonea vesicaria (L.) Rchb.

Distribution: S +Cc

IUCN category: CR

Remarks: Recently found in Castellserà, Urgell (Tejedor & Aymerich, 2019). It was formerly reported from a disturbed area in Begues (Bolòs, 1950).

Onosma bubanii Stroh [*O. elegans* Bubani, nom. illeg.; *O. tricerosperma* subsp. *alpicola* O. Bolòs & Vigo]

Distribution: Subendemic. Pe Ppc Ppe

IUCN category: LC

Remarks: Endemic to central and eastern Pyrenees. Valdés (2012b) suggested its presence in Andorra and France.

Onosma fastigiata (Braun-Blanq.) Lacaita subsp. *fastigiata* [*O. tricerosperma* subsp. *catalaunica* (Sennen) O. Bolòs & Vigo; *O. echioides* var. *catalaunica* Sennen]

Distribution: Ppe O R Cc

IUCN category: LC

Onosma fastigiata subsp. *pyrenaica* (Braun-Blanq.) Valdés [*O. echioides* subsp. *pyrenaica* Braun-Blanq.]

Distribution: Subendemic. Ppc Ppe

IUCN category: LC

Remarks: Endemic to central and eastern Pyrenees (Valdés, 2012b).

Pulmonaria affinis F.W. Schultz [*P. affinis* subsp. *alpestris* (Lamotte) P. Fourn.]

Distribution: Pa Pc Pe Ppe O

IUCN category: LC

Pulmonaria longifolia (Bastard) Boreau [*P. longifolia* subsp. *cevennensis* Bolliger; *P. angustifolia* auct. hisp., non L.; *P. azurea* auct., non Besser]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc

IUCN category: LC

Rochelia disperma (L. fil.) K. Koch subsp. ***disperma*** [*R. disperma* subsp. *retorta* sensu I.K. Ferguson, non (Pall.) Lipsky]

Distribution: S

IUCN category: CR

Remarks: For its detailed distribution see Sáez & al. (2010).

Symphytum officinale L.

Non-native: N

Distribution: Pa ?Pc ?Pe Ppe ?Ae ?O ?R ?Cn

Remarks: Its non-native status is uncertain. It could be native species in Pa. Recent surveys have proven that most populations traditionally attributed to *S. officinale* correspond to *S. uplandicum* Nyman (Aymerich, 2019). A single population of *S. officinale* is confirmed, in a cultivated land close to Seu d'Urgell (Ppe).

Symphytum tuberosum L. subsp. ***tuberosum***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Symphytum uplandicum Nyman

Non-native: I

Distribution: Pc Pe Ppe Ae Cn

Remarks: See Aymerich (2019) and comments under *S. officinale*. Widespread and invasive in upper Segre basin; whilst it is rare and not clearly invasive elsewhere. The hybrid origin of *S. uplandicum* between *S. officinale* and *S. asperum* Lepech is hypothesized.

HYDROPHYLLACEAE

Nemophila maculata Lindl.

Non-native: C

Distribution: Cn

Remarks: Reported from Cabrils, Maresme (Guardiola & Petit, 2020).

Nemophila menziesii Hook. & Arn. [*N. insignis* Benth. var. *menziesii* (Hook. & Arn.) A. DC.]

Non-native: C

Distribution: Pa Cn

Remarks: Reported from Port de la Bonaigua, Aran (Aymerich & Sáez, 2015) and Cabrils, Maresme (Guardiola & Petit, 2020).

Phacelia parryi Torr.

Non-native: C

Distribution: Cn

Remarks: Reported from Cabrils, Maresme (Guardiola & Petit, 2020).

Phacelia tanacetifolia Benth.

Non-native: C

Distribution: Aw O R Cn Cc Cs

Wigandia urens (Ruiz & Pav.) Kunth [*W. caracasana* Kunth]

Non-native: C

Remarks: A garden escape rarely observed in Barcelona metropolitan area (Casasayas, 1989).

HELIOTROPIACEAE

Heliotropium amplexicaulis Vahl

Non-native: C

Distribution: Cn

Remarks: Reported from Barcelona urban area (Casasayas, 1989; also subsequent observations) and Blanes, Selva (Verloove & Aymerich, 2020).

Heliotropium curassavicum L.

Non-native: N

Distribution: Cn Cc Cs

Heliotropium europaeum L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

CONVOLVULACEAE

Convolvulus althaeoides L.

Distribution: ?Pc Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Known from a single location and probably sporadic in Pc, Seu d'Urgell (Vigo & al., 2003).

Convolvulus arvensis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Convolvulus betonicifolius Mill.

Non-native: N

Distribution: Ppc Ppe

Remarks: Known from Cercs, Berguedà (E. Sais, pers. comm.) and Àger, Noguera (J.I. Tejedor in biodiversidadvirtual.org, 2015).

Convolvulus cantabrica* L.Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC***Convolvulus farinosus* L.***Non-native:* C*Distribution:* Cn Cc*Remarks:* Reported from urban areas in Barcelona (Blanché & al., 2018) and Salou (Verloove & al., 2019).***Convolvulus lanuginosus* Desr.***Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Convolvulus lineatus* L.***Distribution:* Pc Ppc Ae Aw S R Cc Cs*IUCN category:* LC***Convolvulus sabatius* Viv. [incl. subsp. *mauritanicus* (Boiss.) Murb.]***Non-native:* C*Distribution:* Cn Cc*Remarks:* Cultivated for ornament, occasionally escaped in urban areas (Casasayas, 1989).***Convolvulus sepium* L. [*Calystegia sepium* (L.) R. Br.]***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Convolvulus siculus* L. subsp. *siculus****Distribution:* R Cc*IUCN category:* VU***Convolvulus silvaticus* Kit. [*Calystegia sepium* subsp. *silvatica* (Kit.) Griseb., *C. silvatica* (Kit.) Griseb. subsp. *disjuncta* Brummitt]***Distribution:* Cn Cc*IUCN category:* LC*Remarks:* Its distribution is poorly known.***Convolvulus soldanella* L. [*Calystegia soldanella* (L.) R. Br.]***Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* Some populations are probably in decline as a consequence of the loss of its habitat through coastal urban development.

Convolvulus tricolor L. subsp. *tricolor**Non-native:* C*Distribution:* +Aw +Cn

Remarks: Reports of this species are old and are probably referable to escaped individuals, since it was formerly cultivated for ornament. However, a report for fallow fields in Bages (Aw) due to Font Quer (1914) is closer to the usual habitat of this species at places where it is considered autochthonous.

Cressa cretica L.*Distribution:* +S +R*IUCN category:* RE

Remarks: The last confirmed report goes back to 1894, in Ivars, Pla d'Urgell (Font Quer, 1935; Sáez & al., 2010).

Cuscuta approximata Bab. subsp. *approximata* [*C. epithymum* subsp. *approximata* (Bab.) Rouy]*Distribution:* Pe Ppc Ppe S Cs*IUCN category:* LC

Remarks: Its distribution is poorly known since this taxon was sometimes reported as *C. epithymum* in broad sense.

Cuscuta campestris Yunck.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Cuscuta epilinum*** Boenn.*Non-native:* C*Distribution:* +Cc

Remarks: Known only based on a report for early 20th century in Sitges area, Garraf (Freixas, 1903).

Cuscuta epithymum (L.) L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cuscuta europaea*** L.*Distribution:* Pa Pc Pe Ppe Ae Cn*IUCN category:* LC***Dichondra micrantha*** Urb.*Non-native:* N*Distribution:* Ae Aw S O R Cn Cc

Remarks: Naturalised mainly in urban áreas.

Ipomoea hederacea (L.) Jacq.

Non-native: N

Distribution: S

Remarks: Reported from Benavent de Segrià (Recasens & Conesa, 1995) and Artesa de Segre, Noguera (Aymerich, 2016a), where it was found in irrigated fields.

Ipomoea indica (Burm.) Merr.

Non-native: N

Distribution: Aw S R Cn Cc Cs

Ipomoea purpurea (L.) Roth

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Ipomoea sagittata Poir.

Non-native: I

Distribution: Cs

Remarks: Well-established in the Ebre Delta.

SOLANACEAE

Alkekengi officinarum Moench [*Physalis alkekengi* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Atropa baetica Willk.

Distribution: Cs

IUCN category: CR

Remarks: Restricted to a small area in Ports massif (Beltran & Royo, 2004; Sáez & al., 2010).

Atropa belladonna L.

Distribution: Pa Pc Pe Ppc Ppe Cn Cc Cs

IUCN category: LC

Brugmansia suaveolens (Willd.) Bercht. & J. Presl

Non-native: C

Distribution: Cs

Remarks: Observed by M. Arrufat in 2011 (<http://www.biodiversidadvirtual.org/>).

Capsicum annuum L.

Non-native: C

Distribution: Cn Cc Cs

Cestrum nocturnum L.*Non-native:* C*Distribution:* Cs*Remarks:* Reported from the Ebre Delta, persistent after cultivation (Curcó, 2019).*Cestrum parqui* L'Hérit.*Non-native:* C*Distribution:* R Cn Cc Cs*Datura ferox* L.*Non-native:* N*Distribution:* Aw R Cn Cc Cs*Datura innoxia* Mill.*Non-native:* N*Distribution:* ?Aw ?S ?O R Cn Cc Cs*Remarks:* Its distribution was overestimated due to taxonomic confusion with *D. wrightii* (Aymerich & Sáez, 2015).*Datura stramonium* L.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Datura wrightii* Regel*Non-native:* N*Distribution:* Pc Aw S R Cn Cc Cs*Remarks:* Usually confused with *D. innoxia* (Aymerich & Sáez, 2015); see also Verloove & al. (2019).*Hyoscyamus albus* L.*Distribution:* Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC*Hyoscyamus niger* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Lycianthes rantonnetii* (Carrière) Bitter [*Solanum rantonnetii* Carrière]*Non-native:* C*Distribution:* Cc*Remarks:* Reported from two suburban locations in Tarragona area (Verloove & al., 2019).

Lycium barbarum L.*Non-native:* C*Distribution:* ?Cn ?Cc*Remarks:* Listed without precise location for Barcelona metropolitan area (Basnou & al., 2015). We do not know the background of this report.*Lycium chinense* Mill.*Non-native:* C*Distribution:* Pc Cn*Lycium cinereum* Thunb.*Non-native:* C*Distribution:* Ae*Remarks:* Only a single individual is known, found in the middle basin of Llobregat river (Aymerich, 2019).*Lycium europaeum* L.*Distribution:* Ppc Aw S O R Cn Cc Cs*IUCN category:* LC*Nicandra physalodes* (L.) Gaertn.*Non-native:* C*Distribution:* +O Cn Cs*Remarks:* There are few recent reports: Maresme (Casasayas, 1989), Ulldecona (Senar & Cardero, 2019) and Colomers, Baix Empordà (Aymerich & Sáez, 2021c). Reports from O go back to the 19th century.*Nicotiana glauca* Graham*Non-native:* N*Distribution:* Ppe Aw R Cn Cc Cs*Nicotiana longiflora* Cav.*Non-native:* C*Distribution:* Cc*Remarks:* Reported from Llobregat Delta area (Valverde & Valverde, 2019).*Nicotiana rustica* L.*Non-native:* C*Distribution:* +Ppe +Cn*Remarks:* Grown locally until the mid 20th century and occasionally was reported as subsponaneous; recent reports are not known.*Nicotiana tabacum* L.*Non-native:* C*Distribution:* O Cn Cs

Petunia ×hybrida E. Vilm. [*P. axillaris* (Lam.) Britton, Stern & Poggenb. × *P. integrifolia* (Hook.) Schinz & Thell.]

Non-native: C

Distribution: Pc Ppc Ppe Aw S O R Cn Cc Cs

Physalis angulata L.

Non-native: N

Distribution: R Cn

Remarks: Recently observed in Colomers, Baix Empordà (Aymerich, 2020c) and Santa Coloma de Farners, Selva (Gesti & Vilar, 2020).

Physalis ixocarpa Hornem.

Non-native: C

Distribution: Aw Cn Cc

Physalis peruviana L.

Non-native: C

Distribution: Pc Ppe Ae Cn Cc Cs

Physalis philadelphica Lam.

Non-native: C

Distribution: Pc Cn

Remarks: Known from Segre river, near Seu d'Urgell (Aymerich, 2016a) and also from Castellbisbal, Vallès (Gómez-Bellver & al., 2016).

Physalis viscosa L. [*P. fuscomaculata* Dunal]

Non-native: N

Distribution: Aw Cc

Remarks: Reported from Tarragona (Casasayas, 1989; Aymerich & Sáez, 2015) and Navarcles, Bages (Aymerich, 2016a). Sanz & Sobrino (2012) did not mention this species in their revision of the genus in the Iberian Peninsula.

Salpichroa organifolia (Lam.) Baill.

Non-native: N

Distribution: R Cn Cc

Solandra maxima (Dunal) P.S. Green

Non-native: C

Distribution: Cc

Remarks: Known from Sitges, Garraf (Gómez-Bellver & al., 2019c).

Solanum bonariense L.

Non-native: N

Distribution: ?S R Cn Cc

Remarks: Also listed for Lleida province (probably S) by Sobrino & Sanz (2012).

Solanum carolinense L.*Non-native:* N*Distribution:* Cn*Remarks:* This species was found in 2006 as a weed in fields of Caldes de Malavella, Selva (Catalan Agriculture Department); its current status is unknown.*Solanum chenopodioides* Lam.*Non-native:* N*Distribution:* Aw O R Cn Cc Cs*Solanum chrysostrichum* Schtdl. [*S. torvum* Sw. var. *pleiotomum* C.Y. Wu & S.C. Huang]*Non-native:* C*Distribution:* Cn*Remarks:* A single individual is known in Begur, Baix Empordà (Mallol & Maynés, 2008, as *S. torvum* Sw., and subsequent observations).*Solanum dulcamara* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Solanum elaeagnifolium* Cav.*Non-native:* C*Distribution:* Aw Cn Cc Cs*Solanum laciniatum* Aiton*Non-native:* C*Distribution:* Cn Cs*Solanum laxum* Spreng. [*S. jasminoides* Paxton]*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Barcelona area (Knapp, 2013).*Solanum linnaeanum* Hepper & P.-M.L. Jaeger*Non-native:* C*Distribution:* Cn Cc*Solanum lycopersicum* L.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Widely cultivated; commonly occurring as escaped species; it can also constitutes persistent populations in margins of rivers.

Solanum mauritianum Scop.*Non-native:* N*Distribution:* Cn*Remarks:* Known from a small area of Blanes and Lloret de Mar, Selva (Aymerich, 2016d).***Solanum nigrum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Plants with glandular hairs, fairly common in coastal areas, are referable to subsp. *schultesii* (Opiz) Wessely.***Solanum nitidibaccatum*** Bitter [*S. physalifolium* var. *nitidibaccatum* (Bitter) Edmonds; *S. physalifolium* auct., non Rusby]*Non-native:* N*Distribution:* Pe*Remarks:* Locally naturalised in vegetable gardens and fall meadows in Cerdanya and Ripollès (Aymerich, 2014; 2016a).***Solanum pseudocapsicum*** L.*Non-native:* C*Distribution:* Pe S O R Cn*Remarks:* For its distribution see Casasayas (1989) and Gómez-Bellver & al. (2019c).***Solanum rostratum*** Dunal*Non-native:* C*Distribution:* Pe Ae O R Cn Cc***Solanum sisymbriifolium*** Lam.*Non-native:* C*Distribution:* Ppe O Cn*Remarks:* Reported from Garrotxa and Vallès Oriental (Oliver, 2009; Gómez-Bellver & al., 2016).***Solanum tuberosum*** L.*Non-native:* C*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Widely cultivated and usually escaped in fields, waste places and rivers.***Solanum villosum*** Mill. [*S. nigrum* subsp. *miniatum* Willd.]*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Withania somnifera (L.) Dunal*Distribution:* Cs*IUCN category:* NT*Remarks:* There is not consensus on its native status.**OLEACEAE*****Chrysojasminum fruticans*** (L.) Banfi [*Jasminum fruticans* L.]*Distribution:* Pc Ppc Ppe Aw S ?O R Cc Cs*IUCN category:* LC***Forsythia intermedia*** Zabel*Non-native:* C*Distribution:* Pc*Remarks:* Usually cultivated for ornament and doubtfully casual in the upper valley of Segre River, where it was used in roadsides restoration (Aymerich, 2016a). Its population is maintained through vegetative propagation.***Forsythia suspensa*** (Thunb.) Vahl*Non-native:* C*Distribution:* Ae ?O*Remarks:* Found in Avià, Berguedà, by Aymerich (2019); also listed for Garrotxa (Oliver, 20019).***Fraxinus americana*** L.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe S ?O Cn*Remarks:* Casual or locally naturalised, mainly in suburban riparian habitats.***Fraxinus angustifolia*** Vahl*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably allocthonous in Pa, Pc and Ae. Subsp. *oxycarpa* (Willd.) Franco & Rocha Afonso was reported from our area (mainly northeastern Catalonia). However the infraspecific taxonomy of *F. angustifolia* is unclear.***Fraxinus excelsior*** L. subsp. *excelsior**Distribution:* Pa Pc Pe Ppc Ppe Ae [Aw] O R Cn [Cc] [Cs]*IUCN category:* LC*Remarks:* Occasionally naturalised in some areas of Ppc, Ae and Cn outside its natural range.***Fraxinus ornus*** L.*Non-native:* I*Distribution:* Ppc Ppe Ae Aw O Cn Cc Cs

Fraxinus pennsylvanica Marshall*Non-native:* N*Distribution:* Ppc ?O ?Cn Cc Cs*Remarks:* Its presence in Girona requires confirmation. Some reports may be confusions with *F. americana*.*Jasminum mesnyi* Hance*Non-native:* C*Distribution:* Cn*Remarks:* A garden escape observed in suburban environments in Sant Cugat, Collserola mountain (Aymerich & Sáez, 2021c).*Jasminum nudiflorum* Lindl.*Non-native:* N*Distribution:* Aw S O Cn Cc Cs*Jasminum officinale* L.*Non-native:* C*Distribution:* Pe Ppe Ae Aw O Cn Cc Cs*Remarks:* Although Andrés (2013) only listed *J. grandiflorum* as naturalised in the Iberian Peninsula, the escaped plants found recently in our area correspond to *J. officinale*.*Ligustrum lucidum* W.T. Aiton*Non-native:* I*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* It can be invasive, especially in wet places in northeast of the studied area.*Ligustrum ovalifolium* Hassk.*Non-native:* C*Distribution:* Ppe Cn Cc*Ligustrum sinense* Lour.*Non-native:* C*Distribution:* Ae*Remarks:* Reported from Avià (Berguedà) by Aymerich (2019).*Ligustrum vulgare* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Olea europaea L. subsp. ***europaea****Distribution*: S R Cc Cs*IUCN category*: LC*Remarks*: Distinction between native and naturalised populations is often unclear. We only provide data on allegedly native populations, usually recognised as *O. europaea* var. *sylvestris* (Mill.) Brot., although no clear discontinuities have been detected to support the recognition of discrete entities (Besnard & al., 2007).***Phillyrea angustifolia*** L.*Distribution*: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Phillyrea latifolia*** L.*Distribution*: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Syringa vulgaris*** L.*Non-native*: N*Distribution*: Pc Pe Ppc Ppe Ae Aw S O Cn Cs*Remarks*: Most of the available data are referable to populations established close to old gardens by vegetative multiplication.**GESNERIACEAE*****Ramonda myconi*** (L.) Rchb.*Distribution*: Subendemic. Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category*: LC**PLANTAGINACEAE*****Anarrhinum bellidifolium*** (L.) Willd.*Distribution*: Pa Pc Pe O R Cn Cc*IUCN category*: LC***Antirrhinum huetii*** Reut. [*A. majus* subsp. *striatum* (DC.) Rothm.; *A. latifolium* auct., non Mill.]*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC*Remarks*: According to Liberal & al. (2014) *A. latifolium* Mill. is endemic to southwestern Alps. Hybrid zones arise where both *A. huetii* and *A. majus* come into contact, as happens in eastern Pyrenees and Pre-Pyrenees (Whibley & al., 2006).

Antirrhinum litigiosum Pau [*A. barrelieri* Boreau subsp. *litigiosum* (Pau) O. Bolòs & Vigo, *A. majus* L. subsp. *litigiosum* (Pau) Rothm.]

Distribution: Aw S R Cc Cs

IUCN category: LC

Antirrhinum majus L.

Distribution: Subendemic. [Pa] [Pc] Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Remarks: Probably subendemic; most of its distribution area in natural habitats is found within the geographical coverage of this checklist, mainly in eastern Catalonia in areas with maritime influence. Many populations, in our area and elsewhere, have originated by garden escapes.

Antirrhinum molle L.

Distribution: Subendemic. Pc Pe Ppc Ppe Aw

IUCN category: LC

Antirrhinum pertegasii Rothm. [*A. sempervirens* subsp. *pertegasii* (Rothm.) O. Bolòs]

Distribution: Subendemic. Cs

IUCN category: NT

Remarks: Endemic to Ports massif. See Sáez & al. (2009a) for its detailed distribution.

Antirrhinum sempervirens Lapeyr.

Distribution: ?Pa Pc Pe

IUCN category: NT

Antirrhinum ×montserratii Molero & Romo [*A. majus* × *A. molle*]

Distribution: Pc

Antirrhinum latifolium* × *A. majus

Distribution: Pc Pe Ppe

Antirrhinum litigiosum* × *A. majus

Distribution: Cc

Remarks: Occasionally, in Cc specimens are found that are intermediate in their characters between *A. litigiosum* and *A. majus* and probably are of hybrid origin.

Antirrhinum litigiosum* × *A. pertegasii

Distribution: Cs

Remarks: Occasionally, in Cs specimens are found that are intermediate in their characters between *A. pertegasii* and *A. litigiosum* and probably are of hybrid origin.

Antirrhinum molle* × *A. sempervirens*Distribution:* Pe*Remarks:* Only known in Tosa d'Alp massif (P. Aymerich & I. Soriano, unpubl. data).***Asarina procumbens* Mill. [*Antirrhinum asarina* L.]***Distribution:* Pa Pc Pe Ppe O R Cn*IUCN category:* LC***Callitriche brutia* Petagna***Distribution:* ?Pe ?O R Cn*IUCN category:* LC***Callitriche obtusangula* Hegelm.***Distribution:* R Cn +Cc Cs*IUCN category:* LC***Callitriche palustris* L.***Distribution:* Pa Pc Pe*IUCN category:* LC***Callitriche stagnalis* Scop.***Distribution:* Pc Pe Ae O Cn Cs*IUCN category:* LC***Chaenorhinum crassifolium* (Cav.) Kostel. subsp. *cadevallii* (O. Bolòs & Vigo) Güemes [*C. organifolium* subsp. *cadevallii* (O. Bolòs & Vigo) M. Laínz]***Distribution:* Subendemic. Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Chaenorhinum minus* (L.) Lange subsp. *minus****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Chaenorhinum organifolium* (L.) Kostel. subsp. *organifolium****Distribution:* Pa Pc Pe*IUCN category:* LC***Chaenorhinum reyesii* (C. Vicioso & Pau) Benedí [*C. rubrifolium* subsp. *reyesii* (C. Vicioso & Pau) O. Bolòs, Vigo, Masalles & Ninot]***Distribution:* S*IUCN category:* EN***Chaenorhinum rubrifolium* (DC.) Fourt. subsp. *rubrifolium* [*Linaria rubrifolia* DC.]***Distribution:* Aw S Cn Cc Cs*IUCN category:* LC

Chaenorhinum rupestre (Guss.) Speta [*C. exile* (Coss. & Kralik) Lange]*Distribution:* S*IUCN category:* DD*Remarks:* Reported from Riba-Roja d'Ebre (Ribera d'Ebre) by Batriu & Mercadé (2020). See Serra & Crespo (2021) for nomenclature.***Cymbalaria muralis*** G. Gaertn., B. Mey. & Scherb. subsp. *muralis* [*Linaria cymbalaria* (L.) Mill.]*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Naturalised in urban and suburban habitats.***Digitalis lutea*** L. subsp. *lutea**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC***Digitalis obscura*** L. subsp. *obscura**Distribution:* Aw S Cc Cs*IUCN category:* LC*Remarks:* Bolòs & Vigo (1996) suggested the presence in Ports massif (Cs) of specimens related to subsp. *laciniata* (Lindl.) Maire. However, this view was not followed by Benedí & Hinz (2009).***Digitalis purpurea*** L. subsp. *purpurea**Distribution:* Pa Pc ?Pe [Cn]*IUCN category:* LC*Remarks:* An old report for Collada de Toses (Pe) requires confirmation. This species occurs as escaped in Espinelves, Osona (Cn).***Erinus alpinus*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cc Cs*IUCN category:* LC***Globularia alypum*** L.*Distribution:* Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Globularia bisnagarica*** L. [*G. punctata* Lapeyr.; *G. vulgaris* subsp. *willkommii* (Nyman) Wettst.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC

Globularia cordifolia* L.Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw O Cn*IUCN category:* LC***Globularia fuxeensis* Giraudias***Distribution:* Pa Pc*IUCN category:* LC

Remarks: It is supposedly derived from the cross between *G. nudicaulis* and *G. repens* (see Sales & Hedge, 2001). The latter authors included *G. gracilis* Rouy & J.A. Richt. [*G. nudicaulis* subsp. *gracilis* (Rouy & J.A. Richt.) O. Bolòs, Vigo, Masalles & Ninot] in the synonymy of *G. fuxeensis*. However, according to Tison & al. (2014) *G. gracilis* is a taxonomic synonym of *G. nudicaulis*.

Globularia nudicaulis* L.Distribution:* Pa Pc Ppc Ppe*IUCN category:* LC***Globularia repens* Lam. [*G. cordifolia* subsp. *repens* (Lam.) Wettst.]***Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs*IUCN category:* LC

Remarks: *Globularia repens* subsp. *borjae* G. López [*G. cordifolia* var. *borjae* (G. López) O. Bolòs, Vigo, Masalles & Ninot] was reported from Cc and Cs. However, this name was included in the synonymy of *G. repens* by Sales & Hedge (2001).

Globularia vulgaris* L.Distribution:* Pc Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Globularia* ×*galissieri* Giraudias [*G. bisnagarica* × *G. repens*]***Distribution:* Pc Ae***Globularia nudicaulis* × *G. repens****Distribution:* Pc***Gratiola officinalis* L.***Distribution:* ?O R Cn*IUCN category:* LC

Hippuris vulgaris L.*Distribution*: Pc Ppc +R +Cn*IUCN category*: CR

Remarks: Currently known from a single location in Àneu valley; formerly it was reported from other locations where it is vanished (Sáez & al., 2010). The only occurrence (as native) in Ppc (Montcortès) goes back to 1918 (see Sáez & al., 2010). This species has been introduced in artificial ponds in Guàrdia d'Ares, Alt Urgell (Palau & al., 2016; Aymerich & Sáez, 2021a).

Kickxia commutata (Rchb.) Fritsch subsp. ***commutata*** [*Linaria commutata* Rchb. subsp. *commutata*]*Distribution*: R Cn Cs*IUCN category*: LC***Kickxia elatine*** subsp. ***crinita*** (Mabille) Greuter*Distribution*: Aw S R Cn Cc Cs*IUCN category*: LC***Kickxia elatine*** (L.) Dumort. subsp. ***elatine****Distribution*: Ppc S O R Cn Cc Cs*IUCN category*: LC***Kickxia spuria*** (L.) Dumort. subsp. ***integrifolia*** (Brot.) R. Fern. [*Linaria spuria* (L.) Mill. subsp. *integrifolia* (Brot.) O. Bolòs & Vigo]*Distribution*: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC

Remarks: According to Güemes (2009) this species is represented by subsp. *integrifolia*.

Linaria aeruginea (Gouan) Cav. subsp. ***cardonica*** (Font Quer) L. Sáez & M. Sainz [*L. supina* var. *cardonica* Font Quer]*Distribution*: Subendemic. Cc Cs*IUCN category*: LC

Remarks: See Sáez & al. (2004) for taxonomy. Some plants from Pc called *L. supina* var. *font-queri* O. Bolòs & Vigo show intermediate characters between *L. aeruginea* subsp. *cardonica* and *L. supina*.

Linaria alpina L. subsp. ***alpina****Distribution*: Pa Pc Pe Ppe*IUCN category*: LC***Linaria angustissima*** (Loisel.) Borbás [*L. vulgaris* subsp. *italica* (Trevir.) Arcang.]*Distribution*: Pc Pe R*IUCN category*: LC

Linaria arvensis (L.) Desf.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Linaria bubanii*** Font Quer [*L. glauca* subsp. *bubani* (Font Quer) Valdés; *L. fragilis* Bubani, nom. illeg.]*Distribution:* Pc Ppc*IUCN category:* LC*Remarks:* This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.***Linaria birta*** (L.) Moench*Distribution:* Ppc [S] Cn Cc*IUCN category:* LC***Linaria incarnata*** (Vent.) Spreng.*Non-native:* C*Distribution:* Ppe*Remarks:* This species, endemic to Portugal and western Spain (Vigalondo & al., 2015; Fernández-Mazuecos & al., 2018), was reported from waysides between Gósol and Tuixén (Vigo & al., 2003). Seeds of *L. incarnata* were probably included (perhaps accidentally) in seed mixtures for revegetation purposes.***Linaria micrantha*** (Cav.) Hoffmanns. & Link [*L. arvensis* subsp. *micrantha* (Cav.) Lange]*Distribution:* Aw S ?O R Cn Cc Cs*IUCN category:* LC*Remarks:* Old reports from O require confirmation.***Linaria oblongifolia*** (Boiss.) Boiss. & Reut. subsp. *aragonensis* (Lange) D.A. Sutton [*L. glauca* subsp. *aragonensis* (Lange) Valdés]*Distribution:* Aw Cn Cc*IUCN category:* VU*Remarks:* Its populations might be strongly fluctuating. This species is probably under-recorded in poorly surveyed regions (Aw and Cc).***Linaria oligantha*** Lange subsp. *oligantha**Distribution:* +S*IUCN category:* RE*Remarks:* Not found recently in Montagut, close to Lleida (Sáez & al., 2010). Nevertheless, *L. oligantha* could persist in this area, since it has been recently observed in an Aragonese location very close (< 1 km) to the boundary of S (Pedrol & al., 2015).

Linaria pedunculata (L.) Chaz.*Distribution*: +Cn*IUCN category*: RE*Remarks*: Reported from a single location in the Barcelona area, where it was found in 19th century by M. Willkomm. This species has not been found recently and has probably become extinct (Sáez & al., 2010).***Linaria pelisseriana*** (L.) Mill.*Distribution*: Ae O R Cn*IUCN category*: LC***Linaria repens*** (L.) Mill.*Distribution*: Pa Pc Pe Ppc Ppe R Cs*IUCN category*: LC*Remarks*: Two varieties were recognised by Bolòs & Vigo (1996) but no clear discontinuities have been detected to support the recognition of discrete entities (Sáez, 2009a).***Linaria simplex*** Desf. [*L. arvensis* subsp. *simplex* P. Fourn.]*Distribution*: Pa Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Linaria spartea*** (L.) Chaz.*Non-native*: C*Distribution*: R Cn*Remarks*: Casual in Cap de Creus peninsula and Selva county (Fernández-Mazuecos & al., 2018); old reports from Barcelona require confirmation.***Linaria supina*** (L.) Chaz. subsp. *supina**Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category*: LC*Remarks*: Plants referable to var. *pyrenaica* (DC.) Duby are provisionally included here.***Linaria triphylla*** (L.) Mill.*Distribution*: R Cn Cc Cs*IUCN category*: LC*Remarks*: Reports from Bages (Ae-Aw) (Bolòs & Vigo, 1996) require confirmation.***Linaria viscosa*** (L.) Chaz. subsp. *viscosa**Non-native*: C*Distribution*: Cn*Remarks*: Reported from suburban areas close to Barcelona (Sáez & al., 2000; Sáez, 2009b) and road margins in Guillerics massif (Fernández-Mazuecos & al., 2018). Its local naturalisation needs to be confirmed.

Linaria vulgaris Mill.*Distribution:* Pa*IUCN category:* NT

Remarks: Although it is a rare species restricted to the middle and lower area of the Aran Valley, this population is connected with others located on the northern slope of the Pyrenees. In addition, according to our observations (L. Sáez) *L. vulgaris* colonises more or less disturbed habitats (waysides and margins of cultivated fields) so it is not considered a threatened species.

Linaria ×versicolor (Jacq.) Chaz.*Non-native:* C*Distribution:* Aw Cn

Remarks: Known from Igualada (Aw) and lower Besòs river (Cn) (Aymerich & Sáez, 2021c; L. Sáez, unpubl. data). The specimens attributed to this taxon probably correspond to cultivated forms of hybrid origin between *L. maroccana* and other species of sect. *Versicolores* (Sáez, 2019). See Sutton (1988) for detailed information about the name *L. ×versicolor*. Reports of *L. bipartita* (Vent.) Willd. from Barcelona (Bolòs & Vigo, 1996) are probably referable to *L. ×versicolor*.

Misopates orontium (L.) Raf. [*Antirrhinum orontium* L.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Plantago afra*** L.*Distribution:* Pe Ppc Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Plantago albicans*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Plantago alpina*** L. [*P. maritima* subsp. *alpina* (L.) O. Bolòs & Vigo]*Distribution:* Pa Pc Pe*IUCN category:* LC

Remarks: A report for Ppe (Gruber, 1978) is probably based on confusion with *P. maritima* subsp. *serpentina* (Vigo & al., 2003).

Plantago arenaria Waldst. & Kit. [*P. indica* L., nom. illeg.; *P. scabra* Monech]*Distribution:* Pe Ae S +O R Cn Cc*IUCN category:* LC

Remarks: Not found recently in O (Oliver & Font, 2009).

Plantago argentea Chaix*Distribution:* ?Pc Pe Ppc Ppe Ae ?R*IUCN category:* LC

Plantago bellardii All.*Distribution:* Pe R Cn Cc*IUCN category:* LC***Plantago cornutii*** Gouan*Distribution:* R*IUCN category:* CR*Remarks:* It is documented only from Aiguamolls de l'Empordà (Sáez & al., 2010).***Plantago coronopus*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Plantago crassifolia*** Forssk.*Distribution:* R Cn Cc Cs*IUCN category:* LC*Remarks:* Reports from inland areas are due to confusion with *P. maritima* subsp. *serpentina* (Pedrol, 2009; pers. comm, 15 Aug 2021).***Plantago lagopus*** L.*Distribution:* Aw S O R Cn Cc Cs*IUCN category:* LC***Plantago lanceolata*** L. [*P. lanceolata* var. *sphaerostachya* Mert. & W.D.J. Koch]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Plantago loeflingii*** L.*Distribution:* S ?Cn*IUCN category:* VU*Remarks:* Its presence in Cn (Bertí-Gallifa mountains) requires confirmation.***Plantago major*** subsp. *intermedia* (Gilib.) Lange [*P. major* subsp. *pleiosperma* Pilg.]*Distribution:* Pa Pc Pe Ppe Ae O Cn*IUCN category:* LC*Remarks:* Its distribution is poorly known. This taxon has been under-recorded for *P. major* subsp. *major*.***Plantago major*** L. subsp. *major**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Plantago maritima*** L. subsp. *serpentina* (All.) Arcang.*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC

Plantago media L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Plantago monosperma Pourr. subsp. ***monosperma***

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Pyrenean reports of *P. atrata* Hoppe are based on confusions with typical *P. monosperma* (Pedrol, 2009).

Plantago sempervirens Crantz [*P. cynops* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Plantago subulata L. [*P. holosteum* Scop., *P. subulata* subsp. *holosteum* (Scop.) O. Bolòs & Vigo; *P. subulata* subsp. *radicata* (Hoffmanns. & Link) O. Bolòs & Vigo; *P. subulata* var. *masclansii* O. Bolòs & Vigo]

Distribution: Pc Pe Ppc Ppe Ae R Cn Cc

IUCN category: LC

Remarks: After extensive study of specimens belonging to the *P. subulata-holosteum* group from all over its distribution range, Hassemmer & al. (2017) included *P. holosteum* Scop. and *P. radicata* Hoffmanns. & Link within the synonymy of *P. subulata*.

Plantago ×mixta Domin. [*P. major* × *P. media*]

Distribution: Pe O

Veronica acinifolia L.

Distribution: Cn

IUCN category: LC

Veronica agrestis L.

Distribution: Pa O

IUCN category: LC

Veronica alpina L.

Distribution: Pa Pc Pe

IUCN category: LC

Veronica anagallis-aquatica L. subsp. ***anagallis-aquatica***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Veronica anagalloides Guss. subsp. ***anagalloides*** [*V. anagallis-aquatica* subsp. *anagalloides* (Guss.) Batt.]

Distribution: S R Cs

IUCN category: LC

Remarks: Its distribution is, at present, poorly known.

Veronica aphylla L.

Distribution: Pa Pc Pe Ppe ?O

IUCN category: LC

Remarks: An old report for Cabrerès highland (O) (see Bolòs & Vigo, 1996) requires confirmation.

Veronica arvensis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Veronica beccabunga L. subsp. ***beccabunga***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Veronica bellidioides L. [*V. bellidioides* subsp. *lilacina* (F. Towns.) Nyman]

Distribution: Pa Pc Pe

IUCN category: LC

Veronica catenata Pennell [*V. anagallis-aquatica* subsp. *aquatica* Nyman]

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: Probably overlooked as a result of confusion with *V. anagallis-aquatica*.

Veronica chamaedrys L. subsp. ***chamaedrys***

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn

IUCN category: LC

Veronica cymbalaria Bodard

Distribution: Ppc Aw R Cn Cs

IUCN category: LC

Veronica dillenii Crantz

Distribution: Pc Pe Ppe Cn

IUCN category: LC

Veronica filiformis Sm.*Non-native*: C*Distribution*: +Cc*Remarks*: Reported from Montserrat mountain (Nuet & Panareda, 1992) where it was found in a vegetable garden in 1942.*Veronica fruticans* subsp. *cantabrica* M. Láinz*Distribution*: Pa Pc Pe Ppe*IUCN category*: LC*Veronica fruticans* Jacq. subsp. *fruticans* [*V. fruticulosa* subsp. *saxatilis* (Scop.) Arcang.]*Distribution*: Pa Pc Pe*IUCN category*: LC*Veronica fruticulosa* L.*Distribution*: Pe Ppe*IUCN category*: LC*Remarks*: It has been often confused with *V. fruticans* subsp. *cantabrica*.*Veronica hederifolia* L.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Remarks*: Probably over-recorded for *V. triloba*.*Veronica longifolia* L.*Non-native*: C*Distribution*: Pe*Remarks*: Reported from Ribes valley (Vigo, 1983).*Veronica montana* L.*Distribution*: Pa Pc Pe Ppe O Cn*IUCN category*: LC*Veronica nummularia* Gouan*Distribution*: Pa Pc Pe Ppe*IUCN category*: LC*Veronica officinalis* L.*Distribution*: Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs*IUCN category*: LC*Veronica orsiniana* Ten. [*V. teucrium* subsp. *orsiniana* (Ten.) Watzl; *V. austriaca* var. *dubia* (Lapeyr.) O. Bolòs & Vigo; *V. austriaca* subsp. *teucrium* sensu O. Bolòs & Vigo]*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category*: LC

Veronica peregrina L. subsp. *peregrina**Non-native*: N*Distribution*: Ppc Ppe Cn Cs***Veronica persica*** Poir.*Non-native*: N*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Veronica polita*** Fr.*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Remarks*: There is no consensus on its native status.***Veronica ponae*** Gouan*Distribution*: Pa Pc Pe Ppc Ppe*IUCN category*: LC***Veronica praecox*** All.*Distribution*: Pc Pe Ppc Ppe Ae Aw S R Cn Cc*IUCN category*: LC***Veronica scutellata*** L.*Distribution*: Pa Pe Ppc R*IUCN category*: NT***Veronica serpyllifolia*** L. subsp. *serpyllifolia* [*V. serpyllifolia* subsp. *humifusa* (Dicks.) Syme]*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cs*IUCN category*: LC***Veronica spicata*** L. subsp. *spicata**Distribution*: Pa Pc Pe Ppe*IUCN category*: LC***Veronica tenuifolia*** Asso subsp. *tenuifolia* [*V. austriaca* subsp. *tenuifolia* (Asso) O. Bolòs & Vigo]*Distribution*: Pe Ppc Ppe Ae Aw S ?O Cn Cc Cs*IUCN category*: LC*Remarks*: Its presence in O requires confirmation (Oliver & Font, 2009).***Veronica triloba*** (Opiz) Opiz [*V. hederifolia* subsp. *triloba* (Opiz) Celak.]*Distribution*: Pc Pe Ppe Aw*IUCN category*: LC*Remarks*: Its distribution is probably underestimated due to confusion with *V. hederifolia*.

Veronica triphyllos L.*Non-native*: N*Distribution*: Pa Pc Pe Ppc Ppe*Remarks*: Its non-native status is uncertain.*Veronica urticifolia* Jacq. [*V. latifolia* auct.]*Distribution*: Pc Pe Ppe O Cn*IUCN category*: LC*Veronica verna* L.*Distribution*: Pa Pc Pe Ppc Ppe Cn*IUCN category*: LC*Veronica* × *bolosiana* Font Quer [*V. orsiniana*? × *V. ponae*]*Distribution*: Pc*Veronica* × *gundisalvii* Sennen [*V. orsiniana* × *V. tenuifolia* subsp. *tenuifolia*]*Distribution*: Pe Ppc Ae Aw Cc*Remarks*: This hybrid is sometimes found growing in the absence of parental species.**SCROPHULARIACEAE***Buddleja davidii* Franch.*Non-native*: I*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*Myoporum insulare* R. Br.*Non-native*: C*Distribution*: Cn Cc? Cs?*Remarks*: A species of uncertain taxonomic status, which was listed for Tarragona province (Paiva, 2001). Two well-developed specimens were found growing in maritime rocks between Cap Roig and Cap de les Penyes Blanques, Baix Empordà (Aymerich & Sáez, 2021c).*Myoporum laetum* G. Forst. [*M. tenuifolium* G. Forst.]*Non-native*: N*Distribution*: Cn Cc Cs*Remarks*: Usually only a cultivation relict.*Scrophularia alpestris* Benth.*Distribution*: Pa Pc Pe Ppc Ppe O*IUCN category*: LC

Scrophularia auriculata L. subsp. *auriculata* [*S. balbisii* Hornem.]*Distribution:* Pa Pc Pe Ppc Ppe O Cn Cc Cs*IUCN category:* LC***Scrophularia auriculata*** subsp. *valentina* (Rouy) Ortega Oliv., Serra, Herrero & Muñoz Garm. [*S. auriculata* subsp. *pseudoauriculata* (Sennen) O. Bolòs & Vigo; *S. laevigata* subsp. *valentina* (Rouy) O. Bolòs & Vigo]*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Scrophularia canina*** L. subsp. *canina**Distribution:* Pc Pe Ppc Ppe ?Ae Aw S ?O R Cn Cc Cs*IUCN category:* LC***Scrophularia crithmifolia*** Boiss. [*S. canina* subsp. *crithmifolia* (Boiss.) O. Bolòs & Vigo]*Distribution:* Pa Pc Pe Ppc Ppe Aw O*IUCN category:* LC*Remarks:* Plants called *S. crithmifolia* var. *catalonica* O. Bolòs & Vigo were not accepted by Ortega Olivencia (2009) as a separate taxon from typical *S. crithmifolia*.***Scrophularia lyrata*** Willd. [*S. aquatica* auct., *S. auriculata* sensu Ortega Oliv. & Devesa]*Distribution:* Cn*IUCN category:* DD*Remarks:* Reported only from Calonge (Baix Empordà) by Ortega Olivencia & Devesa (1993, sub *S. auriculata* L.). Ortega Olivencia (2009) also accepted its presence in our area.***Scrophularia nodosa*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn*IUCN category:* LC***Scrophularia peregrina*** L.*Distribution:* Pe Ppe Ae O R Cn Cc*IUCN category:* LC***Scrophularia pyrenaica*** Benth.*Distribution:* ?Pa Pc Ppc Ppe*IUCN category:* VU***Verbascum blattaria*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC

Verbascum boerhaviai L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Verbascum chaixii*** Vill. subsp. *chaixii**Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC***Verbascum lychnitis*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Verbascum nigrum*** L. subsp. *nigrum**Distribution:* Pa Pc*IUCN category:* LC*Remarks:* An old report for Toses (Pe) (Vayreda, 1881) is not supported by herbarium specimens and should be disregarded (Vigo, 1983).***Verbascum pulverulentum*** Vill.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Verbascum rotundifolium*** Ten. subsp. *ripacurcicum* O. Bolòs & Vigo*Distribution:* Ppc*IUCN category:* LC***Verbascum sinuatum*** L.*Distribution:* ?Pa Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* An old report for Pa (see Bolòs & Vigo, 1996) requires confirmation.***Verbascum thapsus*** L. [*V. thapsus* subsp. *crassifolium* (Lam.) Murb; *V. thapsus* subsp. *montanum* (Schr.) Bonnier & Layens]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* The morphological plasticity exhibited by this species is highly remarkable, and on this basis several subspecies were recognised (Bolòs & Vigo, 1996). However, none of them deserve taxonomic recognition (Benedí, 2009).***Verbascum virgatum*** Stokes*Distribution:* Aw ?Cn Cc*IUCN category:* LC*Remarks:* Its presence is probably accidental. Reports from Guillerics (Cn) (see Bolòs & Vigo, 1996) require confirmation, while those from Cs (Bolòs & Vigo, 1996, sub *V. virgatum* subsp. *dertoseense*) are referable to *V. x pseudoblattaria* W.D.J. Koch.

Verbascum chaixii* subsp. *chaixii* × *V. sinuatum

Remarks: Reported by Benedí (2009) without precise location.

***Verbascum* × *hybridum* Brot. [*V. pulverulentum* × *V. sinuatum*]**

Distribution: Ppc

Remarks: Collected in Àger, Montsec mountain, by Benedí & Romo (BCN 60760).

***Verbascum* × *lemenciacum* Rouy [*V. chaixii* subsp. *chaixii* × *V. lychnitis*]**

Remarks: Reported by Benedí (2009) without precise location.

***Verbascum* × *longiracemosum* St.-Amans [*V. sinuatum* × *V. thapsus*]**

Remarks: Reported by Mürbeck (1933) for Cabanes, Alt Empordà.

***Verbascum nigrum* subsp. *nigrum* × *V. thapsus* [? *V.* × *semialbum* Chaub.]**

Distribution: Pa Pc

Remarks: Reported by Benedí (2009) who collected this hybrid in Cavallers, Alta Ribagorça (BCN 63196) and also in Es Bòrdes, Val d'Aran (BCN 60758, BCN 60759).

***Verbascum* × *nuriae* Sennen [*V. boerhavia* × *V. lychnitis*]**

Distribution: Pe

Remarks: See Benedí (2009, comments under *V. lychnitis*).

***Verbascum* × *pseudoblattaria* W.D.J. Koch [*V. blattaria* × *V. lychnitis*; *V. virgatum* nothosubsp. *dertosense* Benedí & Rovira]**

Distribution: Cs

Remarks: See comments under *V. virgatum*.

***Verbascum* × *regelianum* Wirtg. [*V. lychnitis* × *V. pulverulentum*]**

Distribution: Pe

Remarks: Reported from two locations in Ribes valley (Vigo, 1983, sub *V.* × *euryle* Franchet); probably overlooked and more common than known.

***Verbascum* × *schiedeanum* W.D.J. Koch [*V. lychnitis* × *V. nigrum* subsp. *nigrum*]**

Distribution: Pa Pc

Remarks: Two occurrences are documented for the studied area: Montgarri, Val d'Aran (BCN 60761) and Boí, Alta Ribagorça (BCN 63193).

***Verbascum* × *thaspi* L. [*V. spurium* W.D.J. Koch; *V. lychnitis* × *V. thapsus*]**

Distribution: Pa Pc Pe Ppe

Remarks: Known from Vall d'Aran (Benedí, 2009; BCN 60757), Bagà, Berguedà (BCN 63194), Espot, Pallars Sobirà (BCN 63195) and Ribes valley (Sennen, 1936; Vigo, 1983).

LINDERNIACEAE

Lindernia dubia (L.) Pennell

Non-native: N

Distribution: S R Cs

MARTYNIACEAE

Probooscidea louisiana (Mill.) Thell.

Non-native: C

Distribution: Cc

Remarks: Reported from Sant Boi de Llobregat, Baix Llobregat (Gómez-Bellver & al., 2019c) and Perelló, Baix Ebre (Verloove & al., 2019).

PEDALIACEAE

Sesamum indicum L.

Non-native: C

Distribution: Cn Cs

Remarks: Reported from Amposta, Montsià (Royo, 2006) and Papiol, Baix Llobregat (Gómez-Bellver & al., 2016).

ACANTHACEAE

Acanthus mollis L.

Non-native: N

Distribution: Ppe Ae Aw S O R Cn Cc Cs

Remarks: This species constitutes naturalised populations in coastal areas; in inland areas the data are scarce and often refer to garden throw-outs or single escaped individuals.

BIGNONIACEAE

Campsis radicans (L.) Seem.

Non-native: N

Distribution: Aw S O Cn

Campsis × *tagliabuana* (Vis.) Rehder [*C. radicans* × *C. grandiflora* (Thunb.) K. Schum.]

Non-native: C

Distribution: Cs

Remarks: Reported from several locations in the lower Ebre basin (Royo, 2006).

Catalpa bignonioides Walter

Non-native: C

Distribution: Pc Ppc Ppe Ae Aw O Cn

Remarks: It is in the naturalisation process.

Dolicandra unguis-cati (L.) L.G. Lohmann

Non-native: C

Distribution: Cn Cc

Remarks: A rare garden escape in coastal gardens (Casasayas, 1989).

Jacaranda mimosifolia D. Don.

Non-native: C

Distribution: Cn Cs

Remarks: First report from lower Ebre basin (Royo, 2006).

Podranea ricasoliana (Tanfani) Sprague

Non-native: C

Distribution: R Cn Cc

Remarks: First report from Costa Brava (Mallol & Maynés, 2008); see also Gómez-Bellver & al. (2019a) and Verloove & al. (2019). It is unknown if this species has become naturalised in some areas.

Tecomaria capensis (Thunb.) Spach [*Tecoma capensis* (Thunb.) Lindl.]

Non-native: C

Distribution: Cn Cc

Remarks: Reported from Costa Brava (Mallol & Maynés, 2008), Barcelona (Gómez-Bellver & al., 2019c) and Tarragonès (Aymerich, 2020a).

LENTIBULARIACEAE

Pinguicula alpina L.

Distribution: Pa Pc

IUCN category: LC

Pinguicula dertosensis (Cañig.) Mateo & M.B. Crespo [*P. grandiflora* subsp. *dertosensis* (Cañig.) O. Bolòs & Vigo]

Distribution: Subendemic. Cs

IUCN category: NT

Remarks: Endemic to Ports massif and its surroundings (Crespo & al., 2020).

Pinguicula grandiflora Lam.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Pinguicula vulgaris L.

Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Utricularia australis R. Br.*Distribution:* Pc Pe Ppc Ae S R +Cc Cs*IUCN category:* NT***Utricularia minor*** L.*Distribution:* Pa*IUCN category:* VU*Remarks:* Only known from the upper Aran valley (Sáez & al., 2010).**VERBENACEAE*****Aloysia citriodora*** Palau [*Lippia triphylla* (L'Hér.) Kuntze]*Non-native:* C*Distribution:* Ppe Cs***Glandularia aristigera*** (S. Moore) Tronc. [*G. pulchella* (Sweet) Tronc.]*Non-native:* C*Distribution:* Cn*Remarks:* Found in suburban environments of the lower Besòs river, close to Barcelona (S. Argemí in biodiversidadvirtual, 2017).***Lantana camara*** L. aggr.*Non-native:* N*Distribution:* Cn Cc Cs*Remarks:* Naturalised plants correspond to gardening forms (hybrids, in some cases) in which are probably involved *L. depressa* Small, *L. strigocamara* R.W. Sanders and *L. hirsuta* M. Martens & Galeotti subsp. *hirsuta*. Escaped or naturalised plants of *L. camara* in a strict sense are unknown.***Lantana montevidensis*** (Spreng.) Briq.*Non-native:* C*Distribution:* Cn Cc***Phyla canescens*** (Knuth) Greene [*Lippia canescens* Knuth]*Non-native:* N*Distribution:* Ae Aw S R Cn Cc Cs***Phyla nodiflora*** (L.) Greene [*Lippia nodiflora* (L.) Michx.]*Distribution:* +Cn Cc ?Cs*IUCN category:* VU*Remarks:* Recent reports come from Llobregat Delta (González & al., 2016). The information about this species is unclear because it has been largely confused with *P. filiformis*.

Verbena bonariensis* L.Non-native:* C*Distribution:* S Cn Cc*Remarks:* First reports from Sarroca, Segrià (Conesa, 1991b) and Llobregat Delta (Macías & al., 1996); later found elsewhere.***Verbena brasiliensis* Vell. [*V. litoralis* auct., non Kunth]***Non-native:* N*Distribution:* Cn Cc*Remarks:* Reported from lower Tordera, Llobregat and Besòs bassins (Verloove, 2003; Álvarez & al., 2016; Guardiola & Petit, 2020).***Verbena incompta* P.W. Michael [*V. litoralis* Kunth var. *brevibracteata* (Kuntze) N. O'Learly]***Non-native:* N*Distribution:* Cc*Remarks:* Reported from Molins de Rei, Baix Llobregat (Álvarez & al., 2016).***Verbena officinalis* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Verbena rigida* Spreng.***Non-native:* C*Distribution:* Cn*Remarks:* Observed in Montgat, Maresme (Leandro Sánchez in biodiversidadvirtual.org, 2020).***Verbena supina* L.***Distribution:* ?Ppc +S +Cn*IUCN category:* ?RE*Remarks:* The last confirmed report goes back to 1933 (Font Quer, 1935; Sáez & al., 2010). This species has been observed in modern times in two reservoirs of the Catalonia-Aragon boundary, very close to Ppc (Aragonese side of Canelles and Santa Anna reservoirs: Fabregat & al., 1995; Ferrández, 2016); also known from a location close to Cs (Ulldecona reservoir: S. Cardero in biodiversidadvirtual.org, 2018). *Verbena supina* probably occurs in the Catalan area of the Canelles and Santa Anna reservoirs.**LAMIACEAE*****Ajuga chamaepitys* (L.) Schreb.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Ajuga iva (L.) Schreb.*Distribution:* Pe Ae Aw R Cn Cc Cs*IUCN category:* LC***Ajuga pyramidalis*** L.*Distribution:* Pa Pc Pe ?Ppc Ppe*IUCN category:* LC*Remarks:* Llamas (2010) listed *A. pyramidalis* subsp. *meonantha* (Hoffmanns. & Link) R. Fern. for Lleida province. However, the limits between both subspecies of *A. pyramidalis* are not well defined, at least in our area.***Ajuga reptans*** L.*Distribution:* Pa Pc Pe Ppc Ae O Cn*IUCN category:* LC***Ajuga* × *hybrida*** A. Kern. [*A. genevensis* L. × *A. reptans*]*Distribution:* Pc*Remarks:* Reported from Boí valley based upon a single specimen collected by P. Montserrat in 1958 (see Llamas, 2010). The presence of this hybrid is noticeable, since there are no known populations of *A. genevensis* in the studied area.***Ballota nigra*** L. [*B. nigra* subsp. *foetida* (Vis.) Hayek]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Betonica alopecuroides*** L. [*Stachys alopecuroides* (L.) Benth.]*Distribution:* Pa Pc*IUCN category:* LC***Betonica officinalis*** L. [*Stachys officinalis* (L.) Trevisan]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Clerodendrum bungei*** Steud.*Non-native:* C*Distribution:* Cn Cs*Remarks:* A garden escape found in Arbúcies (Selva), Amposta (Montsià) and Tortosa (Baix Ebre) (Aymerich, 2016a; Gómez-Bellver & al., 2019a).***Clerodendrum trichotomum*** Thunb.*Non-native:* C*Distribution:* Aw*Remarks:* Reported from Sallent (Aymerich, 2016a).

Clinopodium grandiflorum (L.) Kuntze subsp. ***grandiflorum*** [*Calamintha grandiflora* (L.) Moench subsp. *grandiflora*]

Distribution: Ppe

IUCN category: NT

Clinopodium nepeta (L.) Kuntze subsp. ***ascendens*** (Jord.) B. Bock [*Satureja calamintha* subsp. *ascendens* (Jord.) Briq.; *Calamintha ascendens* Jord.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Clinopodium nepeta subsp. ***spruneri*** (Boiss.) Bartolucci & F. Conti [*Satureja calamintha* subsp. *glandulosa* (Req.) P.W. Ball; *Calamintha nepeta* subsp. *glandulosa* (Req.) P.W. Ball]

Distribution: Pe Ppe Aw R Cn Cc Cs

IUCN category: LC

Clinopodium nepeta subsp. ***sylvaticum*** (Bromf.) Peruzzi & F. Conti [*Calamintha nepeta* subsp. *sylvatica* (Bromf.) R. Morales]

Distribution: Pa Pc Pe Ppe Ae O Cn

IUCN category: LC

Clinopodium serpyllifolium (M. Bieb.) Kuntze subsp. ***fruticosum*** (L.) Bräuchler [*Micromeria fruticosa* (L.) Druce; *Satureja fruticosa* (L.) Briq.]

Distribution: [Pe] Ppc Cn Cc Cs

IUCN category: LC

Remarks: Previously included within *Micromeria* Benth. sect. *Pseudomelissa* Benth. For reasons of molecular, morphological, and karyological affinities the removal of sect. *Pseudomelissa* from *Micromeria* and its transfer to *Clinopodium* L. seems justified (Bräuchler & al., 2005, 2006).

Clinopodium vulgare L. [*Satureja vulgaris* (L.) Fritsch; *Calamintha clinopodium* Benth.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Dracocephalum austriacum L.

Distribution: Pe

IUCN category: EN

Remarks: Only known from three locations in Moixeró-Tosa d'Alp mountains (Sáez & al., 2015; unpubl. data).

Dracocephalum ruyschianum L.

Distribution: Pa

IUCN category: DD

Remarks: Recently found in Aran valley by M. Guardiola (pers. comm.).

Galeopsis angustifolia Hoffm. [*G. ladanum* subsp. *angustifolia* (Hoffm.) Celak.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Galeopsis ladanum L.

Distribution: Pa Pc Pe Ppe Ae O Cn

IUCN category: LC

Remarks: Intermediate specimens between *G. ladanum* and *G. pyrenaica*, which probably are of hybrid origin, can be found in the Pyrenees.

Galeopsis pyrenaica Bartl. [*G. ladanum* var. *pyrenaica* (Bartl.) O. Bolòs & Vigo]

Distribution: Subendemic. Pa Pc Pe Ppc Ppe O R Cn

IUCN category: LC

Remarks: The morphological plasticity exhibited by this species is remarkable, and on this basis several infraspecific variants [var. *angustifolia* and var. *filholiana* (Timb.) O. Bolòs & Vigo] were recognised (Bolòs & Vigo, 1996). The taxonomic status of these varieties is questionable.

Galeopsis segetum Neck.

Distribution: Pa Cn

IUCN category: LC

Remarks: Two varieties [var. *aranensis* O. Bolòs & Vigo and var. *brevifolia* (Willk.) O. Bolòs & Vigo] were recognised by Bolòs & Vigo (1996) but apparently no clear discontinuities exist to support the recognition of discrete variants.

Galeopsis tetrahit L. subsp. *tetrahit*

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Glechoma hederacea L.

Distribution: Pa Pe Ppe Ae O Cn [Cc]

IUCN category: LC

Hyssopus officinalis L. [*H. officinalis* subsp. *aristatus* (Godr.) Briq.; *H. officinalis* subsp. *canescens* (DC.) Nyman]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O

IUCN category: LC

Lamium album L. subsp. *album*

Distribution: Pc Pe Ppe

IUCN category: LC

Lamium amplexicaule L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lamium flexuosum Ten.*Distribution:* Pe Ppe Ae O R Cn Cc*IUCN category:* LC***Lamium galeobdolon*** (L.) Crantz subsp. *argentatum* (Smejkal) J. Duvign.*Non-native:* N*Distribution:* Ppe Ae Cn*Remarks:* A garden escape recently found in Ripollès, Berguedà and Maresme counties (Aymerich, 2020a; Guardiola & Petit, 2020).***Lamium galeobdolon*** (L.) Crantz subsp. *montanum* (Pers.) Hayek [*L. galeobdolon* auct.]*Distribution:* Pa Pc Pe Ppe Ae O [Cn]*IUCN category:* LC***Lamium hybridum*** Vill.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Lamium maculatum*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Lamium purpureum*** L.*Distribution:* Pa Pc Pe Ppc Ppe S O Cn*IUCN category:* LC***Lavandula angustifolia*** Mill.*Non-native:* C*Distribution:* Ppe Ae*Remarks:* First report as a garden scape in Berga (Aymerich, 2020a); later found in Ribes de Freser.***Lavandula dentata*** L.*Non-native:* N*Distribution:* R Cn Cc Cs*Remarks:* This species is naturalised in Maresme county (Guardiola & Petit, 2020).***Lavandula latifolia*** Medik.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Lavandula pedunculata (Mill.) Cav. [*L. stoechas* subsp. *pedunculata* (Mill.) Rozeira]

Distribution: [+Cn] Cc

IUCN category: LC

Remarks: Not found recently in Collserola mountain (Aymerich & Sáez, 2015).

Lavandula pyrenaica DC. [*L. angustifolia* Mill. subsp. *pyrenaica* (DC.) Guinea]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cc Cs

IUCN category: LC

Remarks: Morphological, molecular and phytochemical data (Moja & al., 2015; Passalacqua & al., 2017) suggest that *L. angustifolia* subsp. *pyrenaica* is best treated as a distinct species.

Lavandula stoechas L. subsp. *stoechas*

Distribution: Pc Pe Aw O R Cn Cc

IUCN category: LC

Lavandula ×aurigerana Mailho [*L. latifolia* × *L. pyrenaica*]

Distribution: Pe Ppc Ppe Ae Cs

Lavandula ×cadevallii Sennen [*L. pedunculata* × *L. stoechas*]

Distribution: Cn Cc

Leonotis leonurus (L.) R. Br.

Non-native: C

Distribution: Cn

Remarks: Reported from Barcelona (Casasayas, 1989).

Leonurus cardiaca L.

Non-native: C

Distribution: +Pa +Pc +O +Cn +Cc

Remarks: Formerly cultivated and sometimes casual; its current presence is unclear.

Lycopus europaeus L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Marrubium alysson L.

Distribution: S [+Cn] Cs

IUCN category: LC

Marrubium supinum L.

Distribution: Cc Cs

IUCN category: LC

Marrubium vulgare L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Marrubium* × *bastetanum*** Coincy [*M. supinum* × *M. vulgare*]*Distribution:* Cc Cs***Melissa officinalis*** L.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs***Melittis melissophyllum*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw O Cn*IUCN category:* LC***Mentha aquatica*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Mentha arvensis*** L.*Distribution:* Pa Pc Pe Ppe O*IUCN category:* LC***Mentha cervina*** L. [*Preslia cervina* (L.) Fresen.]*Distribution:* R ?Cn*IUCN category:* NT***Mentha longifolia*** (L.) Huds.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs*IUCN category:* LC***Mentha pulegium*** L.*Distribution:* Pe Ppc Ppe Aw S O R Cn Cc Cs*IUCN category:* LC***Mentha spicata*** L.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs***Mentha suaveolens*** Ehrh*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Mentha ×canescens Roth [*M. aquatica* × *M. suaveolens*]

Distribution: Cs

Mentha ×gracilis Sole [*M. arvensis* × *M. spicata*]

Non-native: C

Distribution: Cc

Remarks: A garden escape reported from Gavà, Baix Llobregat (González & al., 2016).

Mentha ×piperita L. [*M. aquatica* × *M. spicata*]

Non-native: N

Distribution: S Cc

Mentha ×rotundifolia (L.) Huds. [*M. longifolia* × *M. suaveolens*]

Distribution: Pa Pe O Cs

Micromeria graeca (L.) Benth. subsp. ***graeca*** [*Satureja graeca* L. subsp. *graeca*]

Distribution: R Cn Cc Cs

IUCN category: LC

Nepeta cataria L.

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Nepeta latifolia DC. [*N. nuda* subsp. *latifolia* (DC.) O. Bolòs & Vigo]

Distribution: Subendemic. Pc Pe Ppc Ppe

IUCN category: LC

Nepeta nepetella subsp. ***aragonensis*** (Lam.) Nyman [*N. nepetella* subsp. *amethystina* (Poir.) Briq.; *N. nepetella* subsp. *cordifolia* (Willk.) Ubers & Valdés]

Distribution: S O Cn Cc Cs

IUCN category: LC

Remarks: Probably adventive in Cn and O.

Nepeta nepetella L. subsp. ***nepetella***

Distribution: Pc Pe Ppe ?Cn Cc Cs

IUCN category: LC

Remarks: Listed for Tarragona province without precise location (Aedo, 2010). Old reports for O are based on confusion with *N. nepetella* subsp. *aragonensis*.

Nepeta racemosa Lam.

Non-native: C

Distribution: Pe

Remarks: Found in suburban areas in Cerdanya plain (Aymerich, 2019).

Nepeta tuberosa L. [*N. tuberosa* subsp. *reticulata* (Desf.) Maire]*Distribution:* Cs*IUCN category:* CR*Remarks:* Only a single population is currently known in Ports massif (Aymerich & Sáez, 2021a).***Origanum majorana*** L.*Non-native:* C*Distribution:* Cc*Remarks:* Cultivated and occasionally escaped, but poorly documented; a single occurrence is known, from Esparreguera (Baix Llobregat) (Casasayas, 1989).***Origanum vulgare*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Two subspecies, namely subsp. *vulgare* and subsp. *virens* (Hoffmanns. & Link) Bonnier & Layens, were reported from our area (Morales, 2010c). However, distinction between both taxa is often unclear and no clear discontinuities have been detected to support the recognition of discrete entities in northeastern Iberian Peninsula.***Perilla frutescens*** (L.) Britton*Non-native:* C*Distribution:* O Cn*Remarks:* A garden escape reported from Barcelona area and Castellfollit de la Roca (Garrotxa) (Casasayas, 1989).***Phlomis fruticosa*** L.*Non-native:* C*Distribution:* R Cn Cc***Phlomis herba-venti*** L.*Distribution:* ?Pc Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Phlomis lychnitis*** L.*Distribution:* Ppc Ae Aw S R Cn Cc Cs*IUCN category:* LC***Phlomis purpurea*** L.*Non-native:* C*Distribution:* Cn Cc

Prunella grandiflora (L.) Scholler [*P. grandiflora* subsp. *pyrenaica* (Gren. & Godr.) A. Bolòs & O. Bolòs]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Morales (2010d) discussed the variation in this species but refrained from accepting infraspecific taxa.

Prunella hyssopifolia L.

Distribution: Ppc R Cs

IUCN category: LC

Prunella laciniata (L.) L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Prunella vulgaris L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Prunella* × *bicolor Beck [*P. grandiflora* × *P. laciniata*]

Distribution: Pc Ppc Ppe

Prunella* × *codinae Sennen [*P. hyssopifolia* × *P. laciniata*]

Distribution: R Cn

Prunella* × *surrecta Dumort. [*P. grandiflora* × *P. vulgaris*]

Distribution: Pe Ppe Ae

Prunella* × *intermedia Link [*P. laciniata* × *P. vulgaris*]

Distribution: Pa Ppe Cn

Pseudodictamnus hirsutus (Willd.) Salmaki & Siadati [*Ballota hirsuta* (Willd.) Benth.]

Non-native: C

Distribution: +Cn Cs

Remarks: See Siadati & al. (2018) for taxonomy.

Salvia aethiopsis L.

Distribution: Ppe Aw Cc Cs

IUCN category: DD

Remarks: Its native status is uncertain.

Salvia fruticosa* Mill.Non-native:* C*Distribution:* R Cc*Remarks:* Reported from Castelló d'Empúries (Vayreda, 1902) and collected in Monistrol (Bages) by J. Cuatrecasas (MAF).***Salvia glutinosa* L.***Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Salvia hispanica* L.***Non-native:* C*Distribution:* Pc Pe Ppc Ppe Ae Cn Cc*Remarks:* First reports from Santa Coloma de Cervelló, Baix Llobregat (Gómez & al., 2016) and upper Segre and Llobregat basins (Aymerich, 2017d), respectively. This species is increasingly observed as it may be in naturalisation process.***Salvia lavandulifolia* subsp. *gallica* W. Lippert** [*S. officinalis* var. *gallica* (W. Lippert) O. Bolòs & Vigo]*Non-native:* C*Distribution:* Cn*Remarks:* There are no natural populations of this taxon in the Iberian Peninsula (Bolòs & Vigo, 1996; Sáez, 2010a); see also Aymerich & Sáez (2021c).***Salvia lavandulifolia* Vahl subsp. *lavandulifolia*** [*S. officinalis* subsp. *lavandulifolia* (Vahl) Cuatrec.; incl. *S. lavandulifolia* subsp. *pyrenaeorum* Lippert; *S. officinalis* var. *pyrenaeorum* (Lippert) O. Bolòs & Vigo]*Distribution:* Ppc Ae Aw S Cc Cs*IUCN category:* LC*Remarks:* According to Sáez (2010a), the morphological characters given for *S. lavandulifolia* subsp. *pyrenaeorum* Lippert [*S. officinalis* var. *pyrenaeorum* (Lippert) O. Bolòs & Vigo] fall within the range of variation observed in *S. lavandulifolia* subsp. *lavandulifolia*.***Salvia lavandulifolia* subsp. *vellerea* (Cuatrec.) Rivas Goday & Rivas Mart.** [*S. officinalis* var. *trichostachya* (Font Quer) O. Bolòs & Vigo]*Distribution:* Aw Cc Cs*IUCN category:* LC***Salvia leucantha* Cav.***Non-native:* C*Distribution:* Cs*Remarks:* This species, which was observed in 2013 (S. Cardero in biodiversidadvirtual.org), persists in a place where it has been formerly cultivated.

Salvia microphylla Kunth*Non-native:* C*Distribution:* Ae Aw Cn Cc Cs*Remarks:* Escaped or persistent after cultivation. Most records are old.***Salvia officinalis*** L.*Non-native:* C*Distribution:* Aw O R Cn*Remarks:* Usually escaped or persistent after cultivation.***Salvia pratensis*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Salvia rosmarinus*** Spenn. [*Rosmarinus officinalis* L.]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Based on a wide-scale phylogenetic study, in addition to taxonomic, morphological, and practical considerations, Drew & al. (2017) proposed a new circumscription of *Salvia* L., including the genus *Rosmarinus* L. among other small genera (*Dorystaechas* Benth., *Meriandra* Benth., *Perovskia* Kar. and *Zhumeria* Rech. fil. & Wendelbo).***Salvia sclarea*** L.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Salvia splendens*** Roem. & Schult. [*S. splendens* Wied-Neuw., nom. inval.]*Non-native:* C*Distribution:* Cn*Remarks:* A garden escape formerly reported from Maresme and Vallès Oriental (Casasayas, 1989).***Salvia sylvestris*** L. [*S. nemorosa* L.]*Non-native:* N*Distribution:* Pc*Remarks:* Three populations are known in the Pyrenees in Pallars Sobirà and Alt Urgell counties (Sáez & al., 2010; Aymerich, 2020a). This species was probably introduced with grain seed.***Salvia valentina*** Vahl [*S. sylvestris* subsp. *valentina* (Vahl) O. Bolòs & Vigo; *S. sylvestris* var. *barcinonensis* O. Bolòs & Vigo]*Distribution:* Ae Aw R Cn Cc*IUCN category:* VU

Salvia verbenaca L. [incl. *S. verbenaca* var. *controversa* (Ten.) Arcang.; *S. verbenaca* subsp. *horminoides* (Pourr.) Nyman; *S. clandestina* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The name *Salvia verbenaca* is applied here in a broad sense. The species is highly variable in morphology, showing many combinations of characters which are poorly correlated and sometimes connected by intermediates.

Salvia verticillata L.

Non-native: C

Distribution: Ppc Cn Cc

Satureja hortensis L.

Non-native: C

Distribution: O Cn Cc

Satureja innota (Pau) Font Quer [*S. montana* subsp. *innota* (Pau) Font Quer]

Distribution: Cc Cs

IUCN category: LC

Satureja montana L. subsp. *montana*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Satureja ×carolipau G. López [*S. innota* × *S. montana*]

Distribution: Cs

Scutellaria alpina L. subsp. *alpina*

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Scutellaria galericulata L.

Distribution: R Cs

IUCN category: EN

Scutellaria minor Huds.

Distribution: Pa

IUCN category: DD

Remarks: Coste & Soulié (1914) reported this species from Les. This species also occurs in Fos, in French territory close to Pa boundary.

Sideritis bubanii Font Quer [*S. hirsuta* subsp. *bubanii* (Font Quer) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Subendemic. Pc Pe Ppe

IUCN category: NT

Sideritis endressii Willk. [*S. hirsuta* subsp. *emporitana* Cadevall; *S. ruscinonensis* Timb.-Lagr.]

Distribution: Subendemic. Pe R Cn Cc

IUCN category: LC

Remarks: This species seems to hybridise with *S. hirsuta* wherever they co-occur.

Sideritis fruticulosa Pourr. subsp. ***cavanillesii*** (Lag.) R. Roselló, P.P. Ferrer & J.B. Peris [*S. cavanillesii* Lag.; *S. scordioides* subsp. *cavanillesii* (Lag.) Nyman]

Distribution: Ppc Aw S Cs

IUCN category: LC

Remarks: *Sideritis fruticulosa* has been regarded as comprising four subspecies (Roselló & al., 2018b). Each of the four species has a consistent morphology and distribution.

Sideritis fruticulosa subsp. ***ferreriana*** R. Roselló & J.B. Peris [*S. scordioides* subsp. *cavanillesii* auct., non Lag.]

Distribution: S

IUCN category: LC

Remarks: A recently described taxon (Roselló & al., 2018b) whose detailed distribution is poorly known.

Sideritis fruticulosa subsp. ***tarraconensis*** (O. Bolòs & Vigo) R. Roselló, P.P. Ferrer & J.B. Peris [*S. scordioides* var. *tarraconensis* O. Bolòs & Vigo]

Distribution: Subendemic. Cc Cs

IUCN category: LC

Sideritis hirsuta L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sideritis hyssopifolia L. [incl. *S. crenata* Lapeyr.; *S. aranensis* (Font Quer) Rivera & Obón]

Distribution: Pa Pc Pe Ppc Ppe Cs

IUCN category: LC

Remarks: Extremely variable, showing many combinations of characters which are poorly correlated and sometimes connected by intermediates. The taxonomic identity of populations from Cs is still unclear.

Sideritis ilicifolia Willd. [*S. spinulosa* subsp. *ilicifolia* (Willd.) O. Bolòs & Vigo; incl. *S. ilicifolia* subsp. *cardoana* Obón & Rivera]

Distribution: Subendemic. Ppc Aw S Cc Cs

IUCN category: LC

Remarks: Intermediate specimens between *S. ilicifolia* and *S. spinulosa* are common in southern Catalonia (Baix Ebre and Montsià).

Sideritis montana Willd. [*S. montana* subsp. *ebracteata* (Asso) Murb.]

Distribution: Pa Pe Ppc Cn Cc Cs

IUCN category: NT

Remarks: Its distribution is sporadic, possibly man-mediated; most reports are old.

Sideritis pungens Benth. [*S. linearifolia* auct., non Lam.]

Distribution: Cc Cs.

IUCN category: LC

Remarks: Reported by Obón & Rivera (1994) and BDBC. Pyrenean reports from Serra de Sant Gervàs (Ppc) and its surroundings (Perdigó, 1979) require confirmation.

Sideritis romana L.

Distribution: Pe Ppc ?Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Sideritis spinulosa Asso subsp. *subspinosa* (Cav.) Molero [*S. subpinosa* Asso]

Distribution: Cc Cs

IUCN category: LC

Remarks: See Crespo & Mateo (2010) for taxonomy.

Sideritis tragoriganum Lag. subsp. *juryi* (Peris, Stübing & Figuerola) M.B. Crespo & Mateo

Distribution: Cs

IUCN category: DD

Remarks: See Crespo & Mateo (2010) for taxonomy.

Sideritis* × *baluei Font Quer [*S. ilicifolia* × *S. fruticulosa* subsp. *cavanillesii*]

Distribution: Aw

Remarks: See Roselló & al. (2018) for taxonomy.

Sideritis* × *costae Font Quer [*S. hirsuta* × *S. ilicifolia*; *S. ×cadevallii* Font Quer]

Distribution: Aw Cc

Sideritis* × *difficilis Font Quer [*S. bubanii* × *S. hirsuta*]

Distribution: Ppe

Sideritis* × *llenasi Font Quer [*S. fruticulosa* subsp. *cavanillesii* × *S. tragoriganum* subsp. *juryi*]

Distribution: Cs

Sideritis* × *pertegasii R. Roselló, P.P. Ferrer, Gómez Nav., E. Laguna & J.B. Peris [*S. spinulosa* subsp. *subspinosa* × *S. tragoriganum* subsp. *juryi*]

Distribution: Cs

Remarks: See Roselló & al. (2018) for taxonomy.

Sideritis ×valentina Sennen [*S. hirsuta* × *S. tragoriganum* subsp. *juryi*]*Distribution*: Cs*Remarks*: See Ferrer-Gallego & al. (2017) for taxonomy.***Stachys alpina*** L.*Distribution*: Pa Pc Pe Ppe O Cn*IUCN category*: LC***Stachys annua*** L.*Distribution*: Pc Pe Ppc Ae Aw O R Cn*IUCN category*: LC***Stachys arvensis*** (L.) L.*Distribution*: Pe O R Cn Cc*IUCN category*: LC***Stachys brachyclada*** De Noé*Distribution*: R +Cc*IUCN category*: NT*Remarks*: Not found recently in Serra de Vandellòs (Cc) (Font Quer, 1920)***Stachys byzantina*** K. Koch*Non-native*: N*Distribution*: Pc Ppe Ae Aw R Cn Cc*Remarks*: It was also reported from a location (Ulldecona reservoir) close to the boundary of Cs (Aparicio, 2003; Royo, 2006). Most populations are located close to residential areas.***Stachys heraclea*** All.*Distribution*: Pc Pe Ppc Ppe Ae Aw O Cc Cs*IUCN category*: LC***Stachys maritima*** Gouan*Distribution*: R +Cn Cc*IUCN category*: EN*Remarks*: Blanché & al. (2010) documented a population decline since early 20th century.***Stachys ocymastrum*** (L.) Briq.*Distribution*: Aw Cn Cc Cs*IUCN category*: LC***Stachys palustris*** L.*Distribution*: Pe Ppe Ae O R Cn*IUCN category*: LC

Stachys recta L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Stachys sylvatica*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC***Teucrium aragonense*** Loscos & J. Pardo [*T. polium* subsp. *aragonense* (Loscos & J. Pardo) Rivas Goday & Borja]*Distribution:* Subendemic. Pc Pe Ppc Ppe Aw S ?R Cc Cs*IUCN category:* LC*Remarks:* Its presence in R (which is not considered in Catalan floras) is based upon a report for Figueres (Navarro, 2010).***Teucrium aureum*** Schreb. subsp. *aureum* [*T. polium* subsp. *aureum* (Schreb.) Arcang.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Teucrium botrys*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Teucrium campanulatum*** L.*Distribution:* S*IUCN category:* CR*Remarks:* Known from a pond in Seròs, Segrià (Pedrol & Conesa, 2009); also reported from Puig de la Nau (northern Castelló Province) close to the boundary of Cs (Royo, 2006).***Teucrium capitatum*** L. subsp. *capitatum* [*T. polium* subsp. *capitatum* (L.) Arcang.]*Distribution:* Pc Ppc Ppe Aw S ?Cn Cc Cs*IUCN category:* LC*Remarks:* Some specimens from Ppc and Cc show morphological features that suggest the occurrence of events of genetic introgression between *T. capitatum* and *T. polium*.***Teucrium chamaedrys*** L. [*T. chamaedrys* subsp. *pinnatifidum* (Sennen) Rech. fil.; *T. chamaedrys* subsp. *germanicum* (F. Hermann) Rech. fil.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Teucrium dunense Sennen [*T. polium* subsp. *dunense* (Sennen) Sennen]

Distribution: R Cn Cc Cs

IUCN category: LC

Remarks: Intermediate specimens between *T. dunense* and *T. capitatum* subsp. *capitatum*, probably are of hybrid origin, can be found in Cc.

Teucrium fruticans L.

Non-native: C

Distribution: R Cn Cc Cs

Teucrium gnaphalodes L'Hér. [*T. polium* subsp. *gnaphalodes* (L'Hér.) O. Bolòs & Vigo; *T. gnaphalodes* var. *ilerdense* Sennen]

Distribution: S

IUCN category: LC

Teucrium montanum L. subsp. *montanum*

Distribution: Pa Pc

IUCN category: LC

Teucrium polium L. subsp. *polium*

Distribution: ?Pc Pe Ppc Ppe Ae Aw ?S Q R Cn Cc Cs

IUCN category: LC

Remarks: Its detailed distribution area is not clearly defined at present, because it has often been confused with some forms of *T. aragonense*.

Teucrium pseudochamaepitys L.

Distribution: Cc Cs

IUCN category: LC

Teucrium pyrenaicum subsp. *guarensis* P. Monts. [*T. pyrenaicum* var. *catalaunicum* Sennen]

Distribution: Subendemic. ?Pa Pc Pe Ppc Ppe Ae Aw Q R Cn Cc

IUCN category: LC

Teucrium pyrenaicum L. subsp. *pyrenaicum*

Distribution: Pa Pc

IUCN category: LC

Teucrium scordium L.

Distribution: Ae S O R Cn Cc

IUCN category: LC

Remarks: Bolòs & Vigo (1996) suggested that most populations are referable to subsp. *scordioides* (Schreb.) Maire & Petitm. However, according to Navarro (2010) the Iberian plants are referable to subsp. *scordium*.

Teucrium scorodonia L.

Distribution: Pa Pc Pe Ppe Ae Q R Cn Cc

IUCN category: LC

Teucrium ×contejeani Giraudias [*T. montanum* subsp. *montanum* × *T. pyrenaicum* subsp. *pyrenaicum*]

Distribution: Pa Pc

Teucrium ×mailhoi nothosubsp. ***orientalis*** I. Soriano & Aymerich [*Teucrium aureum* subsp. *aureum* × *T. pyrenaicum* subsp. *guarensis*]

Distribution: Pe

Thymus drucei Ronniger [*Th. praecox* Opiz subsp. *britannicus* (Ronniger) Holub]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: See Aymerich & Sáez (2015) for its distribution.

Thymus fontqueri (Jalas) Molero & Rovira [*T. serpyllum* subsp. *fontqueri* (Jalas) O. Bolòs & Vigo]

Distribution: Ppc Ppe Cc

IUCN category: LC

Thymus loscosii Willk.

Distribution: S Cc Cs

IUCN category: NT

Thymus mastichina (L.) L. subsp. *mastichina*

Non-native: C

Distribution: ?S Cn

Thymus nervosus Willk. [*T. serpyllum* subsp. *nervosus* (Benth.) Nyman]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Thymus praecox Opiz subsp. ***polytrichus*** (Borbás) Jalas [*T. serpyllum* subsp. *polytrichus* (Borbás) Briq.]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Thymus pulegioides L. [*T. chamaedrys* Fr., *T. serpyllum* subsp. *alpestris* sensu O. Bolòs & Vigo; *T. serpyllum* subsp. *jaquetianus* (Ronniger) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs

IUCN category: LC

Remarks: According to Bartolucci & al. (2013) *T. froelichianus* Opiz [*T. carniolicus* Déségl., *T. valderius* Ronniger; *T. pulegioides* var. *vestitus* (Lange) Jalas] is a hairy morph of *T. pulegioides*.

Thymus serpyllum subsp. *carolii* Sennen & Ronniger

Distribution: Pc Pe Ppe

IUCN category: LC

Remarks: Further research might be useful to clarify the systematic relationships between Pyrenean plants here treated as *T. serpyllum* subsp. *carolii* and other morphologically similar taxa belonging sect. *Serpyllum*. *Thymus serpyllum* subsp. *carolii* was also named as *T. pseudo-chamaedrys* (Bolòs & Vigo, 1996) and *T. longicaulis* C. Presl (Morales, 2010). However, Pyrenean specimens treated as *T. longicaulis* seem to be better placed within *T. praecox* complex (Bartolucci & Domina, 2014).

Thymus vulgaris subsp. *aestivus* (Willk.) A. Bolòs & O. Bolòs

Distribution: Cs

IUCN category: DD

Remarks: Royo (2006) reported this taxon from southern Cs.

Thymus vulgaris subsp. *palaearensis* (O. Bolòs & Vigo) O. Bolòs & Vigo

Distribution: Subendemic. Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Its taxonomic status is uncertain and requires further study. This taxon was included within the variability of the polymorphic *T. vulgaris* subsp. *vulgaris* without any taxonomic designation (Morales, 2010). Bartolucci & al. (2013) regarded *T. vulgaris* subsp. *palaearensis* as an altitudinal ecotype occurring in the Pyrenees.

Thymus vulgaris L. subsp. *vulgaris*

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Thymus willkommii Ronniger [*T. serpyllum* subsp. *willkommii* (Ronniger) Font Quer]

Distribution: Subendemic. Cc Cs

IUCN category: LC

Thymus zygis L. subsp. *zygis*

Distribution: S

IUCN category: LC

Thymus drucei* × *T. vulgaris

Remarks: Reported without precise location from Lleida province (Morales, 2010b).

Thymus xnuriensis Sennen & Pau [*T. nervosus* × *T. praecox* subsp. *polytrichus*]

Distribution: Pe

Thymus xrubioi Font Quer [*T. loscosii* × *T. vulgaris* subsp. *vulgaris*]

Distribution: Cc

Thymus xviteki R. Morales [*T. fontqueri* × *T. vulgaris* subsp. *vulgaris*]

Distribution: Ppc

Remarks: This taxon was described on the basis of specimens collected in Serra de Montsec (Morales, 2009).

Vitex agnus-castus L.

Distribution: S R Cn Cc Cs

IUCN category: LC

Westringia fruticosa (Willd.) Druce

Non-native: C

Distribution: Cc

Remarks: Found in Tamarit, Tarragonès (S. Torres in biodiversidadvirtual.org).

Ziziphora acinos (L.) Melnikov subsp. ***acinos*** [*Clinopodium acinos* (L.) Kuntze subsp. *acinos*; *Acinos arvensis* (Lam.) Dandy subsp. *arvensis*; *Satureja acinos* (L.) Scheele subsp. *acinos*]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Based on the close morphological relationship between *Acinos* Mill. and *Ziziphora* L. (López & Bayer, 1988) and lack of a clear separation in their phylogeny, forming a group separate from *Clinopodium* s.str. (Bräuchler & al. 2010), *Acinos* and *Ziziphora* should be merged (See Bartolucci & al., 2019).

Ziziphora granatensis subsp. ***alpina*** (L.) Bräuchler & Gutermann [*Clinopodium alpinum* (L.) Kuntze; *Acinos alpinus* (L.) Moench; *Satureja alpina* (L.) Scheele]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Ziziphora granatensis (Boiss. & Reut.) Melnikov subsp. ***granatensis*** [*Clinopodium alpinum* (L.) Kuntze subsp. *meridionale* (Nyman) Govaerts; *Satureja acinos* subsp. *meridionalis* (Nyman) O. Bolòs & Vigo]

Distribution: Cc Cs

IUCN category: LC

Ziziphora graveolens (M. Bieb.) Melnikov [*Clinopodium graveolens* (M. Bieb.) Kuntze; incl. *C. graveolens* subsp. *rotundifolium* (Pers.) Govaerts; *Acinos rotundifolius* Pers.; *Satureja rotundifolia* (Pers.) Briq.]

Distribution: Ppc Cs

IUCN category: DD

Remarks: So far this species is known only from Montsec mountains area and Ports massif (see Sáez & al., 2010).

PHRYMACEAE

Erythranthe guttata (DC.) G.L. Nesom [*Mimulus guttatus* DC.]

Non-native: N

Distribution: Aw

Remarks: Known from an artificial pond (estany de l'Agulla, Manresa and Sant Fruitós de Bages) (ICHN Bages, 2018).

PAULOWNIACEAE

Paulownia tomentosa (Thunb.) Steud.

Non-native: C

Distribution: Pc Cn

Remarks: Recently grown in plantations for its wood. Reported as casual in Ppe (Aymerich, 2015a) and Cn (Verloove & Aymerich, 2020). Other species of the genus may also be cultivated in Pc, Cs and S.

OROBANCHACEAE

Bartsia alpina L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Bellardia trixago (L.) All. [*Bartsia trixago* L.]

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: For generic delineation see Uribe-Convers & Tank (2016).

Bellardia viscosa (L.) Fisch. & C.A. Mey. [*Parentucellia viscosa* (L.) Caruel]

Distribution: O R Cn Cc

IUCN category: LC

Boulardia latisquama F.W. Schultz [*Orobanche latisquama* (F. W. Schultz) Batt.]

Distribution: Ae Aw S Cn Cc Cs

IUCN category: LC

Euphrasia alpina Lam. subsp. ***alpina*** [*E. alpina* subsp. *pulchra* (Sennen) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe O

IUCN category: LC

Euphrasia hirtella Reut.

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc

IUCN category: LC

Remarks: A single report for Cs (Port massif, font de la Ferrera, BDBC) is probably due to confusion with *E. stricta*.

Euphrasia minima DC. [*E. minima* subsp. *masclansii* O. Bolòs & Vigo; *E. minima* subsp. *sicardii* (Sennen) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: Reports from Ports massif (Cs) are probably referable to *E. stricta* (Royo & al., 2010).

Euphrasia nemorosa (Pers.) Wallr. [*E. officinalis* L. var. *nemorosa* Pers.]

Distribution: Pa Pe O

IUCN category: LC

Euphrasia officinalis L. subsp. ***rostkoviana*** (Hayne) F. Towns. [*E. montana* Jord.]

Distribution: Pa Pc Pe

IUCN category: LC

Euphrasia pectinata Ten. [*E. stricta* var. *pectinata* (Ten.) O. Bolòs & Vigo]

Distribution: Pc Pe Ppc Ppe Ae O Cn ?Cc ?Cs

IUCN category: LC

Remarks: Reports from southern Catalonia (Cc and Cs) require confirmation.

Euphrasia salisburgensis Hoppe [*E. minima* subsp. *sicardii* (Sennen) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppc Ppe O Cn Cs

IUCN category: LC

Euphrasia stricta J.F. Lehm

Distribution: Pa Pe Ppe O Cn ?Cc Cs

IUCN category: LC

Euphrasia ×favratii Wettst. [*E. salisburgensis* × *E. stricta*]

Distribution: Pe

Euphrasia hirtella* × *E. salisburgensis*Distribution:* Pe*Remarks:* Its distribution in the studied area is probably more widespread than currently documented.***Euphrasia* × *luciae* Sennen [*E. alpina* × *E. stricta*]***Distribution:* Ae***Euphrasia minima* × *E. salisburgensis****Distribution:* Pe***Euphrasia* × *mixta* Gremlí [*E. hirtella* × *E. officinalis* subsp. *rostkoviana*]***Distribution:* Pe***Euphrasia minima* × *E. stricta****Distribution:* Pe***Lathraea clandestina* L.***Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Lathraea squamaria* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC***Melampyrum catalaunicum* Freyn [*M. nemorosum* subsp. *catalaunicum* (Freyn) Beauverd]***Distribution:* O Cn*IUCN category:* NT*Remarks:* This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area (Pyrenees and western Alps, see Tison & Foucault, 2014) is outside the geographical coverage considered in this checklist. According to the latter authors the polymorphism of this species explains that several authors have recognised several taxa: *M. catalaunicum* and *M. vaudense* (Ronniger) Soó, based on variations in calyx hairiness which correspond to phenotypes (often sympatric) connected by a continuum and without any other difference.***Melampyrum cristatum* L. [*M. cristatum* subsp. *ronnigeri* (Poeverl.) Ronniger]***Distribution:* Pc Pe Ppc Ppe Aw*IUCN category:* LC***Melampyrum pratense* subsp. *latifolium* Schübl. & G. Martens [*M. pratense* subsp. *oligocladum* (Beauverd) Soó; *M. pratense* subsp. *vulgatum* auct.]***Distribution:* Pa Pc Pe Ppe O Cn*IUCN category:* LC

Melampyrum pratense L. subsp. ***pratense*** [*M. pratense* subsp. *alpestre* Ronniger, nom. illeg.; *M. pratense* subsp. *vulgatum* Schübl. & G. Martens, nom. inval.]

Distribution: Pa Pc Pe Ppe O

IUCN category: LC

Melampyrum sylvaticum L. subsp. ***sylvaticum***

Distribution: Pa Pc

IUCN category: NT

Remarks: Reports for eastern Pyrenees are based on confusion with *M. pratense* in a broad sense.

Odontites cebennensis Coste & Soulié [*O. lanceolatus* subsp. *olotensis* (Cadevall) O. Bolòs & Vigo]

Distribution: Subendemic. Pc Pe Ppc Ppe Ae O

IUCN category: LC

Remarks: Intermediate specimens between *O. cebennensis* and *O. vernus* were reported from Pe by Vigo (1983).

Odontites longiflorus (Lam.) G. Don [*Macrosyringion longiflorum* (Lam.) Rothm.]

Distribution: Pc Pe Ppc Ae Aw S Cc Cs

IUCN category: LC

Remarks: *Macrosyringion* was reincluded within *Odontites* by Pinto-Carrasco & al. (2017).

Odontites luteus (L.) Clairv. subsp. ***luteus***

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Odontites pyrenaicus (Bubani) Rothm. subsp. ***pyrenaicus*** [*O. lanceolatus* subsp. *pyrenaicus* (Bubani) O. Bolòs]

Distribution: Subendemic. Pc Ppc Ppe

IUCN category: LC

Odontites recordonii Burnat & Barbey [*O. kaliformis* auct.]

Distribution: Pe Ppc Aw S Cc Cs

IUCN category: LC

Odontites vernus subsp. ***serotinus*** Corb.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Pinto-Carrasco & al. (2017) accepted this taxon, although it was not recognised as a separate taxon from typical *O. vernus* by Rico (2009).

Odontites vernus (Bellardi) Dumort. subsp. ***vernus****Distribution:* Pa Pc Pe Ppe Ae Cn Cs*IUCN category:* LC***Odontites viscosus*** (L.) Clairv. subsp. ***viscosus****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Orobanche alba*** Willd.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Orobanche amethystea*** Thuill.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Orobanche artemisiae-campestris*** Gaudin*Distribution:* Pa Pc Pe Ppc*IUCN category:* LC***Orobanche bartlingii*** Griseb.*Distribution:* Pa*IUCN category:* DD*Remarks:* According to Pujadas (2013a) Pyrenean reports of *O. bartlingii* (Carlón & al., 2003; 2008; 2009) should be referred to *O. alsatica* Kirschl. However, according to O. Sánchez Pedraja (pers. comm., July 2015; Sánchez Pedraja & al., 2020) reports of *O. alsatica* from Pa are based on confusion with *O. bartlingii*.***Orobanche caryophyllacea*** Sm.*Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Orobanche castellana*** Reut.*Distribution:* Cc*IUCN category:* DD*Remarks:* Reported from Prades mountains (Molero & Pyke, 2019). Its distribution is probably more widespread than currently documented.***Orobanche cernua*** L.*Distribution:* S R Cc Cs*IUCN category:* LC***Orobanche clausonis*** Pomel*Distribution:* Ppc Cn Cc Cs*IUCN category:* LC

Orobanche crenata Forssk.

Distribution: Pe Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Orobanche elatior Sutton

Distribution: Pa

IUCN category: DD

Remarks: Reported from Pa (near Tredòs) parasitic on *Centaurea scabiosa* (Carlón & al., 2011). This is considered the first definite, reliable Spanish report of the true *O. elatior*.

Orobanche foetida Poir.

Distribution: Cc

IUCN category: EN

Orobanche gracilis Sm. [*O. crinita* auct.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Reports of *O. variegata* Wallr. are probably referable to *O. gracilis* (see Pujadas, 2001)

Orobanche haenseleri Reut.

Distribution: Pa Pc Pe Ppc Cn

IUCN category: LC

Orobanche hederæ Duby

Distribution: Pa Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Orobanche laserpitii-sileris Jord.

Distribution: Pa Pc

IUCN category: LC

Remarks: This species has often been confused with *O. bartlingii*.

Orobanche leptantha Pomel [*O. elatior* subsp. *icterica* (Pau) A. Pujadas; *O. icterica* Pau; *O. major* auct., non L.]

Distribution: Ppc S Cn Cc Cs

IUCN category: LC

Remarks: In this treatment *O. icterica* is regarded as synonym of *O. leptantha*. However, according to Pujadas (2013b) *O. leptantha* Pomel and *O. icterica* are not conspecific despite being very close relatives.

Orobanche minor Sm.

Distribution: Pa Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Orobanche picridis F.W. Schultz [*O. artemisiae-campestris* subsp. *picridis* (F.W. Schultz) O. Bolòs, Vigo, Masalles & Ninot]

Distribution: Pa

IUCN category: DD

Remarks: Confirmed only for Pa (Sánchez Pedraja & al., 2020).

Orobanche pubescens D'Urv.

Distribution: R

IUCN category: EN

Remarks: Found near Cadaqués (Alt Empordà), parasitic on *Glebionis segetum* (Pavon & Buison, 2017). Cadevall (1932) previously reported *O. pubescens* from the same area.

Orobanche rapum-genistae Thuill.

Distribution: Pa Pc Pe Ppc ?Ppe O R Cn

IUCN category: LC

Remarks: Specimens from La Vajol (Pe) are referable to var. *bracteosa* Reut. [=subsp. *benthamii* (Timb.-Lagr.) P. Fourn.] (see Pujadas, 2001)

Orobanche reticulata Wallr.

Distribution: ?Pa Pc Pe ?Ppc

IUCN category: LC

Remarks: A report for Sabadell, Vallès (Bolòs & Vigo, 1996) is probably based on confusion with *O. crenata* (Pujadas, 2001).

Orobanche santolinae Loscos & J. Pardo [*O. artemisia-campestris* subsp. *santolinae* (Loscos & J. Pardo) O. Bolòs & Vigo; *O. loricata* subsp. *santolinae* (Loscos & J. Pardo) O. Bolòs & Vigo]

Distribution: Pe Ppc Ppe Aw S Cn Cc

IUCN category: LC

Orobanche teucryi Holandre

Distribution: Pa

IUCN category: DD

Remarks: Confirmed only for Pa (Pujadas, 2001; Sánchez Pedraja & al., 2020). This species was usually confused with *O. alba* (see Pujadas, 2001).

Parentucellia latifolia (L.) Caruel [*Bellardia latifolia* (L.) Cuatrec.]

Distribution: Ppe Ae Aw S R Cn Cc

IUCN category: LC

Remarks: For generic delineation see Uribe-Convers & Tank (2016).

Pedicularis comosa subsp. *asparagoides* (Lapeyr.) P. Fourn. [*P. asparagoides* Lapeyr.]

Distribution: Subendemic. Pe

IUCN category: EN

Remarks: Restricted to Albera and Salines massifs.

Pedicularis comosa L. subsp. *comosa**Distribution:* Pa Pc Pe Ppe Cn*IUCN category:* LC*Remarks:* Reports for Carreu mountain, Ppc (Romo, 1986a) are probably due to confusion with *P. foliosa* subsp. *foliosa* (Sáez & al., 2008).***Pedicularis foliosa*** L. subsp. *foliosa**Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Pedicularis kernerii*** Dalla Torre*Distribution:* Pa Pc*IUCN category:* LC*Remarks:* A report for Pe (Cadevall & Font Quer, 1932, sub *P. rostrata* L.) is probably due to confusion with *P. pyrenaica*.***Pedicularis mixta*** Gren. [*P. pyrenaica* subsp. *lasiocalyx* (Gren.) O. Bolòs & Vigo]*Distribution:* Pa Pc*IUCN category:* LC*Remarks:* Reports from eastern Pyrenees are probably referable to specimens of *P. pyrenaica* with hairy calyx.***Pedicularis praetermissa*** (I. Soriano, Bernal & Sánchez Cuxart) Aymerich & L. Sáez
[*P. pyrenaica* subsp. *praetermissa* I. Soriano, Bernal & Sánchez Cuxart]*Distribution:* Subendemic. Pa Pc*IUCN category:* LC***Pedicularis pyrenaica*** J. Gay*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Remarks:* *Pedicularis x sennenii* Bonati should be included in the synonymy of *P. pyrenaica* (Soriano, 2018).***Pedicularis rosea*** Wulfen subsp. *allionii* (Rchb. fil.) Arcang.*Distribution:* Pa Pc*IUCN category:* NT***Pedicularis sylvatica*** L. subsp. *sylvatica**Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC

Pedicularis tuberosa L.*Distribution*: ?Pa Pc*IUCN category*: VU*Remarks*: An old report for vall de Pa requires confirmation. The presence of *P. tuberosa* in Pe (Ribes valley) should be disregarded as being in all probability due to confusion with other species of the genus (Vigo, 1983).***Pedicularis verticillata*** L. subsp. *verticillata**Distribution*: Pa Pc*IUCN category*: LC***Pedicularis* × *aranensis*** I. Soriano [*P. mixta* × *P. praetermissa*]*Distribution*: Pa*Remarks*: See Soriano (2018) for taxonomy and distribution.***Pedicularis* × *pallidiflora*** I. Soriano [*P. pyrenaica* × *P. tuberosa*]*Distribution*: Pc*Remarks*: See Soriano (2018) for taxonomy and distribution.***Phelipanche arenaria*** (Borkh.) Pomel [*Orobanche arenaria* Borkh.]*Distribution*: Pa Pc Ppc R Cn Cc*IUCN category*: LC***Phelipanche camphorosmae*** Carlón, G. Gómez, M. Láinz, Moreno Mor., Ó. Sánchez & Schneew.*Distribution*: Ppc S*IUCN category*: DD*Remarks*: So far this species is known only from few locations: Balaguer and Salvador (Carlón & al., 2005, 2008) and from Bassella, Alt Urgell (Guardiola & al., 2016).***Phelipanche cernua*** Pomel [*P. inexpectata* Carlón, G. Gómez, M. Láinz, Moreno Mor., Ó. Sánchez & Schneew.; *Orobanche lavandulacea* auct., non Rchb.]*Distribution*: R Cc*IUCN category*: DD*Remarks*: It is a parasite of *Lactuca* described by Carlón & al. (2005) as *Phelipanche inexpectata* and known so far from northeastern Spain and southern France (Carlón & al., 2013).***Phelipanche lavandulacea*** (Rchb.) Pomel [*Orobanche lavandulacea* Rchb.; *O. ramosa* subsp. *mutelii* auct.]*Distribution*: R Cn Cc*IUCN category*: LC*Remarks*: See Pujadas (2001) and Molero & al. (2016) for its distribution.

Phelipanche nana (Reut.) Soják [*Orobanche ramosa* subsp. *nana* (Reut.) Cout.]

Distribution: ?Ppc O R Cn ?Cc ?Cs

IUCN category: LC

Phelipanche portoilicitana (A. Pujadas & M.B. Crespo) Carlón, G. Gómez, M. Laínz, Moreno Mor., Ó. Sánchez & Schneew. [*Orobanche portoilicitana* A. Pujadas & M.B. Crespo]

Distribution: S

IUCN category: DD

Remarks: Currently only known from for Balaguer area and its surroundings (Carlón & al., 2008).

Phelipanche purpurea subsp. *bohémica* (Èelak.) J. Zázvorka

Distribution: Pa Ppe R

IUCN category: DD

Remarks: Reported from Escunhau, Aran valley (Carlón & al., 2008), Lladurs, Solsonès (Guardiola & al., 2016) and Castelló d'Empúries, Alt Empordà (Sánchez Pedraja & al., 2020).

Phelipanche purpurea subsp. *millefolii* (Rchb.) Carlón, G. Gómez, M. Laínz, Moreno Mor., Ó. Sánchez & Schneew.

Distribution: Pc

IUCN category: DD

Remarks: Reported from Esterri de Cardós, Pallars Sobirà (Sánchez Pedraja & al., 2020).

Phelipanche purpurea (Jacq.) Soják subsp. *purpurea* [*Orobanche purpurea* Jacq.]

Distribution: Pa Pc Pe Ppe Ae O Cn

IUCN category: LC

Phelipanche ramosa (L.) Pomel [*Orobanche ramosa* L.]

Non-native: C

Distribution: O Cn Cc

Phelipanche rosmarina (Beck) Banfi, Galasso & Soldano [*Orobanche rosmarina* Beck]

Distribution: Ppc Aw Cn Cc

IUCN category: LC

Remarks: See Carlón & al. (2005) and Molero & al. (2016) for its distribution.

Rhinanthus alectorolophus (Scop.) Pollich

Distribution: Pa Pc Ppe

IUCN category: LC

Remarks: It was firstly reported from Gósol (Ppe) by Vives (1965) but this observation was considered erroneous. Recently, *R. alectorolophus* has been rediscovered in the same area (Aymerich, 2021). It has been also found in Coma de Burg valley (Pallars Sobirà) (Aymerich, 2020b) and Aran valley (M. Guardiola, unpubl. data).

Rhinanthus angustifolius C.C. Gmel.*Distribution:* Pc*IUCN category:* NT*Remarks:* Its distribution in the studied area is more widespread than previously (Sáez & al., 2010) assumed.***Rhinanthus minor*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn*IUCN category:* LC*Remarks:* Occasionally, specimens are found that are intermediate in their characters between *R. minor* and *R. pumilus* and, probably, are of hybrid origin.***Rhinanthus pumilus*** (Sterneck) Pau subsp. *pumilus* [*R. mediterraneus* (Sterneck) Sennen]*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cs*IUCN category:* LC***Tozzia alpina*** L. subsp. *alpina**Distribution:* Pa Pc*IUCN category:* LC**AQUIFOLIACEAE*****Ilex aquifolium*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC**CAMPANULACEAE*****Campanula affinis*** Schult. [*C. speciosa* subsp. *affinis* (Schult.) Font Quer]*Distribution:* Endemic. Ae Cn Cc*IUCN category:* LC***Campanula andorrana*** Braun-Blanq. [*C. jaubertiana* subsp. *andorrana* (Braun-Blanq.)P. Monts.; *C. cochleariifolia* subsp. *andorrana* (Braun-Blanq.) O. Bolòs & Vigo]*Distribution:* Subendemic. Pc Ppe*IUCN category:* NT*Remarks:* The taxonomic distinctiveness of *C. andorrana* as a separate species from *C. jaubertiana* Timb.-Lagr. is supported by morphological and molecular evidence (Roquet & al., 2021).***Campanula cochleariifolia*** Lam.*Distribution:* Pa Pc Pe*IUCN category:* LC

Campanula erinus* L.Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Campanula fastigiata* A. DC.***Distribution:* Ppc Aw S*IUCN category:* NT***Campanula glomerata* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn*IUCN category:* LC*Remarks:* A variable species in which leaf size and shape and the size of corollas were used for delimiting several taxa of uncertain taxonomic value, such as *C. glomerata* subsp. *cervicarioides* (Schult.) Arcang. and *C. glomerata* subsp. *serotina* (Wettst.) O. Schwarz.***Campanula latifolia* L.***Distribution:* Pa Pc Ppc*IUCN category:* NT***Campanula patula* L.***Distribution:* Pa Pc Pe Ppc*IUCN category:* LC*Remarks:* This species shows a considerable variation in the shape and the length of the calyx. Specimens with hairy calyx and more or less denticulate calyx lobes were called subsp. *costae* (Willk.) Fedorov. However, there seems to be a continuous series in character-combinations connecting the extremes.***Campanula persicifolia* L. [*C. persicifolia* subsp. *subpyrenaica* (Timb.-Lagr.) Fed.]***Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC*Remarks:* Reports from Ports massif (Cs) are probably erroneous.***Campanula portenschlagiana* Schult.***Non-native:* N*Distribution:* Pc Ppe O Cn***Campanula precatória* Timb.-Lagr.***Distribution:* Pa Pc*IUCN category:* LC*Remarks:* Its subendemic nature (Sáez & al., 2010) is unclear.

Campanula rapunculoides* L.Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC*Remarks:* An alleged hybrid between *C. rapunculoides* and *C. trachelium* was reported from Boí valley (Carrillo & Ninot, 1992a).***Campanula rapunculus* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Campanula rotundifolia* subsp. *hispanica* (Willk.) O. Bolòs & Vigo [*C. rotundifolia* subsp. *catalanica* (Podlech) O. Bolòs & Vigo]***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC*Remarks:* *Campanula rotundifolia* is an extremely variable species as would be expected from its wide distribution and the diverse habitats where it grow. Both subspecies are sometimes difficult to separate, the diagnostic characters are variable and slight and intermediates are frequent. Moreover, morphologically deviant populations exist within *C. rotundifolia* subsp. *hispanica* in a broad sense.***Campanula rotundifolia* L. subsp. *rotundifolia****Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Campanula scheuchzeri* Vill. [*C. ficarioides* Timb.-Lagr.; *C. scheuchzeri* subsp. *ficarioides* (Timb.-Lagr.) O. Bolòs & Vigo]***Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC*Remarks:* The morphological variation exhibited by *C. scheuchzeri* is remarkable. *Campanula recta* Dulac [*C. serrata* subsp. *recta* (Dulac) Podlech] was accepted by Bolòs & Vigo (1996) and Bolòs & al. (2005). However, intermediate specimens linking *C. recta* and *C. scheuchzeri* are numerous (Vigo, 1983) and no constant morphological features can be used to trace taxa boundaries.***Campanula speciosa* Pourr.***Distribution:* Pc Pe Ppc Ppe O Cc Cs*IUCN category:* LC*Remarks:* This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.***Campanula trachelium* L.***Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC

Jasione crispa (Pourr.) Samp.*Distribution:* Pa Pc Pe Ppc Ppe Cn Cc Cs*IUCN category:* LC*Remarks:* The taxonomic status of plants from Cc and Cs is unclear. Further research on this genus is required to solve the identity of taxa occurring in mountain areas of southern Catalonia. Preliminary studies suggested differences between both populations, and with respect to *J. sessiliflora* Boiss. & Reut. in terms of ploidy level and/or molecular markers (M. Serrano, pers. comm.).***Jasione laevis*** Lam. subsp. *laevis**Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Jasione montana*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn Cc*IUCN category:* LC***Legousia falcata*** (Ten.) Fritsch [*L. scabra* (Lowe) Gamisans]*Distribution:* Pe Ppc Ppe Aw R Cn Cc Cs*IUCN category:* LC*Remarks:* Wahlsteen & Tyler (2019) reduced *L. scabra* to synonym of *L. falcata*.***Legousia hybrida*** (L.) Delarbre*Distribution:* Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Legousia speculum-veneris*** subsp. *pentagonia* (L.) Wahlsteen [*L. pentagonia* (L.) Druce]*Non-native:* C*Distribution:* Cn Cc*Remarks:* Reported from Barcelona (Cn), Poblet and Montsant (Cc) (Casasayas, 1989; Bolòs & Vigo, 1996).***Legousia speculum-veneris*** (L.) Chaix subsp. *speculum-veneris**Distribution:* Ppe O R Cn*IUCN category:* LC*Remarks:* See Wahlsteen & Tyler (2019) for taxonomy.***Lobelia laxiflora*** Kunth subsp. *angustifolia* (A. DC.) Eakes & Lammers*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Barcelona in an urban habitat (Gómez-Bellver & al., 2019a).

Phyteuma charmelii Vill.*Distribution:* Pa Pc Pe Ppe Cc*IUCN category:* LC*Remarks:* Also reported from Fredes (Villaescusa, 1998), close to the boundary of Cs.***Phyteuma globulariifolium*** Sternb. & Hoppe subsp. ***pedemontanum*** (Rich. Schulz)

Greuter, Burdet & G. Long

Distribution: Pe*IUCN category:* LC***Phyteuma hemisphaericum*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Phyteuma orbiculare*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cc Cs*IUCN category:* LC***Phyteuma pyrenaicum*** Rich. Schulz [*P. spicatum* subsp. *pyrenaicum* (Rich. Schulz) A. Bolòs]*Distribution:* Pa Pc*IUCN category:* DD*Remarks:* According to Schneeweiss & al. (2013) *P. pyrenaicum* constitutes a phylogenetically distinct entity. Its distribution in our area is poorly known since this species was subsumed under *P. spicatum*. Most (perhaps all) Pyrenean "*P. spicatum*" with violaceous corollas should be attributed to *P. pyrenaicum*.***Phyteuma spicatum*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* DD***Trachelium caeruleum*** L. subsp. ***caeruleum****Distribution:* Cc Cs*IUCN category:* LC**MENYANTHACEAE*****Menyanthes trifoliata*** L.*Distribution:* Pa Pc ?Pe*IUCN category:* NT*Remarks:* Its presence in Camprodon area (Pe) (Morer, 1879), requires confirmation.

ASTERACEAE***Achillea ageratum* L.**

Distribution: Pe Ppc Ppe Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Remarks: An old report for O requires confirmation.

***Achillea arabica* Kotschy [*A. biebersteinii* Hub.-Mor.]**

Non-native: C

Distribution: Aw

Remarks: A naturalised population was found in Aguilar de Segarra (Anoia) by Soriano (2002); probably vanished.

***Achillea ceretanica* (Sennen) I. Soriano [*A. millefolium* subsp. *ceretanica* (Sennen) O. Bolòs & Vigo]**

Distribution: Subendemic. Pc Pe

IUCN category: NT

Remarks: Endemic to eastern Pyrenees. It is a disjunct member of the *A. millefolium* aggr., closely related to the diploid taxa of the predominantly centre to eastern Asiatic and northern American lineages (Guo & al., 2008).

***Achillea chamaemelifolia* Pourr.**

Distribution: Subendemic. Pc Pe

IUCN category: LC

***Achillea filipendulina* Lam.**

Non-native: C

Distribution: ?Pc Ppe Ae Aw Cc

***Achillea ligustica* All.**

Non-native: N

Distribution: Cn Cs

Remarks: See Guardiola & Petit (2020) for its distribution.

***Achillea maritima* (L.) Ehrend. & Y.-P. Guo [*Otanthus maritimus* (L.) Hoffmanns. & Link]**

Distribution: +Cn Cc [Cs]

IUCN category: EN

Remarks: Few extant native populations persist in Baix Camp and Baix Llobregat (Sáez & al., 2010). This species was introduced in restoration of coastal vegetation in Castelledefels (Cc) and the Ebre Delta (Cs).

Achillea millefolium L.

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw ?S ?O ?R Cn ?Cc ?Cs

IUCN category: LC

Remarks: Soriano & al. (2013) accepted two species within *A. millefolium* (in a broad sense) in the Iberian Peninsula: *A. millefolium* in a strict sense (hexaploid) and *A. monticola* Martrin-Donos (octoploid). However, the latter species was not formally accepted as taxonomically distinct by Soriano (2019) since no clear morphological discontinuities exist between cytotypes. Further studies are needed to clarify the distribution of both species, which are difficult to distinguish based on morphological characters. Tetraploid plants were documented from Alt Urgell (Ppe) by Soriano (in www.recercacerdanya.org/publicacions/ker/revista-ker-14/), which perhaps could correspond to a non-native species: *A. collina* (Wirtg.) Heimerl.

Achillea monticola Martrin-Donos

Distribution: Pa Pc Pe Ppc Ppe Ae Aw ?S ?O ?R Cn Cc Cs

IUCN category: LC

Remarks: See comments under *A. millefolium*.

Achillea odorata L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs

IUCN category: LC

Achillea ptarmica L.

Non-native: C

Distribution: ?Pa Ppe

Remarks: An occasional garden escape. A single plant has been found in the Segre river close Seu d'Urgell (Aymerich, 2016a). This species was collected in Pa (Banys de Tredòs) by A.C. Costa in 19th century, but it is unclear if cultivated or escaped.

Achillea pyrenaica Godr. [*A. ptarmica* subsp. *pyrenaica* (Godr.) Heimerl]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Achillea roseo-alba Ehrend.

Non-native: N

Distribution: Pc Ppc Ppe

Remarks: Naturalised in upper Segre basin (Seu d'Urgell area) and, locally, in Àneu valley, upper Noguera Pallaresa basin (Aymerich & Soriano 2017; Aymerich, 2017b) and Cerdanya plain (Aymerich, 2021).

Adenostyles alliariae (Gouan) A. Kern. subsp. *alliariae*

Distribution: Pc Pe Ppe

IUCN category: LC

Adenostyles alpina (L.) Bluff & Fingerh. subsp. ***pyrenaica*** (Lange) M. Dillenberger & Kadereit [*A. alliariae* subsp. *pyrenaica* (Lange) Rouy; *A. alliariae* subsp. *hybrida* auct.]

Distribution: Pa Pc

IUCN category: LC

Remarks: So far it is known only from central Pyrenees (Bolòs & Vigo, 1996) while an old report from eastern Pyrenees (Ribes valley) (see Vigo, 1983) is probably based on confusion with *A. alliariae* subsp. *alliariae*.

Ageratum houstonianum Mill.

Non-native: C

Distribution: Cn

Remarks: Sometimes cultivated as an ornamental and known to be locally naturalised in a stream near Argentona, Maresme (Casasayas, 1989).

Ambrosia artemisiifolia L.

Non-native: C

Distribution: O Cn

Remarks: Reported from Sales de Llerca, Garrotxa (Oliver & al., 2009) and el Corredor, Maresme (Amor, & al., 2012). Its presence in Llobregat Delta area (Blanché & al., 2010) was not confirmed by González & al. (2016).

Ambrosia maritima L.

Distribution: +Cn +Cc

IUCN category: RE

Remarks: Long ago extinct in the coast close to Barcelona (Bolòs & Vigo, 1996). Reports from central and southern Cc are due to confusion with other species of the genus or are unclear (not supported by herbarium specimens). The destruction of coastal habitats probably caused the decline of *A. maritima* (Aymerich & Sáez, 2021a).

Ambrosia psilostachya DC. [*A. coronopifolia* Torr. & A. Gray]

Non-native: N

Distribution: Pe Ppe Aw R Cn Cc Cs

Ambrosia tenuifolia Spreng.

Non-native: N

Distribution: S Cn Cc

Anacyclus clavatus (Desf.) Pers.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Anacyclus homogamos (Maire) Humphries [*A. valentinus* var. *homogamos* Maire]

Distribution: R Cn Cc Cs

IUCN category: DD

Remarks: See Molero & Pyke (2019) for its distribution.

Anacyclus radiatus Loisel. subsp. *radiatus*

Non-native: C

Distribution: Ppc Aw S O Cn Cc Cs

Remarks: Mainly adventive in waysides (Bolòs & Vigo, 1996)

Anacyclus valentinus L.

Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Andryala integrifolia L.

Distribution: Pa Pc Pe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Andryala ragusina L.

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Antennaria carpatica (Wahlenb.) Bluff & Fingerh. subsp. *helvetica* (Chrtek & Pouzar)
Chrtek & Pouzar

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Antennaria dioica (L.) Gaertn.

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Anthemis alpestris (Hoffmanns. & Link) R. Fern. [*A. cretica* subsp. *chrysocephala* (Boiss.) O. Bolòs & Vigo]

Distribution: Cc

IUCN category: VU

Remarks: Known only from Prades mountains.

Anthemis arvensis L. subsp. *arvensis*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Anthemis arvensis subsp. *incrassata* (Loisel.) Nyman

Distribution: Ae ?Aw ?S ?R Cn Cc ?Cs

IUCN category: LC

Remarks: Its distribution area is probably underestimated due to confusion with *A. arvensis* subsp. *arvensis*.

Anthemis cotula L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Anthemis cretica L. subsp. ***carpatica*** (Willd.) Grierson

Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Anthemis cretica subsp. ***saxatilis*** (DC.) R. Fern.

Distribution: Pe

IUCN category: NT

Remarks: Known only from Albera and Salines massifs (Benedí, 1990; Sáez & al., 2010).

Anthemis maritima L. subsp. ***maritima***

Distribution: R

IUCN category: VU

Remarks: Its native status is uncertain. At least one population seems to be introduced by beach restoration works (Gesti, 2006; Aymerich & Sáez, 2021a).

Arctium lappa L. subsp. ***lappa***

Distribution: Pc Pe Ppc Ppe O Cn

IUCN category: LC

Remarks: This species was often confused with *A. minus*.

Arctium minus (Hill) Bernh. [*A. minus* subsp. *mediterraneum* Arènes; *A. pubens* Bab.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Arctium xnothum (Ruhm.) Weiss. [*A. lappa* subsp. *lappa* × *A. minus*]

Distribution: Pc Pe

Arctotheca calendula (L.) Levyns

Non-native: N

Distribution: R Cn Cc

Remarks: Cultivated for ornament and locally naturalised in coastal areas.

Arnoseria minima (L.) Schweigg. & Körte

Distribution: Pa Pc ?Pe Cn

IUCN category: LC

Arnica montana L.

Distribution: Pa Pc Pe Ppe O

IUCN category: LC

Artemisia abrotanum L.

Non-native: C

Distribution: Pe Ppe Cn Cs

Remarks: Cultivated and sometimes escaped.

Artemisia absinthium L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Artemisia alba Turra subsp. ***alba*** [*A. camphorata* Vill.]

Distribution: ?Pa Pc Pe Ppc Ppe Ae ?Aw Cn Cc Cs

IUCN category: LC

Remarks: Old reports from Pa and Aw (see Bolòs & Vigo, 1996) require confirmation.

Artemisia annua L.

Non-native: N

Distribution: ?Ppe Ae Cn Cc

Remarks: Locally naturalised in suburban areas.

Artemisia arborescens L.

Non-native: N

Distribution: R Cn Cc Cs

Remarks: Sometimes grown as an ornamental and known to be locally naturalised.

Artemisia barrelieri Besser

Distribution: S Cs

IUCN category: LC

Artemisia caerulescens L. subsp. ***gallica*** (Willd.) K. Perss.

Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Plants from S and Aw were recognised as *A. gallica* var. *gargantae* (Vallès-Xirau & Seoane) O. Bolòs & Vigo [*A. caerulescens* subsp. *gargantae* Vallès-Xirau & Seoane] on the basis of vegetative characters. However, Benedí (2019) reduced *A. caerulescens* subsp. *gargantae* to synonymy of *A. caerulescens* subsp. *gallica*.

Artemisia campestris L. [*A. campestris* subsp. *glutinosa* (Besser) Batt.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Plants with oblong capitula and viscid panicle-branches and involucre bracts were treated as *A. campestris* subsp. *glutinosa*. However, Benedí (2019) analysed in detail the variation of these characters and concluded that are uncorrelated.

Artemisia chamaemelifolia Vill.

Distribution: Pc Pe Ppc Ppe

IUCN category: NT

Artemisia dracunculus L.*Non-native:* C*Distribution:* +Cn*Remarks:* Reported from Barcelona by Casasayas & Masalles (1981) where it seems to have disappeared (Casasayas, 1989).*Artemisia eriantha* Ten. [*A. umbelliformis* subsp. *eriantha* (Ten.) Vallès-Xirau & Oliva Brañas]*Distribution:* Pa Pc*IUCN category:* LC*Artemisia herba-alba* Asso [*A. herba-alba* subsp. *valentina* (Lam.) Masclans]*Distribution:* Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC*Remarks:* *Artemisia herba-alba* subsp. *herba-alba* and subsp. *valentina* were accepted by Benedí (2019). However, according to Bougoutaia & al. (2021) diploid and tetraploid populations of *A. herba-alba* are distributed without a clear geographical pattern; multiple polyploidisation events probably took place on the Iberian Peninsula and in North Africa independently.*Artemisia thuscula* Cav. [*A. canariensis* (Besser) Less.]*Non-native:* N*Distribution:* Cn*Remarks:* Known from Blanes (Selva); locally naturalised in maritime rocks close to Mar i Murtra Botanical Garden (Casasayas, 1989). This species was listed without precise location for Barcelona metropolitan area (Basnou & al., 2015, sub *A. canariensis*).*Artemisia umbelliformis* Lam. [*A. gabriellae* Braun-Blanq.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Artemisia verlotiorum* Lamotte*Non-native:* I*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Artemisia vulgaris* L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC*Aster alpinus* L.*Distribution:* Pa Pc Pe Ppc Ppe Cs*IUCN category:* LC

Aster willkommii Sch. Bip. [*A. catalaunicus* Willk. & Costa]*Distribution:* Pe Ppc Ppe Ae O Cs*IUCN category:* LC

Remarks: Plants from northern Catalonia were treated as *A. willkommii* subsp. *catalaunicus* (Willk. & Costa) A. Bolòs on the basis of vegetative features. However, specimens referable to subsp. *catalaunicus* and subsp. *willkommii* can be sympatric and are difficult to separate, showing many combinations of characters and are connected by intermediates. Assignment to one or the other subspecies appears random. Therefore, plants called *A. willkommii* subsp. *catalaunicus* do not seem to deserve taxonomic recognition.

Asteriscus aquaticus (L.) Less.*Distribution:* Ppc Ppe Aw S R Cn Cc Cs*IUCN category:* LC***Atractylis cancellata*** L.*Distribution:* Ppc Ppe S R Cn Cc Cs*IUCN category:* LC

Remarks: López Martínez & Devesa (2014b) reduced *Atractylis xgedeonii* Sennen (supposedly hybrid between *A. cancellata* and *A. humilis*) to synonym of *A. humilis*.

Atractylis humilis L.*Distribution:* ?Pc Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Baccharis halimifolia*** L.*Non-native:* C*Distribution:* R

Remarks: Very rare in lower Ter saltmarshes (Barriocanal & al., 2005).

Baccharis salicifolia (Ruiz & Pav.) Pers.*Non-native:* C*Distribution:* Cc

Remarks: Reported from a disturbed habitat in Llobregat Delta area (Gómez-Bellver & al., 2016). Aymerich & Sáez (2019b) erroneously listed this species as *B. salicina* Torr. & A. Gray.

Bellis annua L. subsp. *annua**Distribution:* R Cn Cc Cs*IUCN category:* LC***Bellis perennis*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Bellis sylvestris Cirillo*Distribution:* Ppe Ae R Cn Cc Cs*IUCN category:* LC***Bidens aurea*** (Aiton) Sherff*Non-native:* N*Distribution:* Ae Aw O R Cn Cc Cs***Bidens cernuus*** L.*Distribution:* +Pc Pe*IUCN category:* CR

Remarks: An extremely rare species recently rediscovered in the studied area, in Cerdanya plain (Aymerich, 2015), where it was anciently known in the French part. There is an old collection (19th century) in Seu d'Urgell (Pc). Moreover, there is an old report corresponding to a French location close to the limit of Pa.

Bidens frondosus L.*Non-native:* I*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Bidens pilosus*** L.*Non-native:* N*Distribution:* Cn Cc Cs***Bidens subalternans*** DC.*Non-native:* I*Distribution:* Ppc Ppe Ae Aw S O Cn Cc Cs***Bidens tripartitus*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae S O R Cn Cc Cs*IUCN category:* LC***Bidens vulgata*** Greene*Non-native:* N*Distribution:* R Cn

Remarks: Reported from Castelló d'Empúries and Girona (Verloove & Aymerich, 2020).

Bombycilaena discolor (Pers.) M. Lainz [*Micropus discolor* Pers.]*Distribution:* S [Cn]*IUCN category:* LC***Bombycilaena erecta*** (L.) Smoljan. [*Micropus erectus* L.]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Calendula arvensis (Vaill.) L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Calendula officinalis*** L.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs***Carduncellus caeruleus*** (L.) C. Presl*Non-native:* C*Distribution:* Ppc*Remarks:* Its non-native status is uncertain. Reported from Conca de Tremp by Conesa & Pedrol (2008).***Carduncellus monspelliensium*** All.*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Carduus bourgeanus*** Boiss. & Reut.*Distribution:* Ppc S*IUCN category:* LC***Carduus carlinifolius*** Lam. [*C. defloratus* L. subsp. *carlinifolius* (Lam.) Ces.]*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Carduus carlinoides*** Gouan subsp. *carlinoides**Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Carduus crispus*** L. subsp. *multiflorus* (Gaudin) Franco [*C. crispus* subsp. *occidentalis* Chass. & Arènes; *C. crispus* auct., non L.]*Distribution:* Pe Ppe Ae O Cn*IUCN category:* LC*Remarks:* Devesa (2014) reported *C. crispus* L. subsp. *crispus* from Gorges de Llo (French Cerdanya), close to Pe boundary.***Carduus defloratus*** L. subsp. *medius* (Gouan) Bonnier [incl. *C. defloratus* subsp. *argemone* (Lam.) Ces.; *C. argemone* Lam.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC

Carduus nigrescens Vill. subsp. ***nigrescens*** [incl. *C. assoi* (Willk.) Devesa & Talavera]

Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: *Carduus nigrescens* subsp. *assoi* Willk. [*C. nigrescens* var. *assoi* (Willk.) O. Bolòs & Vigo; *C. assoi* (Willk.) Devesa & Talavera] was reported from southern Catalonia (Cs); its taxonomic status is unclear.

Carduus nutans L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Carduus pycnocephalus L.

Distribution: Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Carduus tenuiflorus Curtis

Distribution: Pc Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Carduus vivariensis Jord. [*C. nigrescens* Vill. subsp. *vivariensis* (Jord.) Bonnier & Layens; *C. ceretanus* Sennen]

Distribution: Pc Pe Ppc Ppe Ae R Cn Cc

IUCN category: LC

Carduus ×nuriae Sennen & Pau [*C. crispus* subsp. *multiflorus* × *C. carlinifolius*]

Distribution: ?Pc Pe

Carduus ×bergadensis Sennen [*C. leridanus* Devesa & Talavera; *C. carlinifolius* × *C. nutans*]

Distribution: Pc Pe

Carduus defloratus subsp. ***medius*** × ***C. carlinifolius***

Distribution: ?Pa ?Pc ?Pe ?Ppe

Remarks: Devesa (2013) reported morphologically intermediate specimens between *C. defloratus* subsp. *medius* and *C. carlinifolius*, presumably of hybrid origin, from Pyrenees (Barcelona, Girona and Lleida provinces).

Carlina acanthifolia All. subsp. ***cynara*** (DC.) Arcang. [*C. cynara* (DC.) Duby]

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn

IUCN category: LC

Carlina acaulis L. subsp. ***caulescens*** (Lam.) Schübl. & G. Martens

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Carlina corymbosa subsp. ***hispanica*** (Lam.) O. Bolòs & Vigo [*C. hispanica* Lam.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Carlina lanata L.

Distribution: S R Cn Cc Cs

IUCN category: LC

Carlina vulgaris L. subsp. ***spinosa*** (Velen.) Vandas [*C. longifolia* var. *spinosa* Velen.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw ?S O R Cn Cc Cs

IUCN category: LC

Remarks: Reports of *C. vulgaris* subsp. *vulgaris* are referable to *C. vulgaris* subsp. *spinosa* (López Martínez & Devesa 2014a).

Carlina ×vayredae Gaut. [*C. acanthifolia* subsp. *cynara* × *C. acaulis* subsp. *caulescens*]

Distribution: Pe

Remarks: Reported by Vigo (1983).

Carpesium cernuum L.

Distribution: Pe Ae O Cn

IUCN category: LC

Carthamus lanatus L. subsp. ***lanatus*** [*Kentrophyllum lanatum* (L.) Duby subsp. *lanatum*]

Distribution: Pc Pe Ppc Ppe Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Carthamus tinctorius L.

Non-native: C

Distribution: +Cc

Remarks: Formerly cultivated. Bolòs (1921) reported *C. tinctorius* from Tortosa (Baix Ebre) where it seems to have disappeared (Folch, 1980; Casasayas, 1989).

Catananche caerulea L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Centaurea antennata Dufour subsp. ***caballeroi*** (Font Quer & Pau) M.B. Crespo, López-Alvarado, L. Sáez & Mateo [*C. caballeroi* Pau & Font Quer; *C. linifolia* subsp. *caballeroi* (Pau & Font Quer) O. Bolòs & Vigo]

Distribution: Subendemic. Cc Cs

IUCN category: LC

Remarks: See Crespo & al. (2012) for taxonomy and distribution.

Centaurea aspera L. subsp. *aspera**Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Centaurea aspera*** subsp. *stenophylla* (Dufour) Nyman*Distribution:* S Cc Cs*IUCN category:* LC***Centaurea beltrani*** (Pau) Blanca [*C. boissieri* subsp. *beltrani* (Pau) O. Bolòs & Vigo]*Distribution:* Cs*IUCN category:* DD***Centaurea benedicta*** (L.) L. [*Cnicus benedictus* L.]*Distribution:* Pc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Centaurea bofilliana*** Devesa & E. López [*C. pouzinii* var. *macrocephala* Rouy; *C. lanceolata* Lam., nom. illeg.]*Distribution:* Pc Cn Cc Cs*IUCN category:* LC*Remarks:* A poorly known taxon closely related to *C. calcitrapa* (Devesa & al., 2012); endemic to southeastern France and eastern Iberian Peninsula.***Centaurea boissieri*** DC. subsp. *integrifolia* (Willk.) Blanca & Suár.-Sant. [*C. boissieri* var. *pinæ* subvar. *integrifolia* (Willk.) O. Bolòs & Vigo]*Distribution:* Cc Cs*IUCN category:* LC*Remarks:* Reports of *C. boissieri* subsp. *pinæ* (Pau) Dostál [*C. boissieri* var. *pinæ* (Pau) O. Bolòs & Vigo] are probably referable to *C. boissieri* subsp. *integrifolia*.***Centaurea calcitrapa*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Centaurea castellanoides*** Talavera subsp. *talaveræ* E. López & Devesa*Non-native:* C*Distribution:* Cn*Remarks:* This taxon, which is endemic to southeastern and central-eastern Spain, was reported from Terrassa (Vallès) on the basis of specimens collected in 1908 by J. Cadevall (López & Devesa, 2008).

Centaurea cephalariifolia Willk. [*C. scabiosa* subsp. *cephalariifolia* (Willk.) Greuter]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs

IUCN category: LC

Remarks: Reports of *C. scabiosa* L. are referable to *C. cephalariifolia* (López & Devesa, 2013).

Centaurea collina L.

Distribution: Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Occasionally, in Cn and Ppc specimens are found that are intermediate in their characters between *C. collina* and *C. cephalariifolia* and, probably, are of hybrid origin.

Centaurea costae Willk. [*C. alba* subsp. *costae* (Willk.) Dostál]

Distribution: Pc Ppc Ppe Aw S ?Cn

IUCN category: LC

Remarks: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist. *Centaurea costae* was probably originated from a hybridization event that involved *C. alba* and a species related to *C. paniculata* from the Ligurian arch (Requena & al., 2020). Several sympatric varieties (var. *costae*, var. *maluqueri* Font Quer and var. *montsicciana* Pau & Font Quer) are connected by intermediates. López & Devesa (2011) concluded that *C. alba* var. *ciliata* O. Bolòs & Vigo is a synonym of *C. costae* var. *montsicciana*.

Centaurea cyanus L. [*Cyanus segetum* Hill]

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Centaurea decipiens Thuill. [*C. ruscinonensis* Boiss.; *C. jacea* subsp. *ruscinonensis* (Boiss.) P. Fourn.]

Distribution: Pc Pe Ppc Ppe Ae O R Cn

IUCN category: LC

Remarks: This species include morphologically intermediate plants between *C. jacea* and some taxa belonging to the *C. nigra-debeauxii* aggregate. These plants are probably the result of hybridisation and seem to be stabilised. See Arnales & Devesa (2011) for its relationships and distribution.

Centaurea depressa M. Bieb.

Non-native: C

Distribution: Ppc

Remarks: Found in Basturs (Pallars Jussà) by D. Vilasís (pers. comm.). It was observed more than one year, but it is uncertain if it is naturalised.

Centaurea diluta Aiton*Non-native:* C*Distribution:* Cn Cs*Remarks:* Only two collection sites, Amposta (Montsià) and Abrera (Baix Llobregat), are currently known in our area (Pérez Prieto & Nualart, 2019).***Centaurea dracunculifolia*** Dufour [*C. jacea* subsp. *dracunculifolia* (Dufour) A. Bolòs]*Distribution:* R Cc Cs*IUCN category:* LC***Centaurea emigrantis*** Bubani [*C. uniflora* subsp. *emigrantis* (Bubani) Font Quer]*Distribution:* Subendemic. Ppc*IUCN category:* LC*Remarks:* A report from Organyà, Alt Urgell (Bolòs & Vigo, 1996) is due to confusion with *C. tripontina* (López-Alvarado & al., 2012).***Centaurea emporitana*** (Sennen & Pau) Sennen [*C. microptilon* subsp. *emporitana* (Sennen) Dostál; incl. *C. jacea* var. *cadevallii* O. Bolòs & Vigo]*Distribution:* Subendemic. Pe Ppe O R Cn*IUCN category:* LC*Remarks:* Probably endemic to northeastern Iberian Peninsula (Arnales & Devesa, 2011). A report for Castelló province (Arnales & Devesa, 2011) is in all probability erroneous, since the herbarium specimens "Castellón, 4-IX-1905, Sennen" (MA 134758 and MA 134757) were actually collected in Castelló d'Empúries (Girona province).***Centaurea fabregatii*** Mateo & M.B. Crespo*Distribution:* Cs*IUCN category:* DD*Remarks:* Endemic to northern Castelló and southern Tarragona provinces.***Centaurea graminifolia*** (Lam.) Muñoz Rodr. & Devesa [*C. montana* var. *pradensis* O. Bolòs & Vigo; *C. montana* subsp. *lingulata* (Lag.) O. Bolòs & Vigo]*Distribution:* Ppc Cc ?Cs*IUCN category:* LC*Remarks:* Its occurrence in Cs requires confirmation. Muñoz & Devesa (2010) reported this species from Ppc (Montsec mountains) and Cc (Prades mountains).

Centaurea hanrii Jord. [*C. paniculata* L. subsp. *hanrii* (Jord.) Rouy; *C. isernii* Willk.; *C. spinabadia* Timb.-Lagr.; *C. cadevallii* Pau]

Distribution: Subendemic. ?Ppc ?Ppe Ae ?O R Cn Cc

IUCN category: LC

Remarks: Endemic to northeastern Iberian Peninsula and southern France (López & Devesa, 2010). Occasionally, specimens are found that are intermediate in their characters between *C. paniculata* subsp. *leucophaea* and *C. hanrii*. The distributions of *C. hanrii* and *C. paniculata* (mainly in inland areas) are not clearly defined at present due to controversial taxonomic interpretations.

Centaurea jacea L. subsp. ***angustifolia*** (DC.) Gremlí [*C. jacea* var. *dertosensis* O. Bolòs & L. Torres]

Distribution: Pc Pe Ppc Ppe Ae Aw O Cc Cs

IUCN category: LC

Centaurea jacea subsp. ***vinyalsii*** (Sennen) O. Bolòs, Nuet & Panareda [*C. vinyalsii* Sennen]

Distribution: Pa ?Pc Pe Ppe Ae O Cn Cc

IUCN category: LC

Remarks: Endemic to France and northeastern Iberian Peninsula (Arnales & Devesa, 2011).

Centaurea linifolia L.

Distribution: Ppc Ae Aw S Cn Cc Cs

IUCN category: LC

Centaurea melitensis L.

Distribution: Ppc Ae Aw S O R Cn Cc Cs

IUCN category: LC

Centaurea montana L.

Distribution: Pa Pc

IUCN category: LC

Remarks: Reports from Ppe and Pe due to Muñoz & Devesa (2010) are somewhat doubtful.

Centaurea nigra subsp. ***endresii*** (Hochst. & Steud.) Arnelas & Devesa

Distribution: Pa Pc

IUCN category: LC

Centaurea nigra L. subsp. ***nigra***

Distribution: Pa Pc Pe

IUCN category: LC

Centaurea ornata Willd. [incl. *C. gabrielis-blancae* Fern. Casas; *C. ornata* var. *microcephala* Willk.]

Distribution: Ppc Aw S Cs

IUCN category: LC

Remarks: The name *C. ornata* is provisionally applied here in a broad sense.

Centaurea paniculata subsp. *leucophaea* (Jord.) Arcang. [*C. ochrolopha* Costa; *C. paniculata* subsp. *urgellensis* Arènes]

Distribution: Pc Pe Ppc Ppe Ae Aw O Cn

IUCN category: LC

Centaurea paniculata subsp. *oscensis* E. López & Devesa

Distribution: ?Aw S

IUCN category: DD

Remarks: The subspecies, endemic to northeastern Iberian Peninsula, was reported by López & Devesa (2010). Some populations from Serra de Pinós (Aw) are morphologically close to subsp. *oscensis* (Aymerich, 2013).

Centaurea paniculata L. subsp. *paniculata*

Distribution: Pe Ppe O R Cn

IUCN category: LC

Remarks: This taxon is apparently restricted to the northeastern part of the studied area.

Centaurea pectinata L.

Distribution: Pe Aw O R Cn Cc

IUCN category: LC

Centaurea podospermifolia Loscos & J. Pardo [*C. lagascana* subsp. *podospermifolia* (Loscos & J. Pardo) Dostál]

Distribution: Subendemic. Cc Cs

IUCN category: NT

Remarks: DNA sequencing indicates that populations from Ports massif (Cs) are introgressed with *C. cephalariifolia*, whereas those from Cardó mountains (Cc) remain apparently pure (López-Pujol & al., 2012).

Centaurea seridis L. [*C. seridis* subsp. *maritima* (Dufour) Dostál]

Distribution: R Cc

IUCN category: VU

Centaurea solstitialis L. subsp. *solstitialis*

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Centaurea stuessyi Arnelas, Devesa & E. López*Distribution:* Cc Cs*IUCN category:* LC

Remarks: A recently described taxon endemic to Castelló, Tarragona and Teruel provinces, which has been confused with some forms of *C. linifolia*. *Centaurea stuessyi* is a tetraploid species morphologically intermediate between *C. antennata* (in a broad sense) and *C. linifolia* (Arnelas & al., 2013).

Centaurea triumfettii All. subsp. ***semidecurrens*** (Jord.) Dostál [*C. montana* subsp. *semidecurrens* (Jord.) O. Bolòs & Vigo]*Distribution:* Pe Ppc Ppe Ae Aw O Cn Cc*IUCN category:* LC***Centaurea tripontina*** López-Alvarado, L. Sáez, Filigheddu, Guardiola & Susanna*Distribution:* Endemic. Ppc Ppe*IUCN category:* EN

Remarks: This narrowly endemic species is restricted to a small gorge area of Segre river in Alt Urgell. It was included within the variability of *C. pectinata* by Arnelas & Devesa (2012) and Devesa & al. (2014). However, the substantial morphological molecular and ecological differences detected among *C. emigrantis*, *C. pectinata* and *C. tripontina* allow their taxonomic separation into three distinct species (López-Alvarado, 2012; López-Alvarado & al., 2012, 2014).

Centaurea emigrantis* × *C. linifolia*Distribution:* Ppc*Remarks:* Reported from Alós de Balaguer, Sierra Carbonera (Arnelas & al., 2018).***Centaurea ×loscosii*** Willk. [*C. cephalariifolia* × *C. podospermifolia*]*Distribution:* Cs

Remarks: *Centaurea podospermifolia* may produce a highly unstable homoploid hybrid (*C. ×loscosii*) with *C. cephalariifolia* (López-Pujol & al., 2012). *Centaurea loscosii* is not genetically isolated from the parental species and does not form a viable entity because of its instability and rarity.

Centaurea ×pouzinii DC. [*C. aspera* subsp. *aspera* × *C. calcitrapa*]*Distribution:* Ae S R Cc Cs***Centaurea ×sennenii*** Sennen [*C. emporitana* × *C. calcitrapa*]*Distribution:* R

Remarks: A report for Tarragona province (Devesa & al., 2012) is erroneous. The type specimen was collected in Castelló d'Empúries.

Centaurea ×subdecurrens Pau [*C. aspera* subsp. *aspera* × *C. seridis*]*Distribution:* R

Remarks: Reported from Aiguamolls de l'Empordà (Invernón & Devesa, 2013).

Cheirolophus intybaceus (Lam.) Dostál*Distribution:* Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Chiliadenus glutinosus*** (L.) Fourr. [*Jasonia glutinosa* (L.) DC.]*Distribution:* Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Chondrilla juncea*** L.*Distribution:* ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Chrysanthemum indicum*** L.*Non-native:* C*Distribution:* Ppe Aw Cn*Remarks:* A rare garden escape in Maresme, Berguedà and Solsonès (Montserrat, 1962, Casasayas, 1989; Aymerich, 2020a).***Cicerbita alpina*** (L.) Wallr. [*Lactuca alpina* (L.) A. Gray]*Distribution:* Pc Pe*IUCN category:* LC***Cicerbita muralis*** (L.) Wallr. subsp. *muralis* [*Lactuca muralis* (L.) Gaertn.; *Mycelis muralis* (L.) Dumort.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Cichorium intybus*** L. subsp. *intybus**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Cichorium pumilum*** Jacq. [*C. endivia* subsp. *pumilum* (Jacq.) Cout.]*Distribution:* Aw Cn Cc*IUCN category:* LC*Remarks:* Its distribution area is probably underestimated due to confusion with *C. intybus*.***Cichorium endivia*** L.*Non-native:* C*Distribution:* Cn*Remarks:* Cultivated and sometimes casual.

Cirsium acaulon (L.) Scop. subsp. ***acaulon****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC*Remarks:* Plants from Ports massif (Cs) called var. *microcephalum* Willk. by Bolòs & Vigo (1996) are distinct from typical *C. acaulon* (Talavera & Valdés, 1975). Pyrenean plants called *C. × jaubertianum* Sennen are regarded as hybrids between *C. acaulon* and *C. monspessulanum*.***Cirsium arvense*** (L.) Scop.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Masclans & Batalla (1972) reported from Prades Mountains *C. × arenesii* Millat, an alleged hybrid between *C. arvense* and *C. monspessulanum*. However, this hybrid was not listed for the Iberian Peninsula by Talavera (2014).***Cirsium echinatum*** (Desf.) DC.*Distribution:* Ppc Ae Aw S Cn Cc Cs*IUCN category:* LC***Cirsium eriophorum*** (L.) Scop.*Distribution:* Pa Pc Pe*IUCN category:* LC*Remarks:* Its presence in Barcelona province (Talavera, 2014) requires confirmation.***Cirsium erisithales*** (Jacq.) Scop.*Distribution:* Pe Ppe O*IUCN category:* NT***Cirsium glabrum*** DC.*Distribution:* Pa Pc*IUCN category:* LC***Cirsium heterophyllum*** (L.) Hill*Distribution:* ?Pa ?Pc ?Ppc ?Ppe ?S*IUCN category:* DD*Remarks:* Listed for Lleida province without precise location (Talavera, 2014).***Cirsium monspessulanum*** (L.) Hill*Distribution:* Pa Pc Pe Ppc Ppe O ?R ?Cn*IUCN category:* LC*Remarks:* Its distribution area is not clearly defined at present due to confusion with *C. valdespinulosum*. *Cirsium monspessulanum* was usually reported from northern mountain areas (Talavera & Valdés, 1975; Bolòs & Vigo, 1996).

Cirsium odontolepis DC. [*C. eriophorum* subsp. *odontolepis* (DC.) Rouy]

Distribution: Ppc Aw Cc Cs

IUCN category: LC

Cirsium palustre (L.) Scop.

Distribution: Pc Pe Ppc Ppe O Cn

IUCN category: LC

Cirsium richterianum Gillot subsp. *costae* (Sennen & Pau) Talavera & Valdés [*C. eriophorum* var. *costae* (Sennen) O. Bolòs & Vigo]

Distribution: Subendemic. Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Cirsium richterianum subsp. *giraudiasii* (Sennen & Pau) Talavera & Valdés

Distribution: ?Ppc ?Cc ?Cs

IUCN category: DD

Remarks: Listed for Tarragona province without precise location (Talavera, 2014). This taxon was also reported from Montsec d'Ares (Ppc) by Romo (1989a).

Cirsium richterianum Gillot subsp. *richterianum*

Distribution: Pc Pe Ppc Ppe

IUCN category: LC

Cirsium rivulare (Jacq.) All.

Distribution: Pa Pc Pe ?O

IUCN category: LC

Remarks: Reports from O require confirmation.

Cirsium tuberosum (L.) All.

Distribution: Pa Pe Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Cirsium valdespinulosum (Sennen) Sennen [*C. monspessulanum* subsp. *ferox* (Coss.) Talavera; *C. pyrenaicum* var. *paniculatum* (Vahl) Talavera & Valdés]

Distribution: Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: Its distribution area is not clearly defined at present. This taxon was usually reported from lowland and central-southern mountain areas (Talavera & Valdés, 1975; Bolòs & Vigo, 1996).

Cirsium vulgare (Savi) Ten. [*C. vulgare* subsp. *crinitum* (DC.) Arènes]

Distribution: Pa Pc Pe Ppc Ppe Aw S O R Cn Cc Cs

IUCN category: LC

Cirsium ×gayi Rouy [*C. glabrum* × *C. monspessulanum*]

Distribution: Pa

Remarks: Reported from Aran valley without precise location (Talavera, 2014).

Cirsium ×neyrae E.G. Camus [*C. borderei* Rouy, *C. monspessulanum* × *C. palustre*]

Distribution: Pa Pe O

Remarks: Reported from Aran valley, Ripoll and Cabrera mountain (Talavera, 2014).

Cirsium ×medium All. [*C. acaulon* subsp. *acaulon* × *C. tuberosum*]

Distribution: Pe Ae O

Remarks: Reported by Talavera & Valdés (1975).

Cladanthus mixtus (L.) Chevall. [*Chamaemelum mixtum* (L.) All.]

Distribution: Pe Ppc R Cn

IUCN category: LC

Coreopsis cf. lanceolata L.

Non-native: C

Distribution: Cn

Remarks: It was reported from Tavèrnoles, Osona (Pérez-Haase & al., 2013); also observed in Besòs river, close to Barcelona (S. Argemí in biodiversidadvirtual.org, 2016). The identity of these plants is uncertain, it cannot be ruled out that they are forms of the morphologically diverse *C. grandiflora* Sweet or hybrids between the latter species and *C. lanceolata*.

Coreopsis tinctoria Nutt.

Non-native: C

Distribution: Pc Cn

Remarks: Rarely cultivated for ornament; escaped in Martinet (Cerdanya, probably in Pc) (Casasayas, 1989) and Barcelona metropolitan area (S. Argemí in biodiversidadvirtual.org, 2016).

Cosmos bipinnatus Cav.

Non-native: C

Distribution: Pe Ppc Ppe Ae Aw O R

Remarks: Cultivated and sometimes sporadic (Casasayas, 1989).

Cota altissima (L.) J. Gay [*Anthemis altissima* L.]

Distribution: Ppe R Cn

IUCN category: LC

Cota triumfettii (L.) J. Gay [*Anthemis triumfettii* (L.) DC.]

Distribution: Pa Pc Pe Ppc Ppe Aw O R Cn Cc

IUCN category: LC

Cotula australis (Spreng.) Hook. f.*Non-native:* N*Distribution:* Pe R Cn Cc Cs*Remarks:* Locally naturalised in coastal areas.***Cotula coronopifolia*** L.*Non-native:* N*Distribution:* Cs*Remarks:* It is only known in the Ebre Delta (Balada & al., 1998; Curcó, 2007; unpubl. data).***Crepis albida*** Vill. [*C. albida* subsp. *macrocephala* (Willk.) Babç.; *C. albida* subsp. *scorzoneroides* (Rouy) Babç.]*Distribution:* Pa Pc Pe Ppc Ppe Aw O Cn Cc Cs*IUCN category:* LC*Remarks:* See Talavera & al. (2017a) for taxonomy.***Crepis bellidifolia*** Loisel.*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Tibidabo, Collserola mountain (Talavera & al., 2017a).***Crepis biennis*** L.*Distribution:* Pa Pc Pe Ppe O R Cc*IUCN category:* LC***Crepis blattarioides*** (L.) Vill. [*C. conyzifolia* (Gouan) A. Kern.]*Distribution:* Pa Pc Pe*IUCN category:* LC***Crepis bursifolia*** L.*Non-native:* N*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs***Crepis capillaris*** (L.) Wallr. [*C. virens* subsp. *capillaris* (L.) Cout.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Crepis foetida*** L. subsp. *foetida**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Crepis lampanoides*** (Gouan) Tausch*Distribution:* Pa Pc Ppe*IUCN category:* LC

Crepis nicaeensis Balb.*Distribution:* Pc Pe Ppc Ppe Ae O R Cn Cc*IUCN category:* LC***Crepis mollis*** (Jacq.) Asch.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Crepis paludosa*** (L.) Moench*Distribution:* Pa Pc*IUCN category:* LC***Crepis pulchra*** L. subsp. ***pulchra*** [*C. hispanica* Pau]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Crepis pygmaea*** L.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Crepis pyrenaica*** (L.) Greuter*Distribution:* Pa Pc Pe*IUCN category:* LC***Crepis sancta*** (L.) Bornm.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs***Crepis setosa*** Haller fil. subsp. ***setosa****Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Crepis taraxacifolia*** Thuill. [*C. vesicaria* subsp. *taraxacifolia* (Thuill.) Thell.; *C. vesicaria* subsp. *haenseleri* (DC.) P.D. Sell]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Crepis zacintha*** (L.) Loisel.*Non-native:* C*Distribution:* +Cn*Remarks:* It was collected in Barcelona in May 1848 by M. Funk (COI 00041371).***Crupina vulgaris*** Cass.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC

Cynara baetica (Spreng.) Pau*Non-native:* C*Distribution:* Cc*Remarks:* Reported as casual from Tivissa, Ribera d'Ebre (Molero & al., 1997).*Cynara cardunculus* L. [*C. scolymus* L.; *C. cardunculus* subsp. *scolymus* (L.) Hegi]*Non-native:* C*Distribution:* S O Cc*Remarks:* Two cultivars originated from *C. cardunculus*, the 'cardo' and the 'artichoke' are cultivated and locally escaped.*Cynara cardunculus* subsp. *flavescens* Wiklund*Distribution:* Pc Ppc Ppe Ae Aw R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain. Devesa & López Martínez (2014a) listed this taxon as native for the studied area. Furthermore, its distribution area is not clearly defined at present and the subspecific attribution of some populations needs to be properly ascertained.*Delairea odorata* Lem. [*Senecio mikanioides* Walp.; *S. scandens* DC.]*Non-native:* I*Distribution:* Aw ?O Cn Cc Cs*Remarks:* A future wider naturalisation in coastal habitats is feasible.*Dimorphotheca fruticosa* (L.) DC.*Non-native:* C*Distribution:* R*Remarks:* Recorded from L'Escala, Alt Empordà (Gómez-Bellver & al., 2019a).*Ditrichia graveolens* (L.) Greuter [*Inula graveolens* (L.) Desf.]*Distribution:* Ppc Ppe S R Cn Cc Cs*IUCN category:* LC*Ditrichia viscosa* (L.) Greuter subsp. *viscosa* [*Inula viscosa* (L.) Aiton subsp. *viscosa*]*Distribution:* Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* In many inland areas this species usually constitutes unstable populations along roadsides.*Doronicum austriacum* Jacq.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC

Doronicum grandiflorum Lam. [*D. grandiflorum* var. *pyrenaicum* (Gren. & Godr.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Doronicum pardalianches L.

Distribution: Pa Pc Pe Ppc Ppe Ae O Cn Cc

IUCN category: LC

Doronicum plantagineum L.

Distribution: Cc

IUCN category: NT

Echinops ritro L. subsp. *ritro*

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Echinops sphaerocephalus L. subsp. *sphaerocephalus*

Distribution: Pe Ppc Ppe Ae O Cn

IUCN category: LC

Eclipta prostrata (L.) L.

Non-native: N

Distribution: S R Cn Cc Cs

Erigeron acris L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Erigeron alpinus L. [*E. pyrenaicus* (Pourr.) A.W. Hill; *E. verguinii* Sennen]

Distribution: Pa Pc Pe Ppc Ppe Cn

IUCN category: LC

Erigeron annuus (L.) Desf.

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn

Remarks: According to Bolòs & Vigo (1996), this species is represented in our area by subsp. *septentrionalis* (Fernald & Wiegand) Wagenitz [=*E. annuus* subsp. *strigosus* auct.].

Erigeron aragonensis Vierh. [*E. uniflorus* subsp. *aragonensis* (Vierh.) O. Bolòs & Vigo]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this checklist.

Erigeron atticus Vill. [*E. alpinus* var. *atticus* (Vill.) Fiori]

Distribution: Pa Pc

IUCN category: VU

Remarks: Pujadas & Arán (2011) reported this species from Besiberri massif (Alta Ribagorça) and Colomers (Val d'Aran). The presence of *E. atticus* is also documented in a nearby location within French territory (Eina valley) close to Pe boundary.

Erigeron blakei Cabrera [*Conyza blakei* (Cabrera) Cabrera]

Non-native: N

Distribution: Ae Cn

Remarks: Reported from Vilablareix, Gironès (Vilar & Sáez, 2021); also found in Osona (P. Aymerich, unpubl. data).

Erigeron bonariensis L. [*Conyza bonariensis* (L.) Cronq.]

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: The hybrid nature of the hybrids reported by Casasayas (1989) [*E. bonariensis* × *E. canadensis* and *E. bonariensis* × *E. sumatrensis*] needs to be confirmed. According to Galkina & Vinogradova (2020) the *Erigeron* invasive species in the Mediterranean basin have very low hybridogenic activity, and plants with intermediate traits are not always hybrids.

Erigeron canadensis L. [*Conyza canadensis* (L.) Cronq.]

Non-native: I

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Casasayas (1989) reported hybrids between *E. canadensis* and *E. sumatrensis*. The hybrid nature of these plants needs to be confirmed; see comments under *E. bonariensis*.

Erigeron floribundus (Kunth) Sch. Bip. [*Conyza floribunda* Kunth]

Non-native: N

Distribution: Ae R Cn Cc Cs

Erigeron glabratus Bluff & Fingerh. subsp. ***occidentalis*** (Vierh) A. Pujadas [*E. polymorphus* Scop. subsp. *occidentalis* Vierh.]

Distribution: Pc Pe Ppc Ppe

IUCN category: LC

Erigeron karvinskianus DC.

Non-native: I

Distribution: Ppc Ppe Ae Aw O R Cn Cc Cs

Erigeron primulifolius (Lam.) Greuter [*Conyza primulifolia* (Lam.) Cuatrec. & Lourteig]

Non-native: C

Distribution: Cn

Remarks: Formerly known from Barcelona area, where it was collected by F. Sennen in 1920.

Erigeron sumatrensis Retz. [*Conyza sumatrensis* (Retz.) E. Walker]

Non-native: I

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: *Conyza ambigua* DC., *C. naudinii* Bonnet, *C. ×daveauana* Sennen and *C. ×flahaultiana* Sennen were reduced to synonymy of *Erigeron sumatrensis* (Nesom, 2018).

Erigeron uniflorus L.

Distribution: Pa Pc

IUCN category: LC

Eriocephalus africanus L.

Non-native: C

Distribution: Cn

Remarks: A small not established population of this species was found in Costa Brava (Sáez & Guillot, 2015).

Eupatorium cannabinum L. subsp. *cannabinum*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Euryops chrysanthemoides (DC.) B. Nord. × *E. pectinatus* (L.) Cass.

Non-native: C

Distribution: Cn

Remarks: Reported from L'Escala, Baix Empordà (Gómez-Bellver & al., 2019c).

Felicia filifolia (Vent.) Burt Davy [*Aster filifolius* Vent.]

Non-native: C

Distribution: Cc

Remarks: Reported from a single location in Priorat (Molero & Pyke, 2009).

Filago arvensis L.

Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc

IUCN category: LC

Filago carpetana (Lange) Chrtek & Holub [*F. pygmaea* subsp. *carpetana* (Lange) O. Bolòs & Vigo, *Evax pygmaea* subsp. *carpetana* (Lange) Masclans]

Distribution: Cc

IUCN category: VU

Remarks: Known only from Prades mountains and its surroundings.

Filago congesta DC.*Distribution:* S R Cn Cc Cs*IUCN category:* LC***Filago germanica*** (L.) Huds. [*F. vulgaris* Lam., *F. pyramidata* subsp. *canescens* (Jord.)

O. Bolòs & Vigo]

Distribution: Pc Pe Ae S R Cn Cc*IUCN category:* LC***Filago lusitanica*** (Samp.) P. Silva [*Evax lusitanica* Samp.]*Distribution:* R*IUCN category:* EN*Remarks:* Known only from Montgrí massif.***Filago lutescens*** Jord. [*F. pyramidata* subsp. *lutescens* (Jord.) O. Bolòs & Vigo]*Distribution:* Pe Ae S R Cn Cc*IUCN category:* LC*Remarks:* Also reported from an area in Aragon close to the boundary of Cs.***Filago pygmaea*** L. [*Evax pygmaea* (L.) Brot.]*Distribution:* R*IUCN category:* LC***Filago pyramidata*** L. [*F. obovata* Pomel; *F. pyramidata* var. *obovata* (Pomel) Wagenitz;*F. pyramidata* var. *prostrata* (Fiori) Wagenitz]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Gaillardia* ×*grandiflora*** van Houtte*Non-native:* C*Distribution:* Pe Ppc Ppe O Cn*Remarks:* We assume that the escaped plants correspond to a horticultural hybrid involving *G. aristata* Pursh and probably *G. pulchella* Fougeroux.***Galactites tomentosus*** Moench*Distribution:* Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Galatella aragonensis*** (Asso) Nees [*Aster aragonensis* Asso]*Distribution:* Cs*IUCN category:* NT

Galatella linosyris (L.) Rchb. fil. [*Aster linosyris* (L.) Bernh.]

Distribution: Pc Pe Ppc Ppe Ae Cn Cc Cs

IUCN category: LC

Galatella sedifolia (L.) Greuter [*Aster sedifolius* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Galinsoga parviflora Cav.

Non-native: N

Distribution: Pe Ppc Ppe Ae O Cn Cc

Galinsoga quadriradiata Ruiz & Pav. [*G. ciliata* (Raf.) S.F. Blake; *G. parviflora* subsp. *hispida* (DC.) O. Bolòs & Vigo]

Non-native: N

Distribution: Pc Pe Ppe Ae O R Cn

Gamochaeta americana (Mill.) Wedd. [*G. coarctata* (Willd.) Kerguelen; *Gnaphalium coarctatum* Willd.]

Non-native: N

Distribution: Cn Cc

Remarks: *Gamochaeta coarctata* should be considered a synonym of *G. americana* (Freire & al., 2021). Reports of *Gamochaeta pennsylvanica* (Willd.) Cabrera [*Gnaphalium purpureum* L. subsp. *pennsylvanicum* (Willd.) O. Bolòs & Vigo] are probably based on confusion with *G. americana*.

Gamochaeta subfalcata (Cabrera) Cabrera [*Gnaphalium antillanum* Urb.]

Non-native: N

Distribution: O R Cn

Gazania rigens (L.) Gaertn.

Non-native: N

Distribution: R Cn Cc Cs

Remarks: The name *Gazania rigens* is applied here in a broad sense [incl. *G. linearis* (Thunb.) Druce and *G. ×splendens* Lem.]. According to Howis & al. (2009) *G. rigens* belongs to a large hybridising species complex in which there is little clear morphological or genetic distinctions between the species. Casasayas (1989) reported “*G. linearis* morphotypes” as locally naturalised in coastal areas, whereas “*G. ×splendens* morphotypes” are known from Mont-roig (Baix Camp) and Llançà (Alt Empordà) (Verloove & al., 2019).

Gelasia hirsuta (Gouan) Zaika, Sukhor. & N. Kilian [*Scorzonera hirsuta* (Gouan) L.]

Distribution: Ppc Ppe Ae Aw S O R Cn Cc

IUCN category: LC

Guizotia abyssinica (L. fil.) Cass.

Non-native: N

Distribution: Pc Ppe R Cn Cc Cs

Glebionis coronaria (L.) Spach [*Chrysanthemum coronarium* L.]

Distribution: [Ae][Aw][S] O R Cn Cc Cs

IUCN category: LC

Remarks: Outside coastal areas it is sometimes naturalised (see Bolòs & Vigo, 1996).

Glebionis segetum (L.) Fourr. [*Chrysanthemum segetum* L.]

Non-native: N

Distribution: Ppe Ae S O R Cn Cc Cs

Remarks: Its non-native status is uncertain.

Gnaphalium uliginosum L. [*Filaginella uliginosa* (L.) Opiz]

Distribution: Pa Pc Pe Ppc Ppe R Cn

IUCN category: LC

Hedypnois cretica (L.) Dum. Cours.

Distribution: R ?Cn Cc Cs

IUCN category: LC

Remarks: It was listed for Barcelona, Girona and Tarragona provinces by Talavera & al. (2017b); based on herbarium specimens it is known from R, Cc and Cs.

Hedypnois rhagadioloides (L.) F.W. Schmidt subsp. *rhagadioloides*

Distribution: Ppc Ppe S O R Cn Cc Cs

IUCN category: LC

Helminthotheca echioides (L.) Holub [*Picris echioides* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Helianthus annuus L.

Non-native: C

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Remarks: Widely cultivated, sometimes escaped close to cultivation areas.

Helianthus tuberosus L.

Non-native: I

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Helianthus ×laetiflorus Pers. [*H. pauciflorus* Nutt. × *H. tuberosus*]

Non-native: N

Distribution: Pe

Remarks: Known only from Puigcerdà, Cerdanya (Aymerich, 2016a).

Helichrysum orientale (L.) Vaill.*Non-native:* C*Distribution:* Aw Cn*Remarks:* Rarely cultivated for ornament, sometimes escaped. Known from Barcelona (BCN 26195) and Cervera, Segarra (BCN 29577).***Helichrysum serotinum*** (DC.) Boiss. subsp. ***serotinum****Distribution:* Pe Ppc Aw S R Cn Cc Cs*IUCN category:* LC***Helichrysum stoechas*** (L.) Moench*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Helichrysum ×fontqueri*** J.M. Aparicio, D. Mesa, J. Moro & F. Royo [*H. ×mixtum* Font Quer, nom. illeg.; *H. serotinum* × *H. stoechas*]*Distribution:* S***Hieracium*** L.

Remarks: The systematics of this taxonomically intricate genus in our area is still poorly known and much research is required to improve our understanding of *Hieracium*. There is no consensus on the taxonomic status of several species listed here, nor are there reliable data on the distribution of numerous taxa. Therefore, the present treatment has to be regarded as provisional, not only due to the taxonomic complexity of the genus, but also because the instability of the recent taxonomic treatments. An extensive study of the genus in the Iberian Peninsula and the Pyrenees is required to establish with certainty which species exist in the studied area, to know their variability and distribution areas. In this treatment, an entry is given for each species (usually accepted in floras and/or more or less well-known, regardless they are «main species» or postulated hybridogenous intermediate species) with any evidence of its presence in the studied area. The related taxa poorly documented or those recently described are usually commented in remarks, without this implying that they lack taxonomic value. For a detailed and analytical treatment of *Hieracium* see Mateo & Egidio (2017b). In our checklist *Hieracium* is considered in a strict sense that excludes *Pilosella* Hill and *Schlagintweitia* Griseb. (see Greuter & von Raab-Straube, 2007).

Hieracium aemulum Arv.-Touv. & Gaut.*Distribution:* Pe Ppc*IUCN category:* LC

Remarks: As circumscribed here, *H. aemulum* (*erosulum/lawsonii*) includes *H. briziflorum* Arv.-Touv. The presence of *H. aemulum* in southern Catalanidic Mountains (Baix Ebre and Montsianès) (Bolòs & Vigo, 1996) has hitherto not been well documented (Sáez & Mateo, 2016). *Hieracium aemuliforme* (Zahn) Mateo is taxonomically related to *H. aemulum* and *H. ramondii* (Mateo & Egidio, 2017b); it was listed for Girona province.

Hieracium aguilarii Pau [incl. *H. fredesianum* G. Mateo]*Distribution:* Cs*IUCN category:* NT

Remarks: Endemic to Ports massif (Castelló, Teruel and Tarragona Provinces) where it is fairly common. See Sáez & al. (2010, sub *H. fredesianum*) and Sáez & Mateo (2016) for information about its morphology, relationships and conservation status. *Hieracium aguilarii* was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered in this study.

Hieracium alatum Lapeyr.*Distribution:* Pa Pe Ppe O Cn*IUCN category:* LC

Remarks: This is a well-characterised species, taxonomically related to *H. gymnocrinthe* and *H. murorum* (Mateo & Egido, 2017b). Bolòs & Vigo (1996) and Greuter (2008b) accepted several subspecies in our area, some of them of unclear taxonomic value.

Hieracium amplexicaule L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn Cc Cs*IUCN category:* LC

Remarks: The following taxa are related to *H. amplexicaule*: *Hieracium baenitzianum* Arv.-Touv. (*candidum/amplexicaule*) is known from Ppc where *H. amplexicaule* and *H. candidum* constituted mixed populations or were very close geographically. *Hieracium dimorphotrichum* Arv.-Touv. & Gaut. (described from Tredós, Pa) is taxonomically related to *H. amplexicaule* and *H. cordatum* or *H. ramondii*. *Hieracium dipsacifolium* Arv.-Touv. [*H. dipsacifrons* Sudre; *H. adenodivaricatum* Mateo, Egido & Gómiz] (*amplexicaule/lychnitis*) was reported from Cn and Pyrenees (Mateo & Egido, 2017b). *Hieracium glaucocerinthe* Arv.-Touv. & Gaut. (*amplexicaule/hastile vel phlomoides*) was reported from Pe (Mateo & al., 2017a). *Hieracium legrandianum* Arv.-Touv. [*H. cordatum* subsp. *legrandianum* (Arv.-Touv.) Zahn] (*amplexicaule/gouanii*) occurs in Pyrenees with few occurrences in Cn and Ae. *Hieracium odonense* Mateo, Egido & Gómiz (*amplexicaule/protoconquense*) it was described from Odén (Mateo & al., 2018). *Hieracium osorense* Mateo, Egido & Gómiz (*amplexicaule/recoderi*), described from Osor (Cn) (Mateo & al., 2017a), seems to be very close to *H. cordatum*. *Hieracium osonense* Mateo, Egido & Gómiz (*amplexicaule/hirsutum*) was described from Sant Sadurní d'Osormort (Cn) (Mateo & al., 2020). *Hieracium valentinum* Pau (*amplexicaule/spathulatum*) was reported from Ports massif (Sáez & Mateo, 2016).

Hieracium andurense Arv.-Touv. [*H. phlomoides* subsp. *andurense* (Arv.-Touv.) Zahn]*Distribution:* Pa Pc*IUCN category:* LC

Remarks: The following Pyrenean taxa were interpreted as morphologically intermediate between *H. andurense* and other species: *Hieracium subandurense* (Zahn) Mateo (*andurense/lawsonii*) (Mateo, 2012) was reported from Tredós (Pa). *Hieracium aranoandurense* Mateo, Egido & Gómiz (*andurense/hastile*) (Mateo & al., 2017a; 2021).

Hieracium delegidoi Mateo & Gómiz (*andurense/argyreum*) was described from Boí valley (Mateo & Gómiz, 2019). *Hieracium martineticianum* Mateo & Gómiz (*andurense/eriopogon*) was described from Montellà, Ppe (Mateo & Gómiz, 2019). *Hieracium solerianum* Mateo & Egido (*andurense/lawsonii*) was reported from Tredós (Pa) (Mateo & al., 2021).

Hieracium aragonense Scheele

Distribution: Cc Cs

IUCN category: LC

Remarks: *Hieracium carolipauanum* Mateo (*aragonense/cordatum*) is known from Cs (Sáez & Mateo, 2016).

Hieracium argyreum Arv.-Touv. & Gaut. [*H. cordifolium* auct., non Lapeyr.]

Distribution: Ppc

IUCN category: DD

Remarks: Arvet-Touvet (1913) reported this species from Boumort massif. *Hieracium adraenicum* Mateo, known only from the type location in Adraén (Ppe), shows a close resemblance to *H. argyreum*. From Montanisell (Ppc) was described *H. mateoi* Egido & Gómiz, regarded as intermediate between *H. argyreum* and *H. lanatissimum* (Egido & Gómiz, 2019); it is also related to *H. candidum*. *Hieracium fortunatense* Mateo (*argyreum/glaucinum*) was reported from Montellà, Ppe (Mateo & Gómiz, 2019).

Hieracium atropictum Arv.-Touv. & Gaut.

Distribution: Pc Ppc

IUCN category: DD

Remarks: It was regarded as morphologically intermediate between *H. glaucinum* and *H. lawsonii* (Bolòs & Vigo, 1996).

Hieracium attractum Arv.-Touv. [*H. vogesiacum* subsp. *attractum* (Arv.-Touv.) O. Bolòs & Vigo]

Distribution: Pe Ppe

IUCN category: DD

Remarks: It is morphologically intermediate between *H. gymnocerinthe* and *H. lachenalii* (Mateo, 2016c). Its distribution area is not clearly defined at present given that very few occurrences are available.

Hieracium bicolor Scheele [*H. bourgaei* subsp. *bicolor* (Scheele) O. Bolòs & Vigo]

Distribution: Pc Pe Ppc Ppe Cn

IUCN category: LC

Remarks: This poorly known species is supposedly related to *H. neocerinthae* and *H. schimdtii*. Greuter (2008b) accepted eight subspecies within *H. bicolor*, some of which were treated at subspecific rank within *H. bourgaei* by Zahn (1921-23) and Bolòs & Vigo (1996).

Hieracium bifidum Hornem.

Distribution: ?Pa ?Pc ?Pe Ppc Ppe ?Cn ?Cc Cs

IUCN category: LC

Remarks: Its distribution area is not clearly defined at present. The following taxa are related to *H. bifidum* or were interpreted as morphologically intermediate between it and other species: *Hieracium aguilellae* Mateo (*bifidum/lychnitis*) was reported from Pc (Mateo & al., 2017a). *Hieracium balbisianum* Arv.-Touv. & Briq. (*bifidum/humile*) was reported from Estany de la Pera (Mateo & al., 2012, sub *H. kernerii* Zahn). *Hieracium baltarganum* Mateo, Egido & Gómiz (*bifidum* vel *subcaesium/protoconquense*) was described from Baltarga (Pe) (Mateo & al., 2017a). *Hieracium neoclosianum* Mateo [*H. nobile* subsp. *ibericum* (Zahn) O. Bolòs & Vigo (*bifidum/nobile*)] was reported from Cn. Morphologically intermediate plants between *H. bifidum* and *H. murorum* were called *H. recensitum* Boreau [*H. glaucinum* subsp. *recensitum* (Boreau) Gottschl.] (Mateo, 2007a); these plants are known from Pc Pe Ppe and Cc. *Hieracium subcaesium* Nyman (*bifidum/murorum*) [*H. murorum* subsp. *subcaesium* Fr.; *H. bifidum* subsp. *subcaesium* (Fr.) Hayek] was reported from Baltarga (Pe) (Mateo & al., 2017a). *Hieracium riglosianum* Mateo has taxonomic affinities with *H. bifidum*, *H. candidum* and *H. glaucinum*); it was reported from Serra de Carreu (Ppc) (Mateo & al., 2021).

Hieracium bourgaei Boiss. [*H. bicolor* subsp. *bourgaei* (Boiss.) Zahn; *H. catolanum* Arv.-Touv.]

Distribution: Cs

IUCN category: LC

Remarks: It is morphologically intermediate between *H. elisaeum* and *H. glaucinum* (Mateo & Egido, 2017b). According to Bolòs & Vigo (1996) *H. bourgaei* is widespread in the Pyrenees and the Catalanidic Mountains. However in our area it is apparently restricted to Cs. Several subspecies accepted by Bolòs & Vigo (1996) were treated at subspecies level within *H. bicolor* by Zahn (1921-23) and Greuter (2008b).

Hieracium candidum Scheele

Distribution: Subendemic. Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: The following taxa are related to *H. candidum* or were interpreted as morphologically intermediate between it and other species: *Hieracium boixolense* Mateo, Egido & Gómiz (*candidum/pyrenaeolanatum* vel *lanatonargonense*) and *H. ilerdense* Mateo (*candidum/murorum*) were reported from Ppc (Mateo, 2013). *Hieracium leucodermum* Arv.-Touv. & Gaut. was included within the synonymy of *H. candidum* (Greuter, 2008b; Mateo & Egido, 2017b). *Hieracium orteganum* Arv.-Touv. & Gaut. [*H. vellereum* subsp. *orteganum* (Arv.-Touv. & Gaut.) Zahn (= *H. solsonense* Mateo, Egido & Gómiz)] is morphologically intermediate between *H. argyrium* and *H. candidum* (Mateo & al., 2021); it is known from Pc, Ppc and Ppe. *Hieracium vellereum* Willk., described on the basis of specimens collected in Setcases (Pe), was interpreted as *candidum/eripogon* (Bolòs & Vigo, 1996). Since we have not seen the original material of *H. vellereum*, its taxonomic placement cannot be established.

Hieracium cantalicum Arv.-Touv.

Distribution: Pa Pc Pe Ppc

IUCN category: LC

Remarks: As circumscribed here, *H. cantalicum* includes *H. exaltatum* Arv.-Touv., *H. neochlorum* Arv.-Touv. & Gaut. and *H. turritifolium* Arv.-Touv. *Hieracium cantalicum* is close to *H. drazeticum* Arv.-Touv. & Marcaillou, which was reported from Pa. *Hieracium lysanum* Arv.-Touv. & Gaut. is a poorly known species morphologically intermediate between *H. glaucinum* and *H. nobile* (Mateo, 2016b) which was recognised as a subspecies of *H. cantalicum*. *Hieracium lysanum* Arv.-Touv. & Gaut. [*H. cantalicum* subsp. *lysanum* (Arv.-Touv. & Gaut.) Zahn] was reported from Alt Urgell (Bolòs & Vigo, 1996). No information concerning concrete locations of this taxon is available.

Hieracium cardoanum Mateo, L. Sáez, Egido & Gómiz

Distribution: Cc

IUCN category: DD

Remarks: This species, described from Cardó massif, is morphologically close to *H. laniferum* and *H. spathulatum* (Mateo & al.; 2017c); see also (Mateo & Gómiz, 2019). The following taxa described from Cardó massif were interpreted as morphologically intermediate between *H. cardoanum* and other species: *Hieracium latecardoanum* Mateo, L. Sáez, Egido & Gómiz (*cardoanum/murorum*) (Mateo & al., 2017c) and *Hieracium saezii* Mateo & Gómiz (*cardoanum/erosulum*) (Mateo & Gómiz, 2019).

Hieracium cavanillesianum Arv.-Touv. & Gaut.

Distribution: Pc Pe Ppe

IUCN category: LC

Remarks: This species is morphologically intermediate between *H. amplexicaule* and *H. gymnocerinthe*. It was regarded as subendemic by Sáez & al. (2010); however most of its distribution area is outside the geographical coverage considered in this study. *Hieracium aldeanum* Arv.-Touv. [*H. cavanillesianum* subsp. *aldeanum* (Arv.-Touv.) Greuter; *H. rupicola* subsp. *aldeanum* (Arv.-Touv.) O. Bolòs & Vigo] was included in the synonymy of *H. cavanillesianum* (Mateo, 2006b; Mateo & Egido, 2017b). The presence of *H. cavanillesianum* in the Montseny massif (Cn) has hitherto not been well documented (Sáez & al., 2010).

Hieracium cerinthoides L.

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: Bolòs & Vigo (1996) and Greuter (2008b) provide information about its subspecies, some of them are not recognised by Mateo & Egido (2017b) or treated at specific level. *Hieracium adenodontum* Arv.-Touv. & Gaut. [*H. subsericeum* subsp. *adenodontum* (Arv.-Touv. & Gaut.) Zahn] is taxonomically related to *H. cerinthoides* and *H. erosulum* (Mateo & Egido, 2017b). It is known from Pc and Pe; its presence in Cc is questionable (Sáez & Mateo, 2016).

Hieracium colmeiroanum Arv.-Touv. & Gaut. [*H. lanifolium* subsp. *colmeiroanum* (Arv.-Touv. & Gaut.) Greuter]

Distribution: Pc

IUCN category: LC

Remarks: See Sáez & Mateo (2016) and Mateo & Egido (2017b) for taxonomy and distribution.

Hieracium cordatum Costa [incl. *H. glaucophyllum* Scheele and *H. hispanicum* Arv.-Touv.]

Distribution: Subendemic. Pa Pc Pe Ppc Ppe O Cn Cc Cs

IUCN category: LC

Remarks: The taxonomy of this species is poorly understood and requires a conclusive resolution. *Hieracium cordatum* is morphologically intermediate between *H. amplexicaule* and *H. neocerinthae* (Mateo & Egido, 2017b). The following taxa are closely related to *H. cordatum* or were interpreted as morphologically intermediate between it and other species: *Hieracium dertosense* Mateo (*cordatum/incisioides*) is known from Ports massif (Castelló and Tarragona provinces). *Hieracium glaucophyllum* Scheele (described from Montseny massif) is a poorly defined taxon morphologically very close to *H. cordatum* (Mateo & Egido, 2017b). Plants with intermediate morphological characters between *H. cordatum* and *H. amplexicaule* (or *H. recoderi*) were referred to *H. hispanicum* Arv.-Touv. [*H. cordatum* subsp. *hispanicum* (Arv.-Touv.) Zahn] (Mateo & Egido, 2017b), a poorly known taxon allegedly endemic to eastern Pyrenees and Catalanidic Mountains. *Hieracium heteradenum* Arv.-Touv. & Cadevall (*cordatum/erosulum*) was reported from Berguedà (Ppe). *Hieracium montsignaticum* Mateo & L. Sáez is known only from the Montseny massif (Mateo & Sáez, 2016); further research is needed in order to clarify its taxonomic relationships. *Hieracium aiguafredanum* Mateo, Egido & Gómiz was interpreted as *cordatum/protoconquense* (Mateo & al., 2017a). The type material of *H. sonchifolium* Scheele, nom. illeg. seems to fall within the variation of *H. cordatum*.

Hieracium crocatum Fr. [*H. aestivum* subsp. *crocatum* (Fr.) Zahn]

Distribution: Pa Pc

IUCN category: LC

Remarks: It has taxonomic affinities with *H. racemosum* and *H. umbellatum* (Mateo & Egido, 2017b). Several subspecies were recognised by Bolòs & Vigo (1996) and Greuter (2008b).

Hieracium cryptanthum Arv.-Touv. & Marcaillou

Distribution: Pa Pc ?Pe Ppc Ppe ?Cn ?Cc

IUCN category: LC

Remarks: As circumscribed here, *H. cryptanthum* includes *H. benascanum* Arv.-Topuv. & Gaut. [= *H. subsericeum* (Rouy) Zahn], *H. rupicaprinum* Arv.-Touv. & Gaut. and *H. inuliflorum* Arv.-Touv. & Gaut. Further research on this group is needed in order to clarify the status and relationships of the taxa included within it. The occurrence of *H. cryptanthum* in the Catalanidic Mountains has hitherto not been well documented. *Hieracium fontanesianum* Arv.-Touv. & Gaut. is a poorly known species morphologically related to *H. cryptanthum*; it was reported from Alt Urgell.

Hieracium divisum Jord. [*H. maculatum* auct., non Schrank]*Distribution:* Pc O Cn*IUCN category:* LC

Remarks: The morphologically intermediate plants between *H. glaucinum* and *H. lachenalii* that were called *H. maculatum* Schrank by Bolòs & Vigo (1996) should be named, at species level, *H. divisum* Jord. (see Mateo & Egido, 2017b). Several subspecies were recognised within *H. maculatum* Schrank by Bolòs & Vigo (1996).

Hieracium elisaeaeum Willk.*Distribution:* Ppc Cs*IUCN category:* LC

Remarks: *Hieracium subbellidifolium* (Zahn) Mateo [*H. elisaeaeum* subsp. *subbellidifolium* Zahn] is morphologically close to *H. aragonense* and *H. elisaeaeum*. Mateo & Eijdo (2017b) listed *H. albacetum* Arv.-Touv. (*elisaeaeum/spathulatum*) for Tarragona province.

Hieracium erosulum Arv.-Touv. & Gaut. [*H. candidum* subsp. *erosulum* (Arv.-Touv. & Gaut.) Zahn]*Distribution:* Pc Pe Ppc Ppe ?Cc ?Cs*IUCN category:* LC

Remarks: Its subendemic nature (Sáez & al., 2010) requires confirmation. *Hieracium colluspinese* Mateo, Egido & Gómiz (*erosulum/protoconquense*) was described from Colluspina, Ae (Mateo & al., 2018). The following taxa are morphologically related to *H. erosulum*: *Hieracium adenodontum*, *H. aemulum*, *Hieracium montsaticola* and *H. purpurascens*.

Hieracium flocciferum Arv.-Touv. [*H. flocculiferum* Zahn, nom. illeg.; *H. briziflorum* subsp. *flocculiferum* (Zahn) O. Bolòs & Vigo]*Distribution:* ?Pa Pc ?Pe Ppc Ppe ?Cc*IUCN category:* LC

Remarks: This Pyrenean endemic has taxonomic affinities with *H. candidum* and *H. lawsonii* (Mateo & Egido, 2017b). *Hieracium subflocciferum* (Zahn) Mateo [*H. flocciferum* subsp. *subflocciferum* Zahn; *H. briziflorum* subsp. *subflocculiferum* (Zahn) O. Bolòs & Vigo] is probably conspecific with *H. flocculiferum*.

Hieracium glanduliferum Hoppe [*H. piliferum* subsp. *glanduliferum* (Hoppe) Zahn]*Distribution:* Pa Pc Pe*IUCN category:* LC

Remarks: Closely related to *H. piliferum*. See comments under the latter species.

Hieracium glaucinum Jord. [*H. praecox* Schultz.-Bip.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC

Remarks: This is the most widely distributed species of the genus in northeastern Iberian Peninsula. It is also highly variable species, as would be expected from its wide distribution and the diverse habitats where it grows. The following taxa are related

to *H. glaucinum* or were interpreted as morphologically intermediate between it and other species: *Hieracium glaucosaezii* Mateo & Gómiz (*glaucinum/saezii*) was described from Cardó massif (Mateo & Gómiz, 2019). *Hieracium lycopoides* Arv.-Touv. & Gaut. [*H. sonchoides* subsp. *lycopoides* (Arv.-Touv. & Gaut.) Zahn] is a poorly known species related to *H. glaucinum* and *H. gouanii* (Mateo, 2005, 2016b); it was reported from Pc, Pe, Ppe, O and Cc. *Hieracium maladetae* Arv.-Touv. & Gaut. (*argyreum-phlomoides/glaucinum*) was reported from our area (Mateo & al., 2017a; Mateo & Egido, 2017b). *Hieracium megabellense* Mateo, Egido & Gómiz is related to *H. glaucinum*; it was described from Abella de la Conca (Mateo & al., 2018). *Hieracium montsaticola* Mateo (*erosulum/glaucinum*) was reported from Cc and Cs and later was also listed for Castelló and Terol provinces (Mateo & Egido, 2017b). *Hieracium prietoi* Mateo, L. Sáez, Egido & Gómiz (*montsaticola/murorum*) was described from Cardó massif (Mateo & al., 2017c). *Hieracium salarduense* Mateo & Gómiz (*glaucinum/prenanthoides*) was described from Salardú (Mateo & Gómiz, 2019). *Hieracium tuixentianum* Mateo has taxonomic affinities with *H. amplexicaule*, *H. glaucinum* and *H. phlomoides* (Mateo & Egido, 2017b); it is known from Serra de Cadí (Mateo, 2016a).

Hieracium gouanii Arv.-Touv. [*H. cordifolium* subsp. *gouanii* (Arv.-Touv.) Zahn; ?*H. vernicosum* Arv.-Touv.]

Distribution: ?Pa Pe Ppc Ppe ?Cc

IUCN category: LC

Remarks: Its subendemic nature (Sáez & al., 2010) requires confirmation. The following taxa are related to *H. gouanii* or were interpreted as morphologically intermediate between it and other species: *Hieracium bruchense* Mateo, Egido & Gómiz (*gouanii/neocerinthe*) was reported from El Bruc (Cc) and Garrotxa (Ppe) by Mateo & al. (2018). *Hieracium catalanoalpinum* Mateo, Egido & Gómiz (*bifidum/gouanii*) was described from Alp (Pe) (Mateo & al., 2020). *Hieracium fresserianum* Mateo, Egido & Gómiz (*gouanii/hastile*), which was described from Ribes de Fresser (Pe) is known from several Pyrenean locations (Mateo & al., 2017a). *Hieracium neocoriaceum* Mateo [*H. coriaceum* Willk., nom. illeg.; *H. sonchoides* subsp. *coriaceum* Zahn; *H. attractum* subsp. *coriaceum* (Zahn) Greuter] is taxonomically related to *H. gouanii* and *H. murorum* (Mateo, 2016b). *Hieracium subgouanii* (Zahn) Mateo [*H. cerinthoides* subsp. *subgouanii* Zahn] is morphologically intermediate between *H. gouanii* and *H. gymnocerinthe* (Mateo, 2016b); it was reported from Pa and Pe. *Hieracium beudense* Mateo, Egido & Gómiz was described from Beuda (Ppe) by Mateo & al. (2018); it is morphologically close to *H. gouanii*.

Hieracium gymnocerinthe Arv.-Touv. & Gaut. [*H. cerinthoides* subsp. *gymnocerinthe* (Arv.-Touv. & Gaut.) Zahn]

Distribution: Pc Pe Ppe

IUCN category: LC

Remarks: The following taxa are related to *H. gymnocerinthe* or were interpreted as morphologically intermediate between it and other species: *Hieracium geniceranum* Mateo & Egido was reported from Pc (Mateo & Egido, 2014). *Hieracium gymnoscense* Mateo, Egido & Gómiz (*gymnocerithe/hastile*) was reported from Pa (Mateo & al.,

2017). *Hieracium lividum* Arv.-Touv. (*gymnocerinthelglaucinum*) (see Mateo & Egido, 2017b for synonymy) occurs in the Pyrenees. *Hieracium serracadiense* Mateo (*bifidum/neocerinthe*) is known only from the type location (Adraén, Ppe) (Mateo & Egido, 2015; Mateo & al., 2021). *Hieracium spectandum* Jeanb. & Timb.-Lagr. [*H. pinicola* Arv.-Touv. & Gaut.] (*gymnocerintheljurassicum*) was reported from Pc (Mateo, 2007b, sub *H. pinicola*). *Hieracium vallfogonense* Mateo, Egido & Gómiz (*gymnocerinthelprotoconquense*) is known only from Vallfogona de Ripollès, Ppe (Mateo & al., 2017a).

Hieracium hastile Arv.-Touv. & Gaut. [*H. phlomoides* subsp. *hastile* (Arv.-Touv. & Gaut.) Zahn]

Distribution: ?Pa Pc Ppc Ppe

IUCN category: LC

Remarks: The following taxa are related to *H. hastile*: *Hieracium coleoides* Arv.-Touv. & Gaut. [*H. lamprophyllum* subsp. *coleoides* (Arv.-Touv. & Gaut.) Zahn] (*hastile/ramondii*) was reported from Pc. *Hieracium tossalense* Mateo (*hastile/recoderi*) is known only from Tossals mountain (Ppe). *Hieracium graellsianum* Arv.-Touv. & Gaut. [*H. rupicaprinum* subsp. *graellsianum* (Arv.-Touv.) Zahn], allegedly endemic to Pre-Pyrenees, has taxonomic affinities with *H. candidum* and *H. hastile*.

Hieracium hirsutum Tausch

Distribution: Pe Ppe

IUCN category: DD

Remarks: It was reported from Hortmoier, Garrotxa (Mateo, 2007b). Bolòs & Vigo (1996) reported *H. hirsutum* subsp. *insignitum* (Jeanb. & Timb.-Lagr.) Zahn from eastern Pyrenees (Núria). *Hieracium osormortianum* Mateo, Egido & Gómiz (*hirsutum/umbellum*) was described from Sant Sadurní d'Osormort (Cn) (Mateo & al., 2020).

Hieracium jurassicum Griseb. [*H. juranum* Rapin, nom. illeg. non Griseb.; *H. esseranum* Arv.-Touv. & Gaut.]

Distribution: Pc ?Pe

IUCN category: DD

Remarks: Mateo & Egido (2017b) regarded this species as intermediate between *H. murorum* and *H. prenanthoides*. *Hieracium jurassicum* is known from Alós d'Isil (Sáez & Mateo, 2016); it was also listed for Girona province by Mateo & Egido (2017b).

Hieracium lachenalii Suter [*H. vulgatum* subsp. *lachenalii* (Suter) Zahn; *H. vulgatum* auct.]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: The following taxa are related to *H. lachenalii* or were interpreted as morphologically intermediate between it and other species: *Hieracium altaneuense* Mateo & Egido was described from Alós d'Isil (Pc); see Sáez & Mateo (2016) for its relationships. *Hieracium laevigodentatum* Mateo [*H. acuminatum* auct., non Jord.] (*lachenalii/laevigatum*) is known from Pe (Ripollès). *Hieracium diaphanoides* Lindeb. is

close to *H. lachenalii* and *H. murorum* (Mateo, 2007a); it was listed for Lleida province without precise location. *Hieracium povedanum* Mateo, Egido & Gómiz (*andurense/lawsonii*) was reported from Llès de Cerdanya (Pc) (Mateo & al., 2021).

Hieracium laevigatum Willd.

Distribution: Pe Cn

IUCN category: LC

Remarks: Several subspecies were accepted by Greuter (2008b). Typical *H. laevigatum* is known from Pe (Vigo & al., 2003) whereas subsp. *retardatum* Zahn was reported from Cn (Guilleries) (Bolòs & Vigo, 1996). *Hieracium subgracilipes* (Zahn) P.D. Sell & C. West [*H. laevigatum* subsp. *subgracilipes* Zahn] (*laevigatum/murorum*) was reported from Pc, Vall Fosca (Mateo, 2012).

Hieracium lamprophyllum Scheele

Distribution: Pc Pe

IUCN category: LC

Remarks: This Pyrenean endemic has taxonomic affinities with *H. murorum* and *H. ramondii* (Mateo & Egido, 2017b); see also Sáez & Mateo (2016).

Hieracium lanceolatum Vill.

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: As circumscribed here, *H. lanceolatum* includes *H. inuloides* Tausch (see Mateo & Egido, 2017b). Bolòs & Vigo (1996) recognised two subspecies within *H. inuloides* from our area: subsp. *subvirens* (Arv.-Touv.) Greuter and subsp. *tridentatifolium* (Zahn) Zahn. Uncertainties about the correct interpretation of these names.

Hieracium laniferum Cav.

Distribution: Cs

IUCN category: LC

Remarks: Its distribution is currently overestimated due to taxonomic confusion, mainly with *H. spathulatum*. The following taxa are related to *H. laniferum* or were interpreted as morphologically intermediate between it and other species: *Hieracium mansanetianum* Mateo is taxonomically related to *H. laniferum*, *H. neocerinthae* and *H. amplexicaule* (Mateo, 2021b). It was described from material collected in Ports massif, La Sènia. *Hieracium mansanetianum* is close to *H. rivas-martinezii* Mateo (*laniferum/neocerinthae*), reported from close locations to our area, in Ports massif, Becete and Fredes (Mateo, 2021b).

Hieracium lawsonii Vill. [*H. saxatile* Vill., nom. illeg.]

Distribution: Pa Pc ?Pe ?Ppc ?Ppe ?Cs

IUCN category: LC

Remarks: Its distribution is poorly known due to confusion with other species of the genus. The following species are morphologically close to *H. lawsonii*: *Hieracium*

rupivivum Sudre [*H. lawsonii* subsp. *flocciramum* Zahn] was reported from Pa, Pc, Ppc and Ppe Bolòs & Vigo (1996, sub *H. lawsonii* subsp. *flocciramum*). *Hieracium aureense* Zahn was listed for Lleida province (Mateo & Egado, 2017b). Neither the taxonomic identity of *H. lanifolium* Arv.-Touv. & Gaut. [*H. colmeiroanum* subsp. *lanipalliatum* Zahn] nor its relationships are clear. It was regarded as regarded as intermediate between *H. lawsonii* and *H. rupicrapinum*, or as *aemulumlandurense* (Mateo & Egado, 2017b). Bolòs & Vigo (1996, sub *H. colmeiroanum* subsp. *lanipalliatum* Zahn) reported *H. lanifolium* from Montsec(Ppc).

Hieracium loeflingianum Arv.-Touv. & Gaut.

Distribution: Pe Ppc Ppe

IUCN category: LC

Remarks: According to Mateo (2016b) it is morphologically intermediate between *H. candidum* and *H. glaucinum*. *Hieracium pseudoilerdense* Mateo was reduced to synonymy of *H. loeflingianum* (Mateo & Egado, 2017b). *Hieracium figolsianum* Mateo, Egado & Gómiz, described from Figols i Alinyà (Ppe), is morphologically close to *H. loeflingianum* (Mateo & al., 2020); it was interpreted as morphologically intermediate between *H. glaucinum* and *H. protoconquense*.

Hieracium loscosianum Scheele

Distribution: Cs

IUCN category: LC

Remarks: Its distribution is poorly known due to confusion with other species of the genus.

Hieracium lychnitis Scheele [*H. compositum* auct., non Lapeyr.]

Distribution: Ppe O Cn Cc Cs

IUCN category: LC

Remarks: *Hieracium compositum* Lapeyr. is apparently restricted to southern France (Lewin & Tison, 2016; Mateo & Egado, 2017b). The intermediate plants between *H. gouanii* and *H. racemosum* that correspond to *H. lychnitis* are broadly distributed throughout northeastern Iberian Peninsula and southern France (Mateo & Egado, 2017b). *Hieracium fabregatii* Mateo, endemic to E and NE Iberian Peninsula, is morphologically intermediate between *H. lychnitis* and *H. sabaudum* (Mateo & Egado, 2017b). *Hieracium santhilaricum* Mateo, Egado & Gómiz, described from Sant Hilari de Sacalm, is morphologically intermediate between *H. lychnitis* and *H. murorum* (Mateo & al., 2021).

Hieracium mixtum Froel.

Distribution: Pa Ppc Ppe

IUCN category: LC

Remarks: It is a well-characterised species in having dense and long plumulose hairs, hiding other types of hairs. Known only from Boumort (Ppc), Pa and Port del Comte (Ppe) (Bolòs & Vigo, 1996; Vigo & al., 2003).

***Hieracium murorum* L.**

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Bolòs & Vigo (1996) recognised sixteen subspecies, eleven of which are found in our area. Some of these subspecies are variable, showing many combinations of characters sometimes connected by intermediates. The following taxa are related to *H. murorum* or were interpreted as morphologically intermediate between it and other species: *Hieracium acalephoides* Arv.-Touv. & Gaut. [*H. sonchoides* subsp. *acalephoides* (Arv.-Touv. & Gaut.) Zahn] is taxonomically related to *H. murorum* and *H. nobile* (Mateo & Egido, 2017b); see Bolòs & Vigo (1996) for its distribution. *Hieracium cercsianum* Mateo, Egido & Gómiz (*murorum/protoconquense*) was reported from Cercs (Ppe) and Baltarga (Pe). *Hieracium cotteti* Christener (*humile/murorum*) was reported from Lles de Cerdanya (Mateo, 2005, sub *H. prinzii*). *Hieracium latequeralense* Mateo, Egido & Gómiz (*murorum/queraltense*) was reported from santuari de Queralt (Ppe) (Mateo & al., 2016). *Hieracium murcandidum* Mateo was reported from Ppe (Cadí range) (Mateo, 2005). *Hieracium sociale* (Pau) Mateo & Egido (*atropictum/murorum*) was reported from Pc and Cn (Bolòs & Vigo, sub *H. murorum* subsp. *gentile*).

***Hieracium nargonense* Mateo**

Distribution: Ppc

IUCN category: LC

Remarks: It was described from Boumort massif (Mateo, 2015). The following species are morphologically close to *H. nargonense*: *Hieracium hirtonargonense* Mateo, Egido & Gómiz *H. meganargonense* Mateo, Egido & Gómiz (*abellense/glaucinum*), *H. lanatissimum* Mateo (*candidum/nargonense*) and *H. lanatonargonense* Mateo are known only from Boumort massif. *H. floccinargonense* Mateo was reported from Montant de Tost and Boumort massif. *H. pyrenaolanatum* Mateo, Egido & Gómiz and *H. rubeonargonense* Mateo, Egido & Gómiz (*floccinargonense/nargonense*) were described from the same area (Montanisell) in Boumort massif (Mateo & al., 2017a). *Hieracium paleopyrenaicum* Mateo & Gómiz was described from Odèn, Ppc (Mateo & Gómiz, 2019).

***Hieracium neocerinthe* (Fr.) Zahn [*H. cordifolium* subsp. *neocerinthe* (Fr.) Zahn]**

Distribution: ?Pa ?Pc Pe Ppc Ppe Aw Cn Cc Cs

IUCN category: LC

Remarks: It was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is probably outside the geographical coverage considered in this study (see Mateo & Egido, 2017b), so it is not advisable to consider it as subendemic. *Hieracium lagascanum* Arv.-Touv. & Gaut. [*H. neocerinthe* subsp. *lagascanum* (Arv.-Touv. & Gaut.) Greuter] is morphologically intermediate between *H. gouanii* and *H. neocerinthe* (Mateo, 2016b). *Hieracium gosolianum* Mateo, Egido & Gómiz (*neocerinthe/ramondii*) was described from Cadí range (Ppe) (Mateo & al., 2017a). *Hieracium neoqueraltense* Mateo, Egido & Gómiz (*bastile/neocerinthe*) was described from Queralt mountain (Ppe) (Mateo & al., 2017a).

Hieracium neopicris Arv.-Touv.*Distribution:* Pe*IUCN category:* DD

Remarks: Two subspecies, differing in hairiness of the stems and stems and leaves leaves, were accepted by Bolòs & Vigo (1996): subsp. *neopicris* and subsp. *conyzoides* (Arv.-Touv.) Zahn. Both subspecies can be found in the same location: Tosa d'Alp (Pe). This location was called "La Roxa" by Arvet-Touvet (1913). Vigo (1983) also reported *H. neopicris* subsp. *conyzoides* from a single location in Ribes valley. The taxonomic status of these subspecies is uncertain.

Hieracium niveobarbatoides Mateo [*H. racemosum* Willd. subsp. *niveobarbatum* Zahn]*Distribution:* Ppe Cn*IUCN category:* DD

Remarks: This species, which belongs to the *H. racemosum* group, was regarded as intermediate between *H. lachenalii* and *H. nobile* (Mateo, 2016a). Bolòs & Vigo (1996) and Vigo & al. (2003) reported *H. niveobarbatoides* from Cn and Ppe, respectively.

Hieracium nobile Gren. & Godr.*Distribution:* ?Pa Pe Ppe ?O Cn*IUCN category:* LC

Remarks: Bolòs & Vigo (1996) and Greuter (2008b) recognised several subspecies. The alleged discriminant features for some subspecies are probably not reliable. See also Sáez & al. (2010) and Sáez & Mateo (2016). *H. fagonianum* Arv.-Touv. & Gaut. (*nobile/umbrosum*) was reported from Arcavell (Mateo & al., 2017a).

Hieracium olivaceum Gren. & Godr. [*H. juranum* subsp. *olivaceum* (Gren. & Godr.) Greuter]*Distribution:* Pa Pc Pe Ppc Ppe Cc*IUCN category:* LC

Remarks: Some subspecies recognised by Bolòs & Vigo (1996) and Greuter (2008b) were included in other species or were reduced to synonymy of *H. olivaceum* (Mateo & Egido, 2017b). *Hieracium garrotxense* Mateo, Egido & Gómiz (*ocenium/olivaceum*) was described from Alta Garrotxa (Ppe) by Mateo & al. (2018).

Hieracium patens Bartl. [*H. rectum* auct.]*Distribution:* Subendemic. Pc Pe Ppc Ppe O Cn*IUCN category:* LC

Remarks: The taxonomy of this species is poorly understood and requires a conclusive resolution. Bolòs & Vigo (1996, sub *H. rectum*) and Greuter (2008b) recognised several subspecies in our area. Some of these subspecies are variable, showing many combinations of characters sometimes connected by intermediates. Conversely, some of these subspecies might be worthy of recognition at specific rank (Sáez & Mateo, 2016).

Hieracium phlomoides Froel.

Distribution: Pa Pc Ppc Ppe

IUCN category: LC

Remarks: This species was regarded as subendemic by Sáez & al. (2010). However most of its distribution area is outside the geographical coverage considered by these authors. The taxonomic status of *H. phlomoides* subsp. *pseudoandurensis* de Retz, allegedly endemic to Pyrenees, is uncertain: it was recognised at subspecific level within *H. phlomoides* (Bolòs & Vigo, 1996) or treated as a subspecies of *H. laniferum* (Greuter, 2008b). *Hieracium pseudoloscosianum* Mateo was regarded as morphologically close to *H. phlomoides*. *H. guaranum* Arv.-Touv. & Gaut. (*phlomoides/planchonianum*) was reported from Ppe by Mateo & al. (2017a).

Hieracium pii-fontii Mateo, L. Sáez, Egado & Gómiz

Distribution: Endemic. Cc Cs

IUCN category: EN

Remarks: Apparently endemic to Cardó and Ports massifs. According to Mateo & al. (2017c) *H. pii-fontii* is the correct name for the plant called *H. vinyasianum* Font Quer by several authors (Sáez, 2003; Sáez & al., 2010; Sáez & Mateo, 2016). *Hieracium pii-fontii* is taxonomically related to *H. lawsonii* and *H. neocerinthe*. *Hieracium adenocardoanum* Mateo, L. Sáez, Egado & Gómiz (*amplexicaule/pii-fontii*) was also described from Cardó massif (Mateo & al., 2017c).

Hieracium piliferum Hoppe

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: Closely related to *H. glanduliferum*. Intermediate specimens between *H. glanduliferum* and *H. piliferum* were called *H. amphigenum* Arv.-Touv. & Briq. However, the hybrid nature of these plants needs to be confirmed.

Hieracium planchonianum Timb.-Lagr. & Loret [incl. *H. incisoides*]

Distribution: Pe Ppc Ppe ?Cc ?Cs

IUCN category: LC

Remarks: It is morphologically intermediate between *H. bifidum* and *H. glaucinum* (Mateo, 2021a). Mateo & Egado (2017b) also attributed intermediate characters between *H. bifidum* and *H. glaucinum* to *H. incisoides* Arv.-Touv. & Gaut. and *H. sagittibifidum* Arv.-Touv. & Gaut.

Hieracium prenanthoides Vill.

Distribution: Pa Pc

IUCN category: LC

Remarks: Intermediate specimens between *H. prenanthoides* and *H. murorum*, presumably of hybrid origin, are common in the Pyrenees. The following taxa (whose distribution is still poorly known) are related to *H. prenanthoides* or were interpreted as

morphologically intermediate between it and other species: *H. cynanchoides* Arv.-Touv. & Gaut. [*H. prenanthoides* subsp. *cynanchoides* (Arv.-Touv. & Gaut.) Zahn] (*bifidum/prenanthoides*) was reported from Pa (Mateo, 2012, sub *H. juraniforme*). *Hieracium subtilissimum* Zahn (*prenanthoides/schmidtii*) was reported from Pa (Sáez & Mateo, 2016).

Hieracium pseudocerinthe (Gaudin) W.D.J. Koch

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Reported from Pc (Ninot & al., 2010), Pe and Ppe (Vigo & al., 2003). *Hieracium pseudocerinthe* subsp. *calocerinthe* (Arv.-Touv. & Gaut.) Zahn and subsp. *scapiflorum* (Arv.-Touv.) Greuter [*H. ucenicum* subsp. *scapiflorum* (Arv.-Touv.) Zahn] were reported from Pc (Pallars Jussà) and Pa, respectively.

Hieracium pulmonarioides Vill. [*H. amplexicaule* subsp. *pulmonarioides* (Vill.) Zahn]

Distribution: Pc Pe Cs

IUCN category: LC

Remarks: Its distribution is poorly documented due to confusion with other species of the genus.

Hieracium purpurascens Willk. [*H. tephrocerinthe* Zahn, nom. illeg.]

Distribution: Pc Ppc Ppe O Cc Cs

IUCN category: LC

Remarks: It is morphologically intermediate between *H. erosulum* and *H. neocerinthe* (Mateo & Egado (2017b)). *Hieracium serdanyolae* (Zahn) Mateo [*H. purpurascens* subsp. *serdanyolae* (Zahn) O. Bolòs & Vigo] is related to *H. erosulum* and *H. gouanii* (Mateo & Egado, 2017b); it is known from Berguedà (Ppe). *Hieracium berganum* Arv.-Touv., *H. bowlesianum* Arv.-Touv. & Gaut., *H. cabreranum* Arv.-Touv., *H. corrosifolium* Arv.-Touv. and *H. lloydianum* Arv.-Touv. were reduced to synonymy of *H. purpurascens* (Mateo & Egado, 2017b).

Hieracium ramondii Griseb.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Remarks: Some subspecies recognised by Bolòs & Vigo (1996) within *H. ramondii* were transferred to other species of the genus. The following taxa are related to *H. ramondii* or were interpreted as morphologically intermediate between it and other species: *H. abellense* Mateo & Alejandre (*lanatoaragonense/ramondii*) was reported from Ppc. *Hieracium langei* Fr. occupies an intermediate position between *H. glaucinum* and *H. ramondii* (Sáez & Mateo, 2016; Mateo & al., 2021); it was reported from Pc and Pe.

Hieracium ramosissimum Hegetschw. [incl. *H. viscosum* Arv.-Touv.]

Distribution: Pc Pe O Cn

IUCN category: LC

Remarks: It is morphologically intermediate between *H. amplexicaule* and *H. prenanthoides* (Bolòs & Vigo, 1996; Mateo & Egido, 2017b). *Hieracium viscosum* Arv.-Touv. (*amplexicaule/jurassicum*, see Mateo & Egido, 2017b) is provisionally included here.

Hieracium rapunculoides Arv.-Touv.

Distribution: Pa

IUCN category: DD

Remarks: It is morphologically intermediate between *H. lachenalii* and *H. prenanthoides* (Bolòs & Vigo, 1996; Mateo & Egido, 2017b).

Hieracium recoderi Retz

Distribution: Endemic. Ppe

IUCN category: DD

Remarks: Typical *H. recoderi* is apparently restricted to Queralt (Berguedà) area. The following taxa are related to *H. recoderi*: *Hieracium protoconquense* Mateo, Egido & Gómiz (*queraltense/recoderi*) is known only from the type location (santuari de Queralt). *Hieracium queraltense* de Retz (*neocerinthe/recoderi*) was described on the basis of specimens collected in Queralt; *H. santaniolense* Mateo, Egido & Gómiz is known only from the type location (Montagut i Oix, Ppe); see also Sáez & Guardia Valle (2003a,b).

Hieracium sabaudum L.

Distribution: Pa Pc Pe Cn Cc

IUCN category: LC

Remarks: Several subspecies were recognised by Bolòs & Vigo (1996) and Greuter (2008b). The following taxa are related to *H. sabaudum*: *Hieracium arevacorum* Mateo (*glaucinum/sabaudum*) is distributed throughout northern Iberian Peninsula; it was reported from Camprodon, Pe (Mateo, 2006c) and Vall de Bianya, Ppe (Mateo & Gómiz, 2019). *Hieracium barcinonense* Sennen [*H. sabaudum* subsp. *barcinonense* (Sennen) Greuter] (*racemosum/sabaudum*) (Mateo & Gómiz, 2019) is known from Maresme and Barcelonès. *Hieracium hilariense* Mateo (*amplexicaule/sabaudum*) is known only from a single location in Cn. *Hieracium orthoglossum* Arv.-Touv. & Gaut. [*H. onosmoides* subsp. *orthoglossum* (Arv.-Touv. & Gaut.) Zahn] is a poorly known species showing taxonomic relationships with *H. sabaudum* and *H. schmidtii* (Mateo, 2016b); it was reported from Pc and Ppe.

Hieracium saxifragum Fr. [*H. onosmoides* Fr.]

Distribution: Pc Pe Ppc Ppe O

IUCN category: LC

Remarks: Within this species (including *H. onosmoides* Fr.) several subspecies were recognised by Greuter (2008b) and Bolòs & Vigo (1996). The taxonomy of this species is poorly understood and requires a conclusive resolution.

Hieracium schmidtii Tausch

Distribution: Pa Pc Pe ?Ppe ?Ae ?Aw Cn Cc Cs

IUCN category: LC

Remarks: The following taxa are related to *H. schmidtii* or were interpreted as morphologically intermediate between it and other species: *Hieracium aymericianum* Arv.-Touv. has taxonomic affinities with *H. gymnocerinthe* and *H. schmidtii* (Mateo & Egido, 2017b). Tison & al. (2014) included *H. aymericianum* under the synonymy of *H. bicolor*. *Hieracium stenanthelum* Zahn is related to *H. nobile* and *H. schmidtii*; it is known only from the type location “sous le Port de Salau” (Pc). *Hieracium udialesianum* Mateo, Egido & Gómiz (*schmidtii/sekense*) was described from León province and was also reported from Alinyà (Ppe) (Mateo & al., 2020). *Hieracium vestitum* Gren. & Godr. is very close to *H. schmidtii* or intermediate between the latter species and *H. glaucinum* (Mateo & al., 2021); it is known from Pc Ppc Cs. Previous reports of *H. hypochoeroides* Gibson and *H. hypochoeroides* subsp. *guaranum* (Arv.-Touv. & Gaut.) Greuter [*H. glaucinum* subsp. *guaranum* (Arv.-Touv. & Gaut.) Bolòs & Vigo] are probably referable to *H. vestitum*.

Hieracium solidagineum Fr.

Distribution: Pa Pc Pe Ppc Ppe O Cn Cc Cs

IUCN category: LC

Remarks: This species was regarded as subendemic by Sáez & al. (2010); however most of its distribution area is outside the geographical coverage considered in this study. Bolòs & Vigo (1996) recognised eight subspecies for our area whereas Greuter (2008b) accepted eleven subspecies, most of them endemic to Spain and France. Some of these subspecies are of uncertain taxonomic value. *Hieracium laricense* Timb.-Lagr. & Gaut. [=?*H. coderianum* Arv.-Touv. & Gaut.] is a closely related species showing intermediate characters between *H. murorum* and *H. neocerinthe*.

Hieracium spathulatum Scheele [*H. laniferum* subsp. *spathulatum* (Scheele) Zahn]

Distribution: ?Ppc Cc Cs

IUCN category: LC

Remarks: It is morphologically intermediate between *H. laniferum* and *H. neocerinthe* (Mateo & Egido, 2017b). See Sáez & Mateo (2016) for information about its variability, taxonomy and distribution.

Hieracium umbellatum L.

Distribution: Pa Pc Pe Ppe O Cn

IUCN category: LC

Hieracium umbrosum Jord.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: It has taxonomic affinities with *H. murorum* and *H. prenanthoides* (Mateo & Egido, 2017b). The following taxa are related to *H. umbrosum* or were interpreted as morphologically intermediate between it and other species: *Hieracium*

pyrenaeojurassicum Mateo (*ramondii/umbrosum*) is endemic to the Cantabrian range, Basque Mountains and the Pyrenees (Mateo & Gómiz, 2019); in our area it is known from Pc. *Hieracium alinyense* Mateo, Egido & Gómiz has taxonomic affinities with *H. gouanii*, *H. gymnocerinthe* and *H. umbrosum*; it is known from Alinyà valley and Gombren, Ppe (Mateo & al., 2018, 2021). *Hieracium oroelense* Mateo Mateo, Egido & Gómiz (*glaucinum/umbrosum*), described from central Pyrenees (Huesca province) was reported from Tredòs, Pa (Mateo & Gómiz, 2019).

Hieracium valirense Arv.-Touv. & Gaut.

Distribution: Ppc

IUCN category: DD

Remarks: It is a poorly known species morphologically close to *H. oliveaceum* (see Mateo & Egido, 2017b) allegedly endemic to the central Pyrenees. Neither the taxonomic identity of *H. valirense* nor its variation and distribution have been adequately studied. In our area it was reported from Montsec range (Romo, 1989a; Bolòs & Vigo, 1996).

Hieracium virgultorum Jord. [*H. vasconicum* Martrin-Donos; *H. laurinum* auct.]

Distribution: Pa Pc

IUCN category: DD

Remarks: Reported by Bolòs & Vigo (1996).

Hieracium viride Arv.-Touv.

Distribution: Pa ?Pc Cn

IUCN category: LC

Remarks: It is morphologically intermediate between *H. schimdtii* and *H. umbrosum* (Bolòs & Vigo, 1996; Mateo & Egido, 2017b). Populations from Central Pyrenees (Val d'Aran and Alta Ribagorça) and Montseny massif were referred to subsp. *brumale* (Arv.-Touv.) Zahn and subsp. *submacilentum* (Rouy) Zahn, respectively (Bolòs & Vigo, 1996).

Homogyne alpina (L.) Cass.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Hyoseris radiata L.

Distribution: R Cn Cc

IUCN category: LC

Hyoseris scabra L.

Distribution: R Cc Cs

IUCN category: LC

Hypochaeris glabra L.*Distribution*: Pa Pc Pe Ppc Ae Cn Cc Cs*IUCN category*: LC***Hypochaeris radicata*** L. subsp. *radicata**Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Inula helenium*** L. subsp. *helenium**Non-native*: N*Distribution*: Pe Ppc Ppe S O R Cn*Remarks*: Formerly cultivated and locally naturalised.***Jacobaea adonidifolia*** (Loisel.) Mérat [*Senecio adonidifolius* Loisel.]*Distribution*: Pa Pc Pe Ppc Ppe O Cn Cc*IUCN category*: LC***Jacobaea auricula*** (Coss.) Pelsler [*Senecio auricula* Coss. var. *sicoricus* O. Bolòs & Vigo]*Distribution*: Aw S Cc*IUCN category*: NT*Remarks*: Several subspecies and varieties were recognised within *J. auricula* but are too poorly differentiated both morphologically and geographically to warrant taxonomic recognition (Calvo & Aedo, 2019).***Jacobaea erratica*** (Bertol.) Fourr. [*Senecio aquaticus* subsp. *erraticus* (Bertol.) Tourlet]*Distribution*: R Cn*IUCN category*: CR*Remarks*: Restricted to a few small areas in Empordà plain and Tordera basin (Sáez & al., 2010).***Jacobaea erucifolia*** (L.) G. Gaertn., B. Mey. & Scherb. subsp. *erucifolia* [*Senecio erucifolius* L.]*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Jacobaea leucophylla*** (DC.) Pelsler [*Senecio leucophyllus* DC.]*Distribution*: Subendemic. Pc Pe*IUCN category*: LC***Jacobaea maritima*** (L.) Pelsler & Meijden subsp. *maritima* [*Senecio cineraria* DC. subsp. *cineraria*]*Distribution*: R Cn [Cc] [Cs]*IUCN category*: LC*Remarks*: Cultivated for ornament and locally naturalised in Cc and Cs.

Jacobaea vulgaris Gaertn. subsp. ***vulgaris*** [*Senecio jacobaea* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Jacobaea ×mirabilis (Rouy) B. Bock [*Senecio ×mirabilis* Rouy; *Jacobaea adonidifolia* × *J. leucophylla*]

Distribution: Pe

Jasonia tuberosa (L.) DC.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Jurinea humilis (Desf.) DC.

Distribution: Pc Ppc Ppe Aw Cc Cs

IUCN category: LC

Klasea flavescens (L.) Holub subsp. ***leucantha*** (Cav.) Cantó & Rivas Mart. [*Serratula flavescens* subsp. *leucantha* (Cav.) Cantó & M.J. Costa]

Distribution: S Cc Cs

IUCN category: LC

Klasea nudicaulis (L.) Fourr. [*Serratula nudicaulis* (L.) DC.]

Distribution: Pa Pc Ppc Ppe Ae Aw S Cc Cs

IUCN category: LC

Klasea pinnatifida (Cav.) Talavera [*Serratula pinnatifida* (Cav.) Poir.]

Distribution: Ppc

IUCN category: DD

Kleinia mandraliscae Tineo [*Senecio mandraliscae* (Tineo) H. Jacobsen]

Non-native: C

Distribution: R

Remarks: Known from Cadaqués and Port de la Selva, Alt Empordà (Aymerich, 2016c, 2017b).

Kleinia repens (L.) Haw. [*Senecio serpens* G.D. Rowley]

Non-native: C

Distribution: R

Remarks: Reported from Llançà, Alt Empordà (Pyke, 2008b).

Lactuca perennis L. subsp. ***perennis***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Lactuca plumieri (L.) Gren. & Godr. [*Cicerbita plumieri* (L.) Kirschl.]

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Lactuca saligna L.

Distribution: ?Pa Pe Ppc Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its presence in Pa requires confirmation (see Bolòs & Vigo, 1996).

Lactuca sativa L.

Non-native: C

Distribution: Pc Pe

Remarks: Widely cultivated, sometimes escaped.

Lactuca serriola L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lactuca tenerrima Pourr.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lactuca viminea subsp. *chondrilliflora* (Boreau) St.-Lag.

Distribution: Pa Pe R Cn Cc

IUCN category: LC

Remarks: Its distribution area is probably underestimated due to confusion with *L. viminea* subsp. *viminea*.

Lactuca viminea (L.) J. Presl & C. Presl subsp. *viminea*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Reports of *L. viminea* subsp. *ramosissima* (All.) Arcang. [*L. viminea* var. *grenieri* Rouy] require confirmation (Bolòs & Vigo, 1996).

Lactuca virosa L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lapsana communis L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Lasthenia glabrata Lindl.*Non-native*: C*Distribution*: Cn*Remarks*: Reported from Cabrils, Maresme (Guardiola & Petit, 2020).*Launaea fragilis* (Asso) Pau*Distribution*: Ppc S Cc Cs*IUCN category*: LC*Launaea pumila* (Cav.) Kuntze [*L. fragilis* subsp. *pumila* (Cav.) O. Bolòs & Vigo]*Distribution*: Aw S Cc Cs*IUCN category*: LC*Leontodon crispus* Vill. subsp. *crispus**Distribution*: ?Pe Cc*IUCN category*: VU*Remarks*: So far it is known only from mountain areas in Cc (Sáez & al., 2010); reports from eastern Pyrenees require confirmation.*Leontodon hispidus* L. subsp. *hispidus**Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S Q R Cn Cc*IUCN category*: LC*Leontopodium nivale* subsp. *alpinum* (Cass.) Greuter [*L. alpinum* Cass. subsp. *alpinum*]*Distribution*: Pa Pc Ppe*IUCN category*: NT*Leucanthemopsis alpina* (L.) Heywood subsp. *minima* (Vill.) Holub*Distribution*: Pe*IUCN category*: LC*Remarks*: Endemic to eastern Pyrenees and southwestern Alps (Tomasello & Oberprieler, 2018).*Leucanthemopsis alpina* subsp. *pyrenaica* (Vierh.) Tomasello & Oberpr.*Distribution*: Pa Pc*IUCN category*: LC*Remarks*: Endemic to western and central Pyrenees, from Mt. Aspe eastward up to Andorra (Tomasello & Oberprieler, 2018).

Leucanthemum ageratifolium Pau [*L. vulgare* subsp. *pujiulae* Sennen]

Distribution: Pe Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Konowalik & al. (2015) provide sound evidence for the recognition of this taxon at species level.

Leucanthemum catalaunicum Vogt [*L. vulgare* subsp. *catalaunicum* (Vogt) O. Bolòs & Vigo; *L. maximum* auct.]

Distribution: Subendemic. Pc Pe Ppe

IUCN category: LC

Leucanthemum delarbrei Timb.-Lagr. subsp. *ruscinonense* (Jeanb. & Timb.-Lagr.) Vogt, F. Wagner & Oberpr. [*L. monspeliense* auct., non (L.) H.J. Coste]

Distribution: Subendemic. Pe

IUCN category: NT

Remarks: Endemic to eastern Pyrenees (Vogt, 2019).

Leucanthemum ircutianum DC.

Distribution: ?Pa ?Pc ?Pe

IUCN category: DD

Remarks: In this treatment *L. ircutianum* is regarded as doubtfully native; it was listed for Girona and Lleida provinces (Vogt, 2019).

Leucanthemum maestracense Vogt & F.H. Hellw. [*L. vulgare* subsp. *vogtii* O. Bolòs & Vigo, nom. inval.]

Distribution: Cc Cs

IUCN category: LC

Leucanthemum montserratianum Vogt [*L. vulgare* subsp. *montserratianum* (Vogt) O. Bolòs & Vigo]

Distribution: Endemic. Cc

IUCN category: LC

Remarks: Endemic to Montserrat and Ordal mountains.

Leucanthemum pallens (Perreym.) DC.

Distribution: Pc Pe Ppe Ae Aw Q R Cn

IUCN category: LC

Leucanthemum pyrenaicum Vogt, Konowalik & Oberpr. [*L. vulgare* subsp. *barrelieri* (DC.) O. Bolòs & Vigo; *L. gaudinii* Dalla Torre subsp. *barrelieri* (DC.) Vogt]

Distribution: Pa Pc

IUCN category: LC

Remarks: This is a species of hybrid origin (Konowalik & al., 2015). Reports from Pe (González & al., 2019) require confirmation.

Leucanthemum vulgare Lam.

Distribution: Pa Pc Pe Ppe ?S ?Cc ?Cs

IUCN category: LC

Remarks: A large part of the Pyrenean populations is apparently attributable to this species based on leaf characters and pollen size (P. Aymerich & L. Sáez, unpubl. data). However, its distribution is poorly known. In this study *L. vulgare* is regarded as native although most of the populations are found in semi-natural habitats. Specimens morphologically close to typical *L. vulgare* were reported from S, Cs and Cc, growing in rivers margins (Conesa & Recasens, 1989; Royo, 2006; Curc6, 2007).

Leuzea centauroides (L.) Holub [*Rhaponticum centauroides* (L.) O. Bol6s]

Distribution: Pa Pc Pe

IUCN category: LC

Leuzea conifera (L.) DC. [*Rhaponticum coniferum* (L.) Greuter]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Leuzea repens (L.) D.J.N. Hind [*Rhaponticum repens* (L.) Hidalgo]

Non-native: N

Distribution: Cn

Remarks: A small but apparently well-established population of this species was found in Giron6s county (L6pez Alvarado & al., 2011).

Limbarda crithmoides (L.) Dumort. [*L. crithmoides* subsp. *longifolia* (Arcang.) Greuter;

Inula crithmoides subsp. *mediterranea* Kerguel6n]

Distribution: S R Cn Cc Cs

IUCN category: LC

Logfia gallica (L.) Coss. & Germ. [*Filago gallica* L.]

Distribution: Pa Pe Ae O R Cn Cc Cs

IUCN category: LC

Logfia minima (Sm.) Dumort. [*Filago minima* (Sm.) Pers.]

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc

IUCN category: LC

Mantiscalca duriaei (Spach) Briq. & Cavill.

Distribution: S

IUCN category: LC

Remarks: For its distribution, see Pedrol & al. (2015).

Mantiscalca salmantica (L.) Briq. & Cavill.

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Probably sporadic in Pa (see Bolòs & Vigo, 1996)

Matricaria chamomilla L. [*Chamomilla recutita* (L.) Rauschert]

Distribution: ?Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Old reports from Pa (see Bolòs & Vigo, 1996) require confirmation.

Matricaria discoidea DC.

Non-native: N

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc

Mauranthemum paludosum (Poir.) Vogt & Oberprieler subsp. *paludosum*

Non-native: C

Distribution: Cn ?O

Remarks: Reported from Barcelona (Aymerich, 2020a); also listed for Garrotxa (Oliver, 2019).

Notobasis syriaca (L.) Cass. [*Cirsium syriacum* (L.) Gaertn.]

Distribution: Cs

IUCN category: DD

Remarks: Its occurrence is only documented on the basis of a specimen collected in Horta de Sant Joan, Terra Alta (Rovira & Molero, 1983).

Omalotheca hoppeana (W.D.J. Koch) Sch. Bip. & F.W. Schultz [*Gnaphalium hoppeanum* W.D.J. Koch]

Distribution: Pa Pc Ppe

IUCN category: NT

Omalotheca norvegica (Gunnerus) Sch. Bip. & F.W. Schultz [*Gnaphalium norvegicum* Gunnerus]

Distribution: Pa Pc ?Pe

IUCN category: LC

Remarks: Some specimens show morphological features that suggest the occurrence of events of genetic introgression between this species and *O. sylvatica*.

Omalotheca supina (L.) DC. [*Gnaphalium supinum* L.]

Distribution: Pa Pc Pe

IUCN category: LC

Omalotheba sylvatica (L.) Sch. Bip. & F.W. Schultz [*Gnaphalium sylvaticum* L.]

Distribution: Pa Pc Pe Ppc Ppe ?O Cn

IUCN category: LC

Remarks: See comments under *O. norvegica*. Old reports from O require confirmation.

Onopordum acanthium L. subsp. *acanthium*

Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Onopordum acaulon L.

Distribution: Pc Pe Ppc Ppe S Cc Cs

IUCN category: LC

Remarks: *Onopordum acaulon* var. *uniflorum* (Cav.) Arènes occurs in southern Catalonia (Bolòs & Vigo, 1996; Ortega Olivencia, 2014).

Onopordum corymbosum Willk. subsp. *corymbosum*

Distribution: S Cc

IUCN category: LC

Onopordum illyricum L. subsp. *illyricum*

Distribution: Aw R Cn Cc Cs

IUCN category: LC

Onopordum macracanthum Schousb.

Distribution: S Cc Cs

IUCN category: LC

Onopordum nervosum Boiss.

Distribution: S Cc

IUCN category: LC

Onopordum ×glomeratum Costa [*O. acanthium* subsp. *acanthium* × *O. nervosum*]

Distribution: Aw S

Osteospermum ecklonis (DC.) Norl.

Non-native: C

Distribution: R Cn Cc Cs

Remarks: A fairly common (although under-recorded) garden escape in coastal areas. Reported from Penedès, Costa Brava and Alt Empordà (Aymerich, 2016b,c). A report of «*Dimorphotheca neohybrida*» due to Royo (2006) is probably referable to *Osteospermum ecklonis* (F. Royo, pers. comm., 17 April 2013).

Pallenis spinosa (L.) Cass. subsp. ***spinosa*** [*Asteriscus spinosus* (L.) Schulz Bip. subsp. *spinosus*]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Pallenis maritima (L.) Greuter [*Asteriscus maritimus* (L.) Less.]

Non-native: N

Distribution: R Cn Cc

Remarks: It is a garden escape in our area. Known from Port de la Selva (Alt Empordà), Begur (Baix Empordà), Roda de Berà (Tarragonès) and Ametlla de Mar (Baix Ebre). Royo (2006) reported an alleged native population from Barranc de la Barbiguera (Castelló province) close to the boundary of Cs.

Pascaliala glauca Ortega [*Wedelia glauca* (Ortega) Hicken]

Non-native: N

Distribution: Cn

Remarks: Reported from disturbed places close to Besòs river in Montcada i Reixac, Vallès (Argemí & Izuzquiza, 2017) and La Llagosta (Guardiola & Petit, 2020).

Pentanema conyzae (Griess.) D. Gut. Larr., Santos-Vicente, Anderb., E. Rico & M.M. Mart. Ort. [*Inula conyzae* (Griess.) DC.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: See Gutiérrez-Larruscain & al. (2018) for taxonomy.

Pentanema helenioides (DC.) D. Gut. Larr., Santos-Vicente, Anderb., E. Rico & M.M. Mart. Ort. [*Inula helenioides* DC.]

Distribution: Ppc Ppe Ae Aw S +O R Cn Cc Cs

IUCN category: LC

Remarks: Probably extinct in O (Oliver & Font, 2009).

Pentanema helveticum (Weber) D. Gut. Larr., Santos-Vicente, Anderb., E. Rico & M.M. Mart. Ort. [*Inula helvetica* Weber]

Distribution: Pa Pc Ppc Ppe O

IUCN category: LC

Pentanema montanum (L.) D. Gut. Larr., Santos-Vicente, Anderb., E. Rico & M.M. Mart. Ort. [*Inula montana* L.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Pentanema salicinum (L.) D. Gut. Larr., Santos-Vicente, Anderb., E. Rico & M.M. Mart. Ort. [*Inula salicina* L.]

Distribution: Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Remarks: Reports of *Inula spiraeifolia* L., *I. squarrosa* L. and *I. semiamplexicaulis* Reut. are due to confusion with *Pentanema salicinum*.

Petasites paradoxus (Retz.) Baumg.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Remarks: Mainly restricted to the northern slope of Cadí range (Ppe) and to an area close to Port de la Bonaigua (Pc); probably sporadic in Pa and Pe.

Petasites pyrenaicus (L.) G. López [*P. fragrans* (Vill.) C. Presl]

Non-native: N

Distribution: Ae S R Cn Cc Cs

Phagnalon rupestre (L.) DC. subsp. *rupestre*

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Phagnalon saxatile (L.) Cass.

Distribution: Pe Ppc Ppe ?Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: An old report for Ae (see Bolòs & Vigo, 1996) requires confirmation.

Phagnalon sordidum (L.) Rchb.

Distribution: Pc Ppc Ppe Ae Aw R Cn Cc Cs

IUCN category: LC

Phagnalon* ×*caroli C. Vicioso [*P. rupestre* subsp. *rupestre* × *P. sordidum*]

Distribution: Cc Cs

Phagnalon* ×*hybridum Alb. [*P. saxatile* × *P. sordidum*]

Distribution: R Cs

Phagnalon* ×*intermedium (Lag.) Pau [*P. rupestre* subsp. *rupestre* × *P. saxatile*]

Distribution: Cn Cs

Picnomon acama (L.) Cass. [*Cirsium acarna* (L.) Moench]

Distribution: Ppc Ppe Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Picris hieracioides L. [*P. hieracioides* subsp. *longifolia* (Boiss. & Reut.) P.D. Sell; *P. hieracioides* subsp. *riellii* (Sennen) O. Bolòs & Vigo; *P. hieracioides* subsp. *spinulosa* (Guss.) Arcang.; *P. hieracioides* subsp. *umbellata* (Schrank) Ces.; *P. hieracioides* subsp. *villarsii* (Jord.) Nyman]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: See Talavera & Talavera (2017) for taxonomy.

Picris hispanica (Willd.) P.D. Sell

Distribution: Pc Aw S Cs

IUCN category: LC

Pilosella Hill

Remarks: This taxonomically complex genus is still poorly known in our area. There is no consensus on the taxonomic status of several species listed here. Our treatment (which mainly follows Mateo & Egido, 2017b) should be regarded as provisional. For a detailed and analytical treatment of *Pilosella* see Mateo & Egido (2017b).

Pilosella alturgelliana Mateo

Distribution: Subendemic. Pc ?Pe

IUCN category: DD

Remarks: This species presents intermediate features between *P. breviscapa* and *P. lactucella*. It is apparently endemic to central and eastern Pyrenees.

Pilosella billyana (de Retz) Mateo [*Hieracium billyanum* de Retz]

Distribution: Pa Pc Pe

IUCN category: LC

Remarks: It is morphologically intermediate between *P. hoppeana* and *P. peleteriana* (Mateo & Egido, 2017b).

Pilosella breviscapa (DC.) Soják [*Hieracium breviscapum* DC.]

Distribution: Subendemic. Pa Pc Pe Ppe

IUCN category: LC

Pilosella byzantina (Boiss.) P.D. Sell & C. West [*Hieracium byzantinum* (Boiss.) Zahn]

Distribution: Ppe

IUCN category: DD

Remarks: It is morphologically intermediate between *P. hoppeana* and *P. pseudopilosella*. Mateo & Egido, (2017b) listed *P. byzantina* for Girona and Lleida provinces.

Pilosella capillata (Arv.-Touv.) Mateo [*Hieracium pseudopilosella* subsp. *tenuicaule* Nägeli & Peter]

Distribution: Ppc Aw R Cn Cc

IUCN category: LC

Remarks: It is morphologically intermediate between *P. pseudopilosella* and *P. saussureoides* (Mateo & Egido, 2017b).

Pilosella castellana (Boiss. & Reut.) F.W. Sch. & Sch. Bip. [*Hieracium castellanum* Boiss. & Reut.]

Distribution: Pc

IUCN category: DD

Remarks: Known only from two locations in Pallars Sobirà (Carrillo & al., 1998).

Pilosella fontqueri (Pau) Mateo [*Hieracium fontqueri* Pau]

Distribution: Cc

IUCN category: DD

Remarks: It is morphologically intermediate between *P. leptobrachia* and *P. saussureoides* (Mateo, 2016b). It is known from Prades mountains and, outside checklist area, Castelló province.

Pilosella heteromelana (Zahn) Mateo [*Hieracium hypeuryum* subsp. *heteromelanum* Zahn]

Distribution: Pc Pe ?Ppc ?Ppe Cn

IUCN category: LC

Remarks: It is morphologically intermediate between *P. hypeurya* and *P. peleteriana* (Mateo & Egido, 2017b).

Pilosella hoppeana (Schult.) F. W. Schultz & Sch. Bip. [*Hieracium hoppeanum* Schult.]

Distribution: ?Pa ?Pc

IUCN category: DD

Remarks: Listed for Lleida province without precise location (Mateo, 2006a; Mateo & Egido, 2017b).

Pilosella hypeurocinerea Mateo & Egido

Distribution: Pa Pc

IUCN category: DD

Remarks: This species, morphologically intermediate between *P. capillata* and *P. hypeurya*, was reported by Mateo & Egido (2014a).

Pilosella hypeurya (Peter) Soják [*Hieracium hypeuryum* Peter]

Distribution: Pa Pc Pe Ppe Cn Cc

IUCN category: LC

Remarks: It is morphologically intermediate between *P. hoppeana* and *P. officinarum* (Mateo & Egido, 2017b).

Pilosella lactucella (Wallr.) P.D. Sell & C. West*Distribution:* Pa Pc Pe ?Ppc Ppe O Cn*IUCN category:* LC*Remarks:* The taxonomic status of *P. lactucella* subsp. *nana* (Scheele) M. Laínz is unclear (Tison & al., 2014).***Pilosella leptobrachia*** (Arv.-Touv.) Mateo [*P. anchusoides* auct., non Arv.-Touv.]*Distribution:* ?Pc Ppc Cn Cc*IUCN category:* LC*Remarks:* See Mateo (2012) and Mateo & Egido (2017b) for taxonomy.***Pilosella longisquama*** (Peter) Holub [*Hieracium longisquamum* Peter; *P. pachylodes* Soják, nom. illeg.]*Distribution:* Pc*IUCN category:* DD*Remarks:* It is morphologically intermediate between *P. officinarum* and *P. peleteriana*; reported from Espot valley (Mateo, 2006a). Mateo & Egido (2017b) listed *P. longisquama* for Barcelona and Girona provinces.***Pilosella neohybrida*** (Arv.-Touv.) Mateo [*P. moyensis* Mateo]*Distribution:* Cn Cc*IUCN category:* DD*Remarks:* It is morphologically intermediate between *P. leptobrachia* and *P. peleteriana* (Mateo & Egido, 2017b). Greuter (2008) reduced *P. neohybrida* to synonym of *P. anchusoides*.***Pilosella officinarum*** Vaill. [*Hieracium pilosella* L.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC*Remarks:* Widely distributed in northeastern Iberian Peninsula. It is a variable species, as would be expected from its wide distribution and the diverse habitats where it grows. Several subspecies have been recognised (see Bolòs & Vigo, 1996), some of them not worthy of taxonomic recognition.***Pilosella panticosae*** Mateo*Distribution:* Pc Pe*IUCN category:* DD*Remarks:* This species, morphologically intermediate between *P. lactucella* and *P. pseudopilosella*, was reported by Mateo & Egido (2014a, 2017a,b).

Pilosella peleteriana (Mérat) F.W. Schultz & Sch. Bip. [*Hieracium peleterianum* Mérat]*Distribution*: Pa Pc Pe Cn Cc*IUCN category*: LC*Remarks*: Two subspecies were recognised by Greuter (2008): subsp. *peleteriana* (reported from Pa, Pc, Pe, Cn and Cc) and subsp. *subpeleteriana* (Nägeli & Peter) P.D. Sell (reported from Pa, Pc, Pe and Cn).***Pilosella periphanooides*** (Zahn) Soják [*Hieracium pseudopilosella* subsp. *plantaginoides* Nägeli & Peter]*Distribution*: Cc*IUCN category*: DD*Remarks*: It is morphologically intermediate between *P. peleteriana* and *P. saussureoides* (Mateo & Egido, 2017b). Reported from Cc (Bolòs & Vigo, 1996) and also listed for Barcelona and Lleida provinces (Mateo & Egido, 2017).***Pilosella pintodasilvae*** (de Retz) Mateo [*Hieracium pintodasilvae* de Retz]*Distribution*: Pe Cs*IUCN category*: LC*Remarks*: It is morphologically intermediate between *P. officinarum* and *P. pseudopilosella* (Mateo & Egido, 2017b). *Pilosella pintodasilvae* was reported from Bellver de Cerdanya (Ppe) (Mateo, 2005) and Ports massif (Royo & al., 2008); it was also listed for Barcelona province (Mateo & Egido, 2017).***Pilosella pseudopilosella*** (Ten.) Soják [*Hieracium pseudopilosella* Ten.]*Distribution*: Pe Ppc Cn Cc*IUCN category*: LC***Pilosella saussureoides*** Arv.-Touv. [incl. *P. tardans* (Peter) Soják; *Hieracium tardans* Peter; *Pilosella saussureoides* subsp. *tardans* (Peter) Mateo]*Distribution*: Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category*: LC***Pilosella schultesii*** (F.W. Schultz) F.W. Schultz & Sch. Bip. [*Hieracium schultesii* F.W. Schultz]*Distribution*: Ppe*IUCN category*: DD*Remarks*: It is morphologically intermediate between *P. lactucella* and *P. officinarum*; reported from Catllaràs massif, Ppe (Mateo & al., 2017b). Mateo & Egido (2017b) listed *P. schultesii* for Girona and Lleida provinces.

Pilosella subtardans (Nägeli & Peter) Soják [*Hieracium tardans* subsp. *subtardans* Nägeli & Peter]

Distribution: ?Pa ?Pc ?Pe ?Ppc ?Ppe ?Cn ?Cc Cs

IUCN category: DD

Remarks: It is morphologically intermediate between *P. officinarum* and *P. saussuerioides* (Mateo & Egido, 2017b). *Pilosella subtardans* was listed for Barcelona, Girona, Lleida and Tarragona provinces by Mateo (2006a) and Mateo & Egido (2017b).

Pilosella tardiuscula (Peter) Soják

Distribution: Pc

IUCN category: DD

Remarks: It is morphologically intermediate between *P. lactucella* and *P. saussureoides*; reported by Mateo & Egido (2014a).

Pilosella tricholepia (Nägeli & Peter) Dostál

Distribution: Pc

IUCN category: DD

Remarks: It is morphologically intermediate between *P. capillata* and *P. officinarum*; reported by Mateo & Egido (2014a). Mateo & Egido (2017b) included *P. turolensis* Mateo within the synonymy of *P. tricholepia*.

Pilosella vansoestii (de Retz) Mateo [*Hieracium peleterianum* subsp. *vansoestii* de Retz]

Distribution: Cn

IUCN category: DD

Remarks: It is morphologically intermediate between *P. peleteriana* and *P. pseudopilosella* (Mateo & Egido, 2017b). *Pilosella vansoestii* was reported from Montseny massif (see Bolòs & al., 1986; Bolòs & Vigo, 1996) although it was not listed for the studied area by (Mateo & Egido, 2017b).

Podospermum laciniatum (L.) DC.

Distribution: Pc Pe Ppc Ppe Ae Aw S ?O R Cn Cc Cs

IUCN category: LC

Porophyllum ruderale (Jacq.) Cass. subsp. *ruderale*

Non-native: C

Distribution: Cn

Remarks: Reported from a disturbed riverbed close to Castellbisbal, Vallès (Gómez-Bellver & al., 2016).

Prenanthes purpurea L.

Distribution: Pa Pc Pe Ppc Ppe O Cn

IUCN category: LC

Pseudognaphalium luteoalbum (L.) Hilliard & B.L. Burt [*Helichrysum luteoalbum* (L.) Rchb.; *Gnaphalium luteoalbum* L.]

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Its generic ascription is unclear (Galbany-Casals & al., 2019).

Pseudopodospermum hispanicum (L.) Zaika, Sukhor. & N. Kilian [*Scorzonera hispanica* L.]

Distribution: Pe Ppc Ae Aw S [O] R Cc Cs

IUCN category: LC

Remarks: The taxonomic status and distribution of some taxa subordinate to this species require further study.

Pulicaria arabica (L.) Cass. subsp. ***hispanica*** (Boiss.) Murb. [*Pulicaria paludosa* Link]

Distribution: O Cn Cc

IUCN category: LC

Remarks: Its native status is uncertain.

Pulicaria dysenterica (L.) Bernh. subsp. ***dysenterica***

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Pulicaria odora (L.) Rchb.

Distribution: R Cn

IUCN category: LC

Pulicaria sicula (L.) Moris

Distribution: R Cc

IUCN category: NT

Remarks: It has become extremely rare in Cc by the spread of urbanisation.

Pulicaria vulgaris Gaertn.

Distribution: R + Cn

IUCN category: LC

Ratibida columnifera Wooton & Standl.

Non-native: C

Distribution: Cn

Remarks: Observed in suburban environments of the lower Besòs river, close to Barcelona (S. Argemí in biodiversidadvirtual, 2017).

Reichardia intermedia (Sch. Bip.) Samp.

Distribution: S Cc Cs

IUCN category: LC

Reichardia picroides (L.) Roth*Distribution*: Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC***Rhagadiolus edulis*** Gaertn. [*R. stellatus* subsp. *edulis* (Gaertn.) Arcang.]*Distribution*: R Cc Cs*IUCN category*: LC***Rhagadiolus stellatus*** (L.) Gaertn.*Distribution*: Ppe S R Cn Cc Cs*IUCN category*: LC***Roldana petasitis*** (Sims) H. Rob. & Brettell [*Senecio petasitis* (Sims) DC.]*Non-native*: C*Distribution*: Cn*Remarks*: Reported from ruderal habitats in Barcelona (Macías & Cebrián, 2018).***Rudbeckia hirta*** L.*Non-native*: C*Distribution*: Ppe ?O Cn*Remarks*: Reported from Garrotxa county (Oliver, 2009a, 2019) and Barcelona metropolitan area (Gómez-Bellver & al., 2019a).***Rudbeckia laciniata*** L.*Non-native*: C*Distribution*: Aw*Remarks*: Listed from western Moianès county (Mercadé, 2016).***Santolina benthamiana*** Jord. & Fourr. [*S. chamaecyparissus* subsp. *pecten* Rouy; *S. chamaecyparissus* auct., non L.]*Distribution*: Subendemic. Pc Pe Ppe Ae O Cn*IUCN category*: LC*Remarks*: Intermediate specimens between *S. benthamiana* and *S. ericoides* can be found in Ae and southern eastern Pyrenees.***Santolina chamaecyparissus*** L.*Non-native*: C*Distribution*: Ae Cn Cc*Remarks*: Cultivated for ornament; sometimes escaped. The name *Santolina chamaecyparissus* L. is applied to the commonly cultivated and pentaploid *Santolina* (Giacò & al., 2021).

Santolina ericoides Poir. [*S. chamaecyparissus* subsp. *squarrosa* (DC.) Nyman; *S. chamaecyparissus* auct., non L.]

Distribution: Pc Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Remarks: See Carbajal & al. (2019) for taxonomy.

Saussurea alpina (L.) DC.

Distribution: Pa Pc

IUCN category: LC

Schlagintweitia chamaepicris (Arv.-Touv.) Greuter [*Hieracium chamaepicris* Arv.-Touv.]

Distribution: Pc Pe

IUCN category: LC

Remarks: This Pyrenean endemic was reported from few scattered locations (Vigo, 1983; Bolòs & Vigo, 1996), but, although rare is perhaps overlooked.

Schlagintweitia huteri (Bamb.) Gottschl. & Greuter subsp. *lantoscana* (Burnat & Gremlí) Gottschl. & Greuter [*Hieracium pallidiflorum* Hausm., nom. illeg.]

Distribution: Pa

IUCN category: DD

Remarks: Reported from Pa (Bolòs & Vigo, 1996); old reports from Pe (Vayreda, 1882) require confirmation.

Schkubria pinnata (Lam.) Thell.

Non-native: C

Distribution: Cn Cc

Scolymus hispanicus L. [incl. *S. hispanicus* subsp. *occidentalis* F.M. Vázquez]

Distribution: Aw S R Cn Cc Cs

IUCN category: LC

Scolymus maculatus L.

Distribution: R [Cn]

IUCN category: LC

Remarks: The only occurrence (apparently non-native) in Cn (Barcelona) goes back to 1949, where it was collected in Barcelona by F. Masclans.

Scorzonera angustifolia L.

Distribution: Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Scorzonera aristata DC.*Distribution:* Pa Pc*IUCN category:* LC***Scorzonera humilis*** L.*Distribution:* Pc Pe R*IUCN category:* VU***Scorzonerooides autumnalis*** (L.) Moench subsp. ***autumnalis*** [*Leontodon autumnalis* L.]*Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC*Remarks:* Its presence in Montseny massif (Cn) requires confirmation.***Scorzonerooides carpetana*** (Lange) Greuter subsp. ***carpetana*** [*Leontodon carpetanus* Lange subsp. *carpetanus*]*Distribution:* Cs*IUCN category:* NT***Scorzonerooides carpetana*** subsp. ***duboisii*** (Sennen) Gallego [*S. duboisii* (Sennen) Greuter; *Leontodon duboisii* Sennen]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Scorzonerooides pyrenaica*** (Gouan) Holub subsp. ***pyrenaica*** [*Leontodon pyrenaicus* subsp. *pyrenaicus* Gouan]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Senecio altissimus*** Mill. [*S. laderoi* Pérez Morales, M.E. García & Penas; *S. doria* auct., non L.]*Distribution:* Ppc Ppe Ae Aw S R Cn Cc*IUCN category:* LC*Remarks:* See Calvo & Aedo (2015) for taxonomy and distribution.***Senecio angulatus*** L. fil. [*S. macroglossus* auct. non DC.]*Non-native:* N*Distribution:* R Cn Cc*Remarks:* Cultivated and often naturalised in suburban areas. A future invasive behaviour in the studied area is very likely.***Senecio crassissimus*** Humbert*Non-native:* C*Distribution:* Cc*Remarks:* Reported from Tarragona, in all probability escaped from nearby gardens (Gómez-Bellver & al., 2019a).

Senecio deltoideus Less.*Non-native:* N*Distribution:* Cn*Remarks:* Reported from Barcelona area (Montjuïc and Tibidabo) by Casasayas (1989).*Senecio doronicum* (L.) L. subsp. *longifolius* (Willk.) J. Calvo*Distribution:* Pa Pc Pe ?Ppc ?Ppe ?O*IUCN category:* LC*Remarks:* It has been often confused with *S. provincialis* (J. Calvo, pers. comm.).*Senecio gallicus* Vill.*Distribution:* Pe Ppc S R Cn Cc Cs*IUCN category:* LC*Senecio inaequidens* DC.*Non-native:* I*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*Senecio lagascanus* DC.*Distribution:* Ppe Cs*IUCN category:* DD*Remarks:* Reported from Horta de Sant Joan (Terra Alta) and Vidrà (Osona) by Calvo (2014).*Senecio lividus* L.*Distribution:* Pc Pe Ae R Cn Cc*IUCN category:* LC*Senecio malacitanus* Huter [*S. nevadensis* subsp. *malacitanus* (Huter) Greuter; *S. linifolius* (L.) L., nom. illeg., non L.]*Distribution:* Cs*IUCN category:* DD*Remarks:* Reported from a single location in the Ebre Delta (Curcó, 2007); probably sporadic.*Senecio provincialis* (L.) Druce [*S. doronicum* subsp. *gerardii* (Godr. & Gren.) Nyman, *S. gerardii* Godr. & Gren.]*Distribution:* Pe Ppc Ppe Ae Aw ?O R Cn Cc Cs*IUCN category:* LC*Remarks:* The hybrid between *S. provincialis* and *S. lagascanus* was reported from a single location in Segarra (Calvo & al., 2013a). However, this plant is probably referable to *S. provincialis* (Calvo, 2014).

Senecio pseudolongifolius J. Calvo [*Cineraria filifolia* Thunb.; *Senecio lineatus* auct., non (L. fil.) DC.]

Non-native: N

Distribution: R Cn

Remarks: Cultivated for ornament in coastal gardens. First reported as escaped in Cap de Creus Peninsula (see Casasayas, 1989, sub *S. lineatus* (L. fil.) DC.); later a naturalised population was found in Tossa de Mar, Selva (Aymerich, 2016d). Also known as casual in Blanes, Selva. See Calvo & al. (2013b) for the nomenclature and taxonomy of this species.

Senecio pterophorus DC.

Non-native: I

Distribution: Aw R Cn Cc

Senecio pyrenaicus L.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Senecio sylvaticus L.

Distribution: Pa

IUCN category: DD

Remarks: Reported from Aran valley (Nuet, 2019). An old report from Cerdanya (Pe) due to Vayreda (voucher at BC-Vayreda) is referable to *Senecio vulgaris* (J. Calvo, pers. comm., 12 Nov 2014). Another report from Das, Cerdanya (González & Nuet, 2008) is due to confusion with *Jacobea vulgaris* (BCN 47258).

Senecio viscosus L.

Distribution: Pa Pc Pe Ppc Ppe O R Cn Cc Cs

IUCN category: LC

Senecio vulgaris L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Serratula tinctoria L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn

IUCN category: LC

Silybum eburneum Coss. & Durieu [*S. eburneum* var. *hispanicum* Willk.]

Distribution: S

IUCN category: DD

Silybum marianum (L.) Gaertn.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Solidago altissima L. subsp. *altissima* [*S. canadensis* subsp. *altissima* (L.) O. Bolòs & Vigo]

Non-native: I

Distribution: R Cn

Remarks: Closely related to *S. canadensis*. Although *S. altissima* was not listed in *Flora iberica*, its presence has been confirmed, as Casasayas (1989) indicated. Further research is needed to clarify the identity and distribution of taxa belonging to *Solidago* sect. *Solidago* subsect. *Triplinerviae* (Torrey & A. Gray) G.L. Nesom in the studied area.

Solidago canadensis L.

Non-native: N

Distribution: Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs

Remarks: According to Bolòs & Vigo (1996) this is the species of the *S. canadensis* complex most widely distributed in Catalonia. The respective distribution areas of the species recognised within the *S. canadensis* complex are not clearly defined at present; therefore, the region assignment here provided is, in some cases, approximate. Further research is needed to clarify the identity and distribution of taxa belonging to *Solidago* sect. *Solidago* subsect. *Triplinerviae* in the studied area.

Solidago gigantea Aiton [*S. serotina* Aiton, nom. illeg., non Retz.]

Non-native: N

Distribution: Pc Pe Ppe Cc

Remarks: A very rare and local alien species. It is known in natural habitats only in Segre river at Cerdanya. Further research is needed to clarify the identity and distribution of taxa belonging to sect. *Solidago* subsect. in the studied area.

Solidago virgaurea L. [*S. virgaurea* subsp. *minuta* (L.) Arcang.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Soliva sessilis Ruiz & Pav.

Non-native: N

Distribution: Cn

Remarks: Reported from Barcelona area (Pyke, 2013b) and Santa Coloma de Farners, Selva (Vilar & al., 2018); locally naturalised near gardens.

Sonchus aquatilis Pourr. [*S. maritimus* subsp. *aquatilis* (Pourr.) Nyman]

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sonchus asper (L.) Hill subsp. *asper*

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sonchus bulbosus (L.) N. Kilian & Greuter [*Leontodon bulbosus* L.; *Aetheorhiza bulbosa* (L.) Cass.]

Distribution: R Cn Cc Cs

IUCN category: LC

Sonchus crassifolius Willd.

Distribution: S

IUCN category: EN

Remarks: It is considered to be declining due to loss of habitat and hybridisation with *S. maritimus* and *S. ×novocastellanus*.

Sonchus maritimus L.

Distribution: S R Cn Cc Cs

IUCN category: LC

Sonchus oleraceus L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sonchus tenerrimus L.

Distribution: Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Sonchus ×novocastellanus Cirujano [*S. crassifolius* × *S. maritimus*]

Distribution: S

Sphagneticola trilobata (L.) Pruski [*Wedelia trilobata* (L.) Hitchc.]

Non-native: C

Distribution: Cn

Remarks: Reported from Cabrils, Maresme (Guardiola & Petit, 2020).

Staelina dubia L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Symphyotrichum lanceolatum (Willd.) G.L. Nesom [*Aster lanceolatus* Willd.]

Non-native: N

Distribution: Pa Pe Ppe

Remarks: See Aymerich (2019) for its distribution. The plants traditionally assigned to *S. novii-belgii* (L.) G.L. Nesom [*Aster novii-belgii* L.] are referred here to *S. lanceolatum* or *S. ×salignum*.

Symphotrichum novae-angliae (L.) G.L. Nesom [*Aster novae-angliae* L.]

Non-native: C

Distribution: Pe Ppe O

Remarks: Cultivated and causal in roadsides.

Symphotrichum pilosum (Willd.) G.L. Nesom [*Aster pilosus* Willd.]

Non-native: I

Distribution: Pe Ppe Ae Aw O R Cn Cc

Remarks: A future, wider naturalisation in the studied area is feasible.

Symphotrichum squamatum (Spreng.) G.L. Nesom [*Aster squamatus* (Spreng.) Hieron.]

Non-native: I

Distribution: Pc Ppc Ppe Ae Aw S O R Cn Cc Cs

Symphotrichum ×*salignum* (Willd.) G.L. Nesom [*Aster salignus* Willd.; *S. lanceolatum* ×*S. novi-belgii*]

Non-native: N

Distribution: Pe Ppe ?O

Remarks: See Aymerich (2019) for its distribution. The plants traditionally assigned to *S. novii-belgii* (L.) G.L. Nesom [*Aster novii-belgii* L.] are referred here to *S. lanceolatum* or *S. ×salignum*.

Tagetes minuta L.

Non-native: N

Distribution: Pc Ppe Ae S O R Cn Cc Cs

Tagetes patula L.

Non-native: C

Distribution: Pc Pe Ppe O Cn Cc Cs

Tagetes terniflora Kunth

Non-native: C

Distribution: +Cn

Remarks: It was collected in the surroundings of Barcelona in the late 19th and early 20th century (Crespo, 2019).

Tanacetum balsamita L.

Non-native: C

Distribution: Pc Pe Ppe R Cn Cc Cs

Tanacetum cinerariifolium (Trevir.) Sch. Bip.

Non-native: I

Distribution: Aw Cn Cc Cs

Tanacetum corymbosum (L.) Sch. Bip.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Tanacetum parthenium*** (L.) Sch. Bip.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* Formerly cultivated and locally naturalised.***Tanacetum vulgare*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain.***Taraxacum*** F.H. Wigg*Remarks:* The treatment of this taxonomically intricate genus follows Galán (2017) with additions and changes as proposed in the recent literature. The distribution of the species listed here is in most cases poorly documented.***Taraxacum acutangulum*** Markl. [*T. stenocentrum* Florstr.; *T. oxyodon* M.P. Chr.]*Distribution:* Ppe*IUCN category:* LC*Remarks:* Reported from Barcelona and Lleida provinces (Galán, 2017) based on the following herbarium specimens (A. Galán, pers. comm.): Berguedà county, Ppe (BCN 25986) and Bellver de Cerdanya (JACA 78057).***Taraxacum aginense*** Hofstra*Distribution:* O R Cn*IUCN category:* DD*Remarks:* Morphologically close to *T. mediterraneum*; endemic to W-SW Europe. Reported by Mercadal & Galán de Mera (2017).***Taraxacum amphilobum*** M.P. Christ.*Distribution:* ?Pa Pc*IUCN category:* LC*Remarks:* Its distribution is poorly known. It seems to be a close relative to *T. acutangulum*. Known from Estany Monastero in Espot valley (BCN 25971).***Taraxacum andorriense*** Sahlin*Distribution:* ?Pa Pc Pe*IUCN category:* LC*Remarks:* Endemic to Pyrenees (Andorra, France and Girona, Huesca and Lleida provinces). Known from Carlat valley, Pe (MAF 57394) and Escornacabres pond (Pallars Sobirà), Pc (MA 614826) (A. Galán, pers. comm.).

Taraxacum aragonicum Sahlin*Distribution:* Ppe*IUCN category:* DD*Remarks:* Endemic to Pyrenees (Huesca, Navarra and Lleida provinces); it was reported from a single location in the Cadí range [Serra de Cortils: BCN 26140].***Taraxacum bargusicum*** Sahlin*Distribution:* S R*IUCN category:* DD*Remarks:* Morphologically intermediate between *T. rubicundum* and *T. braun-blanquetii*. *Taraxacum bargusicum* was reported from Lleida and Girona provinces by Galán (2017) based on the following herbarium specimens (A. Galán, pers. comm.): Agullana, Alt Empordà (HGI 18982) and Maldà, Urgell (BC 25826).***Taraxacum blomgrenii*** G.E. Haglund*Distribution:* Cn*IUCN category:* DD*Remarks:* Morphologically close to *T. polyodon*. *Taraxacum blomgrenii* was reported from Montseny massif by Sáez & al. (2015).***Taraxacum braun-blanquetii*** Soest*Distribution:* Ppe Cn*IUCN category:* DD*Remarks:* Morphologically related to *T. rubicundum*. *Taraxacum braun-blanquetii* was reported from (Lleida province) (Galán, 2017) and Montseny massif (Sáez & al., 2015a) based on the following herbarium specimens (A. Galán, pers. comm.): Abella de la Conca, Pallars Jussà (HBIL s.n) and Riera de Vallfornès, Vallès Oriental (USP 3180).***Taraxacum cacuminatum*** G.E. Haglund*Distribution:* Cn*IUCN category:* DD*Remarks:* Reported from Montseny massif (Sáez & al., 2015a).***Taraxacum catalanum*** Soest*Distribution:* S R Cn Cc*IUCN category:* LC*Remarks:* Morphologically close to *T. marginellum*. *Taraxacum catalanum* was listed for Barcelona, Girona Lleida and Tarragona provinces (Galán, 2017) based on the following herbarium specimens (A. Galán, pers. comm.): Ventalló, Alt Empordà (HGI 16632), Balaguer-Sentiu de Sió, Noguera (MA 448090) and Mont-ral, Alt Camp (BCN 26144).

Taraxacum chelelobatum Sahlin*Distribution:* Pa*IUCN category:* DD*Remarks:* Reported from Lleida province (Galán, 2017) based on the following herbarium specimen in Aran valley (A. Galán, pers. comm.).***Taraxacum ciliare*** Soest*Distribution:* R Cn*IUCN category:* DD*Remarks:* Morphologically close to *T. litophyllum*. Endemic to W-SW Europe; see Mercadal & Galán de Mera (2017) for its distribution.***Taraxacum cordatum*** Palmgr. [*T. aequilobum* Dahlst.; *T. amblycentrum* Dahlst.]*Distribution:* Ppe Cc*IUCN category:* LC*Remarks:* Known from Martorell, Baix Llobregat (BCN 26040) and Sant Joan de les Abadesses, Ripollès (BCN 2439) (A. Galán, pers. comm.).***Taraxacum decastroi*** A. Galán & Vicente Orell.*Distribution:* Endemic. Pc*IUCN category:* DD*Remarks:* It is species is related, on morphological grounds, to *T. reophilum* Soest from the Alps. *Taraxacum decastroi* is known only from Aigüestortes area (Alta Ribagorça), where it grows in very humid soils in *Abies alba* forests (Galán de Mera & Vicente Orellana, 2010).***Taraxacum dentilobum*** Soest*Distribution:* Pc R Cc Cs*IUCN category:* LC*Remarks:* Endemic to eastern Iberian Peninsula. This species was listed for Barcelona, Girona, Lleida and Tarragona provinces (Galán, 2017) based on the following herbarium specimens (A. Galán, pers. comm.): Garraf massif (MA 484160), Sant Pere Pescador, Alt Empordà (USP 3170), Estaís, Pallars Sobirà (BCN 25966) and Flix, Ribera d'Ebre (BCN 26047).***Taraxacum ekmanii*** Dahlst.*Distribution:* Pc Cn*IUCN category:* LC*Remarks:* Listed for Barcelona and Lleida provinces (Galán, 2017) based on the following herbarium specimens (A. Galán, pers. comm.): Roca del Vallés, Vallès Oriental (JACA 22970) and Durro, Alta Ribagorça (BCN 25964); also reported from Montseny massif by Sáez & al. (2015).

Taraxacum elegantius Kirschner, H. Øllg. & Štěpánek*Distribution:* Aw R Cn Cc*IUCN category:* LC*Remarks:* Listed for Barcelona, Girona, Lleida and Tarragona provinces (Galán, 2017) based on the following herbarium specimens (A. Galán, pers. comm.): Figueres, Alt Empordà (MA 139496), El Miracle, Solsonès (MA 443621), Poblet, Conca de Barberà (BCN 26143) and La Riba, Alt Camp (BCN 26146); also reported from Montseny massif by Sáez & al. (2015).***Taraxacum gaditanum*** Talavera [*T. megalorhizon* auct., non (Forssk.) Hand.-Mazz.]*Distribution:* Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Endemic to the Iberian Peninsula and the Balearic Islands; apparently widespread in our area.***Taraxacum gasparrinii*** Lojac. [? *T. laevigatum* auct.]*Distribution:* Pe Ppe Aw O Cn Cc Cs*IUCN category:* LC***Taraxacum glandiforme*** Sonck*Distribution:* Pc*IUCN category:* DD*Remarks:* Endemic to Pyrenees (France, Andorra and provinces of Huesca and Lleida). Galán (2017) reported it based on the following herbarium specimens: Durro, Alta Ribagorça (BCN 26065), Els Estanyets, Pallars Sobirà (BCN 26061) and Els Encantats, Pallars Sobirà (BCN 25969).***Taraxacum iberanthum*** Sahlén*Distribution:* ?Pa Pc*IUCN category:* DD*Remarks:* Endemic to central Pyrenees (Galán, 2017), between Canfranc and Vallferrera valleys.***Taraxacum incisum*** H. Øllg.*Distribution:* Cn ?Cc*IUCN category:* DD*Remarks:* Morphologically close to *T. polyodon*. *Taraxacum incisum* was collected in Bellaterra, Vallès (MA 648659, L. Sáez LS5311).***Taraxacum infidulum*** G.E. Haglund & Saarsoo*Distribution:* Pa*IUCN category:* DD*Remarks:* This species is morphologically related to *T. cordatum*. Galán (2017) listed *T. infidulum* for Lleida province based on the following herbarium specimen (A. Galán, pers. comm.): Varradòs valley (MA 511734).

Taraxacum lacistrum Sahlin*Distribution:* Pa*IUCN category:* DD

Remarks: This species is morphologically related to *T. cordatum*. Galán (2017) listed *T. lacistrum* for Lleida province based on the following herbarium specimen (A. Galán, pers. comm.): Bagergue, Aran valley (MA 511718).

Taraxacum lambinonii Soest*Distribution:* Aw Cn*IUCN category:* LC

Remarks: Morphologically close to *T. marginellum*. Galán (2017) listed *T. lambinonii* for Barcelona and Lleida provinces based on the following herbarium specimens (A. Galán, pers. comm.): Terrassa, Vallès (MA 443552) and El Miracle, Solsonès (MA 443620); also reported from Montseny massif by Sáez & al. (2015).

Taraxacum laticordatum Markl.*Distribution:* Pa*IUCN category:* DD

Remarks: Listed for Lleida province (Galán, 2017) based on the following herbarium specimen (A. Galán, pers. comm.): Lés, Aran valley (MA 597997).

Taraxacum leucopodum G.E. Haglund*Distribution:* Cc*IUCN category:* DD

Remarks: Listed for Tarragona province (Galán, 2017), based on the following herbarium material (A. Galán, pers. comm.): Tarragona (MA 443554).

Taraxacum litophyllum De Langhe & Soest*Distribution:* Endemic. Pc*IUCN category:* DD

Remarks: Only known by the type material collected in Aigüestortes i Estany de Sant Maurici National Park, at 1200 m a.s.l. (Galán, 2017).

Taraxacum marginellum H. Lindb.*Distribution:* Ppc Cc*IUCN category:* LC

Remarks: Typical *T. marginellum* was listed for Lleida and Tarragona provinces (Galán, 2017) based on the following herbarium specimens (A. Galán, pers. comm.): Bóixols, Pallars Jussà (JACA 80271) and, between Coll d'Alforja and Arbolí (JACA s.n.).

Taraxacum mediterraneum Soest*Distribution:* R Cn*IUCN category:* DD

Remarks: Endemic to western Mediterranean Region; see Mercadal & Galán (2017) for its distribution.

Taraxacum mimosinum Sahlin*Distribution:* Ppc*IUCN category:* DD*Remarks:* It is a microspecies related to *T. polyodon*, rare in the Iberian Peninsula. It was collected in Bonrepòs, Pallars Jussà (HBIL s.n.) (A. Galán, pers. comm.).***Taraxacum montesignum*** Soest [*T. laciniatulum* Kirschner & Štěpánek; *T. laciniatum* Sennen, nom. illeg.]*Distribution:* Pa Pc Pe R Cn Cc*IUCN category:* LC*Remarks:* Morphologically close to *T. marginellum*; recorded from central and eastern Iberian Peninsula.***Taraxacum obovatum*** (Willd.) DC. [*T. obovatum* subsp. *ochrocarpum* Soest]*Distribution:* ?Pc Ppc Ppe Aw S R Cc Cs*IUCN category:* LC***Taraxacum panalpinum*** Soest [*T. alpinum* (Hoppe) Hegetschw., comb. illeg.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Remarks:* An old report of *T. officinale* var. *alpinum* (Willkomm in Willk. & Lange, 1870) from Montserrat mountain (Cc) is in all probability erroneous.***Taraxacum perminiatum*** Soest*Distribution:* Pe*IUCN category:* DD*Remarks:* Morphologically close to *T. marginellum*. A single collection site for *T. perminiatum* is known: Cadí tunnel in Cerdanya (BCN 25920) (A. Galán, pers. comm.).***Taraxacum pintosilvae*** Soest [*T. adamii* auct.]*Distribution:* R*IUCN category:* DD*Remarks:* This acidophilous species is known from Alt Empordà (HGI 22103) (A. Galán, pers. comm.).***Taraxacum polyodon*** Dahlst.*Distribution:* Pc Pe Ppe Cn*IUCN category:* LC*Remarks:* Listed for Barcelona Girona and Lleida Girona provinces (Galán, 2017) based on the following herbarium specimens (A. Galán, pers. comm.): Bagà, Berguedà (BCN 25982), Moixeró mountain, Cerdanya (BCN 25981) and Caldes de Boí, Alta Ribagorça (BCN 25965). Sáez & al. (2015a) reported this species from Montseny massif.

Taraxacum pyrenaicum Reut. [*T. dissectum* auct.]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC*Remarks:* Endemic to Pyrenees. Several authors (Richards & Sell, 1980; Bolòs & Vigo, 1996) have included *T. pyrenaicum* within *T. dissectum* (Ledeb.) Ledeb. A closely related microspecies, *Taraxacum pyropum* Soest, was recognised by Bolòs & Vigo (1996).***Taraxacum pyropappum*** Boiss. & Reut. [*T. serotinum* subsp. *pyropappum* (Boiss. & Reut.) O. Bolòs, Vigo, Masalles & Ninot]*Distribution:* Pc Ppc Ae Aw S Cc Cs*IUCN category:* LC***Taraxacum raii*** (Gouan) Gray [*T. brachysquameum* Soest]*Distribution:* O R Cn*IUCN category:* NT*Remarks:* Endemic to S France and NE Iberian Peninsula; see Mercadal & Galán (2017) for its distribution.***Taraxacum rubicundum*** (Dahlst.) Dahlst. [*T. erythrospermum* Besser subsp. *rubicundum* Dahlst.; *T. rubicundum* subsp. *monspeliense* Dahlst.]*Distribution:* ?Pe Ppc R Cn*IUCN category:* LC*Remarks:* Known from La Jonquera, Alt Empordà (HGI 14089) and Bonrepòs, Pallars Jussà (HBIL s.n.) (A. Galán, pers. comm.); also reported from Montseny massif (Sáez & al., 2015).***Taraxacum schroeterianum*** Hand.-Mazz.*Distribution:* Ppe*IUCN category:* DD*Remarks:* A single collection site for this species is known: Arsèguel, Alt Urgell (MA 529220) (A. Galán, pers. comm.).***Taraxacum tarraconense*** Sennen [*T. stenospermum* Sennen; *T. ibericum* Soest]*Distribution:* Ppc Aw O R Cn Cc Cs*IUCN category:* LC*Remarks:* On the basis of leaves and phyllaries characters Galán (2013) included *T. ibericum* and *T. stenospermum* within the synonymy of *T. tarraconense*.***Taraxacum vastisectiforme*** Hagend., Soest & Zevend.*Distribution:* Ppe*IUCN category:* DD*Remarks:* This microspecies related to *T. polyodon*, is only known from Netherlands and northern Iberian Peninsula (Huesca and Barcelona provinces). A single collection site for this species is known in our area: Saldes, Berguedà (BCN 25978) (A. Galán, pers. comm.).

Taraxacum vinosum Soest*Distribution:* Endemic. Cn*IUCN category:* EN*Remarks:* This is a very rare species restricted to a small area in the Selva plain (Puig Marí and Tordera river) (Sáez & Guàrdia Valle, 2003c). Several authors (Kirschner & al., 2008; Galán, 2017) have recognised this taxon at species level.***Thrinicia hispida*** Roth [*Leontodon taraxacoides* subsp. *hispidus* (Roth) Kerguélen; *L. rothii* Ball, nom. illeg.; *L. saxatilis* subsp. *rothii* Maire; *L. taraxacoides* subsp. *longirostris* Finch & P.D. Sell]*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Thrinicia saxatilis*** (Lam.) Holub & Moravec [*Leontodon saxatilis* Lam.]*Distribution:* S O R Cn Cc Cs*IUCN category:* LC***Thrinicia tuberosa*** (L.) DC. [*Leontodon tuberosum* L.]*Distribution:* Ppe R Cn Cc Cs*IUCN category:* LC***Tolpis umbellata*** Bertol. [*T. barbata* (L.) Gaertn. subsp. *umbellata* (Bertol.) Jahand. & Maire]*Distribution:* R Cn Cc*IUCN category:* LC***Tragopogon angustifolius*** Willd. [*T. crocifolius* auct., non L.]*Distribution:* Aw Cc*IUCN category:* DD*Remarks:* Two collection sites for this species are known: Santa María de Oló, Bages (MA 415443) and Vilanova de Prades, Conca de Barberà (BC 600684).***Tragopogon castellanus*** Levier [*T. crocifolius* auct., non L.]*Distribution:* Ppc*IUCN category:* DD*Remarks:* Its distribution is probably more widespread than currently documented. It was collected in Salàs, Pallars Jussà (JACA 559087) (G. Blanca, pers. comm., 22 Oct 2015).***Tragopogon crocifolius*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw Cn Cc Cs*IUCN category:* LC

Tragopogon dubius Scop. [*T. major* Jacq., *T. dubius* subsp. *major* (Jacq.) Vollm.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Tragopogon lamottei Rouy [*T. pratensis* L. subsp. *lamottei* (Rouy) O. Bolòs & Vigo; *T. pratensis* L. subsp. *minor* auct., non (Mill.) Hartm.]

Distribution: Pa ?Pc Pe ?Ppc Ppe O R Cn ?Cc

IUCN category: LC

Remarks: Its distribution is probably more widespread than currently documented.

Tragopogon porrifolius L. [incl. *T. australis* Jord.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Tragopogon porrifolius subsp. *eriospermus* (Ten.) Greuter [*T. porrifolius* subsp. *porrifolius* auct.]

Non-native: C

Distribution: Ae O

Remarks: Formerly cultivated and locally naturalised.

Tragopogon pratensis L.

Distribution: Pc Pe Ppe R Cn

IUCN category: LC

Tripleurospermum inodorum (L.) Sch. Bip. [*Matricaria maritima* subsp. *inodora* (L.) Soó; *M. perforata* Mérat]

Distribution: Pa Pc Pe Ppe O [Cn]

IUCN category: LC

Tripleurospermum maritimum (L.) W.D.J. Koch [*Matricaria maritima* L.]

Distribution: Pa Pc Pe Ppc Ppe [O] Cn Cc

IUCN category: LC

Remarks: There are uncertainties over its native status at many sites; probably sporadic in O.

Tripolium pannonicum (Jacq.) Dobrocz. subsp. ***tripolium*** (L.) Greuter [*Aster tripolium* L.]

Distribution: R Cn Cc Cs

IUCN category: LC

Trommsdorffia maculata (L.) Bernh. [*Hypochaeris maculata* L.; *H. pyrenaica* Sennen]

Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn

IUCN category: LC

Tussilago farfara L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Tyrinnus leucographus*** (L.) Cass.*Distribution:* R Cc Cs*IUCN category:* LC***Urospermum dalechampii*** (L.) F.W. Schmidt*Distribution:* Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Urospermum picroides*** (L.) F.W. Schmidt*Distribution:* Ppc Ae Aw S Cn Cc Cs*IUCN category:* LC***Ursinia nana*** DC. subsp. *nana**Non-native:* N*Distribution:* Cc*Remarks:* A small but apparently well-established population was found in Priorat county. See Molero (2009) for detailed information about reproductive biology, ecology and population data.***Volutaria tubuliflora*** (Murb.) Sennen*Non-native:* C*Distribution:* Cn*Remarks:* Reported from Barcelona (Devesa & López Martínez, 2014b).***Willemetia stipitata*** (Jacq.) Dalla Torre [*Calycocorsus stipitatus* (Jacq.) Rauschert]*Distribution:* Pc*IUCN category:* LC*Remarks:* Font & Vigo (2010) listed this species for UTM square 31TCH52 based on A. Perez-Haase, who found *W. stipitata* in estanys de Guerossos, Pallars Sobirà (A. Pérez-Haase, pers. comm., 7 May 2020).***Xanthium orientale*** L.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Remarks:* For *Xanthium* L. the taxonomic treatment proposed by Tomasello (2018) is followed here.***Xanthium spinosum*** L.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Xanthium strumarium L.*Distribution:* ?Pa ?Pc ?Pe ?Ppc Ppe Ae ?Aw S O R Cn Cc ?Cs*IUCN category:* LC***Xeranthemum annuum*** L.*Non-native:* N*Distribution:* Pc Pe Ppe Aw S R***Xeranthemum inapertum*** (L.) Mill.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Youngia japonica*** (L.) DC.*Non-native:* C*Distribution:* Cc*Remarks:* Casual in planted areas of the port district of Barcelona (Pyke, 2016).**VIBURNACEAE*****Adoxa moschatellina*** L.*Distribution:* +Cn*IUCN category:* RE*Remarks:* Not found recently in Montseny massif, where it was reported based upon a single herbarium specimen (BC-Trèmols) collected in 1869 (Romo, 1987).***Sambucus ebulus*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Sambucus nigra*** L. subsp. *nigra**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Sambucus racemosa*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC***Viburnum lantana*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Viburnum opulus*** L. subsp. *opulus**Distribution:* Pa Pc [Ppe] [Ae] [O]*IUCN category:* LC*Remarks:* Native in central Pyrenees; casual or naturalised elsewhere.

Viburnum rhytidophyllum F.B. Forbes & Hemsl.

Non-native: C

Distribution: Pe

Remarks: Reported from Camprodon, Ripollès (Aymerich & Sáez, 2021c).

Viburnum tinus L.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Viburnum ×*rhytidophylloides* Suringar [*V. lantana* × *V. rhytidophyllum* F.B. Forbes & Hemsl.]

Non-native: C

Distribution: Ppe

Remarks: Known from Sant Joan de les Abadesses, Ripollès (Aymerich, 2020a).

CAPRIFOLIACEAE

Abelia ×*grandiflora* (André) Rehder [*A. chinensis* R. Br. × *A. uniflora* Wall.]

Non-native: C

Distribution: Cn

Remarks: Known from Blanes, Selva (Verloove & Aymerich, 2020).

Lonicera alpigena L.

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Lonicera biflora Desf.

Distribution: Cc Cs

IUCN category: LC

Lonicera etrusca Santi

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lonicera fragrantissima Lindl. & Paxton

Non-native: N

Distribution: Cn Cc

Remarks: First reported from a disturbed area in Viladecans, Baix Llobregat (Gómez-Bellver & al., 2016); later found in several coastal locations.

Lonicera implexa Aiton

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Lonicera japonica Thunb.

Non-native: I

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*Lonicera ligustrina* Wall.

Non-native: C

Distribution: Ppe Ae

Remarks: Reported from Berga, Ripoll and Guixers (Aymerich, 2020a; Aymerich & Sáez, 2021c). Plants from Berga are referable to var. *yunnanensis* Franch., which was sometimes recognised at species level as *L. nitida* E.H. Wilson. The specimens from Ripoll belong to var. *pileata* (Oliver) Franchet, sometimes treated as *L. pileata* Oliver.

Lonicera nigra L.Distribution: Pa Pc Pe Ppe Cn

IUCN category: LC

Lonicera periclymenum L.Distribution: Pa Pc Pe Ppc Ppe Ae O R Cn Cc

IUCN category: LC

Remarks: Two subspecies (poorly defined in the contact areas) exist in the Iberian Peninsula, namely subsp. *periclymenum* and subsp. *hispanica* (Boiss. & Reuter) Nyman. The catalan populations were traditionally ascribed to subsp. *periclymenum*. Nevertheless, subsp. *hispanica* was also listed for the studied area (Ruiz Téllez & Devesa, 2013). Some herbarium specimens from Cc could be attributed to subsp. *hispanica* while others show intermediate characters between both subspecies (see Aymerich & Sáez, 2015).

Lonicera pyrenaica L. subsp. *pyrenaica*Distribution: Pa Pc Pe Ppc Ppe O Cn Cc Cs

IUCN category: LC

Lonicera xylosteum L.Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs

IUCN category: LC

Symphoricarpos albus (L.) S.F. Blake

Non-native: N

Distribution: Pc Pe Ppe Ae Cn

Remarks: Escaped individuals are known in riparian forests of Segre river at Cerdanya plain; probably only a cultivation relic in other areas (see Aymerich, 2013a).

VALERIANACEAE*Centranthus calcitrapae* (L.) Dufur.Distribution: Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs

IUCN category: LC

Centranthus lecoqii Jord. subsp. ***lecoqii*** [*C. angustifolius* (Mill.) DC. subsp. *lecoqii* (Jord.) Braun-Blanq.]

Distribution: Pa Pc Pe Ppc Cc Cs

IUCN category: LC

Centranthus macrosiphon Boiss.

Non-native: C

Distribution: +Cn

Remarks: Known only on the basis of herbarium specimens collected in the Barcelona area in early 20th century. These plants were described as *C. cadevallii* Sennen and were regarded as hybrids between *C. ruber* and *C. calcitrapae* (Bolòs, 1950; Bolòs & Vigo, 1996).

Centranthus ruber (L.) DC. subsp. ***ruber***

Distribution: [Pa] [Pc] [Pe] [Ppc] [Ppe] [Ae] [Aw] S [O] R Cn Cc Cs

IUCN category: LC

Remarks: In non-coastal areas it is only naturalised from garden escaped individuals and is mostly linked to anthropogenic habitats (usually walls). Its native status is also doubtful in many coastal areas.

Valeriana apula Pourr.

Distribution: Pa Pc Pe Ppe

IUCN category: LC

Valeriana dioica L.

Distribution: Pa Pc

IUCN category: LC

Valeriana excelsa Poir. subsp. ***sambucifolia*** (Pohl) Wirtg. [*V. officinalis* subsp. *sambucifolia* (Pohl) Celak.]

Distribution: Pa ?Pc ?Pe

IUCN category: VU

Remarks: It is a poorly known taxon in the studied area. See Kirschner & Zeisek (2017) for taxonomy. Some reports of *V. repens* Host [*V. officinalis* subsp. *repens* (Host) O. Bolòs & Vigo] from Pc and Pe could be referable to *V. excelsa* subsp. *sambucifolia*.

Valeriana longiflora Willk. subsp. ***pau*** (Cámara) P. Monts.

Distribution: Ppc

IUCN category: VU

Remarks: Recently found in Os de Balaguer, Noguera (E. Mur & G. Solans, pers. comm.). Previously it was known in Santa Anna reservoir area, close to Catalonia-Aragon boundary but outside this Checklist limits.

Valeriana montana L.*Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC*Remarks:* Reports from Cc (Montserrat mountain) are erroneous.***Valeriana officinalis*** L.*Distribution:* Pa Pc Pe ?Ppc ?Ppe ?O Cn*IUCN category:* LC*Remarks:* Its distribution is poorly known since reports were usually referred to *V. officinalis* in a broad sense. This taxon is apparently restricted to the northern humid areas (particularly in the Axial Pyrenees). The presence of typical *V. officinalis* was considered doubtful by Bolòs & Vigo (1996); however, Vázquez & al. (2007) listed it for the studied area. See also Aymerich & Sáez (2015).***Valeriana pyrenaica*** L.*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Valeriana stolonifera*** Czern. subsp. ***angustifolia*** Soó [*V. wallrothii* Kreyer; *V. officinalis* subsp. *collina* (Wallr.) Nyman]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC*Remarks:* See Kirschner & Zeisek (2017) for taxonomy. This is the most widely distributed taxon included within *V. officinalis* group in the studied area. Its distribution is poorly known since reports were usually referred to *V. officinalis* in a broad sense.***Valeriana tarraconensis*** (Pau) L. Sáez & Aymerich [*V. tripteris* subsp. *tarraconensis* (Pau) Devesa, J. López, F.M. Vázquez & R. Gonzalo]*Distribution:* Subendemic. Cc Cs*IUCN category:* LC*Remarks:* This taxon is treated at species level, as it is both distinct morphologically and has a distinct geographical distribution; see Sáez & Aymerich (2017).***Valeriana tripteris*** L. subsp. ***tripertis*** [*V. montana* subsp. *tripertis* (L.) Rouy]*Distribution:* Pa Pc Pe Ppc Ppe Cn*IUCN category:* LC***Valeriana tuberosa*** L.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC*Remarks:* Also reported from Ports massif, close to the boundary of Cs.

Valerianella coronata (L.) DC. [incl. *V. pumila* (L.) DC.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: According to Martin & Mathez (1990) *V. pumila* represents a morphotype characterised by differences in fruit shape.

Valerianella dentata (L.) Pollich [incl. *V. rimosa* Bast.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: We assumed that *V. rimosa* represents a morphotype characterised by differences in fruit shape (Devesa & al., 2005).

Valerianella discoidea (L.) Loisel.

Distribution: Ppc Ae Aw S R Cn Cc Cs

IUCN category: LC

Valerianella echinata (L.) DC.

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Valerianella eriocarpa Desv. [*V. eriocarpa* subsp. *truncata* (Betcke) Burnat; *V. muricata* (M. Bieb.) J.W. Loudon]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Valerianella locusta (L.) Laterr. subsp. *locusta* [incl. *V. carinata* Loisel.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: We assumed that *V. carinata* represents a morphotype characterised by differences in fruit shape (Devesa & al., 2005).

Valerianella microcarpa Loisel.

Distribution: Aw R Cn Cc Cs

IUCN category: LC

Valerianella multidentata Loscos & J. Pardo

Distribution: S Cs

IUCN category: NT

DIPSACACEAE

Cephalaria leucantha (L.) Roem. & Schult.

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Cephalaria syriaca (L.) Roem. & Schult.

Non-native: C

Distribution: Ae R Cn Cc

Dipsacus fullonum L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Dipsacus pilosus L.

Distribution: Pa ?Pc Pe Ppc Ppe Ae O

IUCN category: LC

Dipsacus sativus (L.) Honck. [*D. fullonum* subsp. *sativus* (L.) Thell.]

Non-native: C

Distribution: Cn Cc

Remarks: Formerly cultivated and sometimes casual (Casasayas, 1989); most reports are old.

Knautia arvensis (L.) Coult.

Distribution: Pe Ppc Ppe O Cn Cc

IUCN category: LC

Remarks: Intermediate specimens between *K. arvensis* and *K. collina*, presumably of hybrid origin, were reported from Girona and Lleida provinces (Devesa, 2007b).

Knautia collina (Guérin) Jord. [*K. arvensis* subsp. *collina* (Duby) Schübl. & G. Martens; *K. arvensis* subsp. *meridionalis* (Briq.) O. Bolòs & Vigo]

Distribution: Pe Ppc Ppe Ae O R Cn Cc Cs

IUCN category: LC

Knautia integrifolia (L.) Bertol.

Distribution: R Cn

IUCN category: LC

Knautia lebrunii J. Prudhomme [*K. godetii* subsp. *lebrunii* (J. Prudhomme) O. Bolòs & Vigo; *K. dipsacifolia* subsp. *font-queri* Carrillo Ortuño & Ninot; *K. godetii* auct.]

Distribution: Subendemic. Pa Pc Pe

IUCN category: LC

Knautia nevadensis (Szabó) Szabó

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc

IUCN category: LC

Remarks: Represented by two varieties, namely var. *nevadensis* [*K. arvernensis* (Briq.) Szabó; *K. dipsacifolia* f. *angustata* (Rouy) O. Bolòs & Vigo; *K. arvensis* var. *involuta* O. Bolòs & Vigo, nom. illeg.] and var. *lanceolata* (Pau) Devesa, Ortega Oliv. & J.

López [*K. catalaunica* Szabó; *K. dipsacifolia* subsp. *catalaunica* (Szabó) O. Bolòs & Vigo]. Intermediate specimens between *K. arvensis* and *K. nevadensis*, presumably of hybrid origin, are relatively common in Pe, Cn and O.

Knautia rupicola (Willk.) Font Quer [*K. arvensis* subsp. *rupicola* (Willk.) O. Bolòs & Vigo]

Distribution: Subendemic. Cc Cs

IUCN category: LC

Remarks: Two varieties, differing leaves hairiness, were recognised as present in our area, namely var. *macrotrycha* (Font Quer) Devesa, Ortega Oliv. & J. López [var. *cardonica* (O. Bolòs & Vigo) Molero, L. Sáez & Vallverdú] and var. *rupicola*. Both varieties, which can be found in the same location, are connected by intermediates.

Knautia subscaposa Boiss. & Reut. [*K. arvensis* subsp. *subscaposa* (Boiss. & Reut.) Maire]

Distribution: Pe Ppc Ppe Cc Cs

IUCN category: LC

Remarks: The following varieties were reported from the studied area: var. *scaposa*, var. *subintegerrima* Rouy and var. *alboi* (Sennen) Devesa, Ortega Oliv. & J. López.

Lomelosia graminifolia (L.) Greuter & Burdet [*Scabiosa graminifolia* L.]

Distribution: Ppe Aw Cc

IUCN category: LC

Remarks: Two varieties are currently recognised, namely var. *graminifolia* and var. *virescens* (Jord. & Fourr.) Devesa, Ortega Oliv. & J. López.

Lomelosia pulsatilloides subsp. *macropoda* (Willk.) Greuter & Burdet [*Scabiosa crenata* subsp. *macropoda* (Willk.) O. Bolòs & Vigo]

Distribution: Subendemic. Ppc Ppe

IUCN category: LC

Lomelosia stellata (L.) Raf. [*Scabiosa stellata* L.]

Distribution: Pc Ppc Ppe Ae Aw S Cn Cc Cs

IUCN category: LC

Scabiosa atropurpurea L. [*S. atropurpurea* subsp. *maritima* (L.) Arcang.]

Distribution: Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Scabiosa cinerea Lam. [*S. columbaria* subsp. *cinerea* (Lam.) Font Quer; *S. pyrenaica* auct., non All.]

Distribution: Pa Pc

IUCN category: LC

Remarks: Reports from eastern Pyrenees (Gruber, 1978) are probably erroneous.

Scabiosa columbaria subsp. ***affinis*** (Gren. & Godr.) Nyman [*S. columbaria* subsp. *gramuntia* Bonnier & Layens, nom. illeg.]

Distribution: Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: The distribution of both subspecies recognised within *S. columbaria* needs to be assessed. *Scabiosa columbaria* subsp. *affinis* was usually reported from lowland and central-southern mountain areas, including Prepyrenees and eastern Pyrenees (Bolòs & Vigo, 1996, sub subsp. *columbaria* var. *gramuntia*).

Scabiosa columbaria L. subsp. ***columbaria***

Distribution: Pa Pc Pe ?Ppc ?Ppe Ae Cn

IUCN category: LC

Remarks: The respective distribution areas of both subspecies recognised within *S. columbaria* are not clearly defined at present. Typical *S. columbaria* was traditionally reported from northern mountain areas (Bolòs & Vigo, 1996).

Succisa pratensis Moench

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

PITTOSPORACEAE

Pittosporum heterophyllum Franch.

Non-native: C

Distribution: ?Cn ?Cc

Remarks: Listed without precise location for Barcelona metropolitan area (Basnou & al., 2015).

Pittosporum tobira (Thunb.) W.T. Aiton

Non-native: N

Distribution: Aw R Cn Cc Cs

Remarks: Cultivated as an ornamental, usually occurring as casual. In areas close to coastline it is locally naturalised.

ARALIACEAE

Hedera helix L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Hedera hibernica (G. Kirchn.) Bean

Non-native: N

Distribution: Pe Ppe Ae Aw Cn Cc

Remarks: Reported as naturalised in suburban areas.

Hedera maroccana McAll.*Non-native:* N*Distribution:* Ppe Ae Aw S R Cn Cc Cs*Remarks:* See Aymerich & Sáez (2015) for its distribution.***Hedera rhizomatifera*** (McAll.) Jury [*H. helix* subsp. *rhizomatifera* McAll.]*Distribution:* Cc Cs*IUCN category:* LC*Remarks:* Its distribution is poorly known (see Aymerich & Sáez, 2015). The taxonomic treatment proposed by Jury (2004) is provisionally followed here.***Hydrocotyle verticillata*** Thunb.*Non-native:* N*Distribution:* Cs*Remarks:* Reported from Ulldecona, Montsià (Senar & Cardero, 2019).***Hydrocotyle vulgaris*** L.*Distribution:* Pe R Cn +Cc*IUCN category:* EN**APIACEAE*****Aegopodium podagraria*** L.*Distribution:* Pe Ppe*IUCN category:* NT***Aethusa cynapium*** L. subsp. *cynapium**Distribution:* Pa Pc Pe Ppe Ae O R Cn*IUCN category:* LC***Ammi majus*** L.*Distribution:* Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain.***Anethum foeniculum*** L. [*Foeniculum vulgare* Mill., *F. vulgare* subsp. *piperitum* (Ucria) Cout.]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC*Remarks:* Two subspecies were recognised: subsp. *piperitum*, which include wild populations and subsp. *vulgare* which has been regarded as naturalised in northeastern Catalonia. However, no clear discontinuities have been detected to support the recognition of discrete entities.

Anethum graveolens L.*Non-native*: N*Distribution*: Pa Ppc Aw S R Cn Cc Cs*Anethum ridolfia* Spalik & Reduron [*Ridolfia segetum* (L.) Moris]*Non-native*: N*Distribution*: R Cn Cc Cs*Angelica razulii* Gouan*Distribution*: Pa Pc Pe*IUCN category*: LC*Remarks*: Probaly sporadic in Pe (Cerdanya plain).*Angelica sylvestris* L.*Distribution*: Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category*: LC*Anthriscus caucalis* M. Bieb.*Distribution*: Pe Ppc Ppe Aw O R Cn Cc Cs*IUCN category*: LC*Anthriscus cerefolium* (L.) Hoffm.*Non-native*: N*Distribution*: Cc*Anthriscus sylvestris* L.*Distribution*: Pa Pc Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category*: LC*Apium graveolens* L.*Distribution*: Ppc Ppe Aw S O R Cn Cc Cs*IUCN category*: LC*Astrantia major* L.*Distribution*: Pa Pc Pe Ppc Ppe Ae O*IUCN category*: LC*Remarks*: Two subspecies (subsp. *major* and subsp. *pyrenaica* Wörz) were recognised, but are too poorly differentiated both morphologically and geographically to warrant taxonomic recognition (Gómez, 2003). Reports from Montseny massif (Cn) have not been recently confirmed.*Astrantia minor* L.*Distribution*: Pa Pc Pe*IUCN category*: LC

Berula erecta (Huds.) Coville*Distribution:* Pe S R Cn Cc Cs*IUCN category:* LC*Remarks:* Probably extinct in Cc.***Bifora radians*** M. Bieb.*Non-native:* N*Distribution:* Pe Ppc Ppe S R Cn Cc Cs***Bifora testiculata*** (L.) Spreng.*Non-native:* N*Distribution:* Ppc Ae Aw S O R Cn Cc Cs*Remarks:* Many reports are old: currently this plant is scarcer than in the past.***Bunium bulbocastanum*** L.*Distribution:* R*IUCN category:* EN*Remarks:* It is restricted to a small area in Verdera mountain, Alt Empordà (Sáez & al., 2010).***Bunium pachypodium*** P.W. Ball*Non-native:* C*Distribution:* +Cn*Remarks:* A collection from Terrassa area in 1930 (Silvestre, 1973; Bolòs & Vigo, 1990) is the only known occurrence in our area.***Bupleurum angulosum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Cc*IUCN category:* LC***Bupleurum baldense*** Turra*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Bupleurum falcatum*** L.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Bupleurum fruticosens*** L. subsp. *fruticosens**Distribution:* Pc Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Bupleurum fruticosum*** L.*Distribution:* Aw R Cn Cc Cs*IUCN category:* LC

Bupleurum gerardi All.*Distribution:* Aw R Cc Cs*IUCN category:* LC***Bupleurum praealtum*** L.*Distribution:* ?Pa Pc Pe Ppc Ppe Aw O R Cn Cc*IUCN category:* LC*Remarks:* Only old data are available for O and Pa (in the latter region its presence has not been confirmed).***Bupleurum ranunculoides*** L. [*B. ranunculoides* subsp. *gramineum* (Vill.) Hayek]*Distribution:* Pc Pe Ppc Ppe O R Cn Cs*IUCN category:* LC***Bupleurum rigidum*** L. subsp. *rigidum**Distribution:* Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs*IUCN category:* LC***Bupleurum rotundifolium*** L.*Non-native:* N*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*Remarks:* Currently scarce due to agricultural changes. This species has an occasional presence in most regions except for Ppc and also Cerdanya plain in Pe, where large populations can be found.***Bupleurum semicompositum*** L.*Distribution:* Ae Aw S R Cn Cc Cs*IUCN category:* LC***Bupleurum subovatum*** Spreng. [*B. lancifolium* Hornem subsp. *subovatum* (Spreng.) O. Bolòs & Vigo; *B. lancifolium* auct. non Hornem.]*Non-native:* N*Distribution:* O R Cn Cc Cs*Remarks:* Usually reported as *B. lancifolium* which is a closely related taxon with a N African and SW Asiatic main area (Snogerup & Snogerup, 2001). *Bupleurum subovatum* is currently much rarer than suggested by the accumulation of historical data and has become vanished in O and Cc.***Bupleurum tenuissimum*** L.*Distribution:* Ae Aw S R Cn Cc Cs*IUCN category:* LC***Carum carvi*** L.*Distribution:* Pa Pc Pe Ppc Ppe O Cn*IUCN category:* LC

Caucalis platycarpus L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* Its native status is uncertain.***Cervaria rivini*** Gaertn. [*Peucedanum cervaria* (L.) Lapeyr.]*Distribution:* Pc Pe Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC***Chaerophyllum aureum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae O Cn*IUCN category:* LC***Chaerophyllum hirsutum*** L.*Distribution:* Pa Pc Pe Ppc Ppe O*IUCN category:* LC***Chaerophyllum temulum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Aw O R Cn Cs*IUCN category:* LC***Chaerophyllum villarsii*** W.D.J. Koch [*C. hirsutum* subsp. *villarsii* (W.D.J. Koch)

Bonnier & Layens]

Distribution: Pc Pe*IUCN category:* LC***Conium maculatum*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Conopodium arvense*** (Coss.) Calest. [*C. ramosum* Costa; *C. majus* subsp. *ramosum* (Costa) Silvestre]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC***Conopodium majus*** (Gouan) Loret subsp. *majus**Distribution:* Pa Pc Pe Ppc Ppe Ae O R Cn*IUCN category:* LC***Coriandrum sativum*** L.*Non-native:* C*Distribution:* R Cn Cc Cs*Remarks:* Most records are old.

Coristospermum lucidum (Mill.) Reduron, Charpin & Pimenov [*Ligusticum lucidum* Mill.]

Distribution: Pa Pc Pe Ppc Ppe O Cc Cs

IUCN category: LC

Critbnum maritimum L.

Distribution: R Cn Cc Cs

IUCN category: LC

Cyclosporum leptophyllum (Pers.) Sprague [*Apium leptophyllum* (Pers.) Eichler]

Non-native: C

Distribution: Cn Cc

Daucus carota L. subsp. ***carota*** [incl. *D. carota* subsp. *maritimus* (Lam.) Batt.]

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Remarks: Plants referable to var. or subsp. *maritimus* are restricted to coastal areas (see Sáez & al., 2015a).

Daucus carota subsp. ***hispanicus*** (Gouan) Thell. [*D. gingidium* L. subsp. *hispanicus* (Gouan) O. Bolòs & Vigo]

Distribution: R Cn

IUCN category: LC

Daucus carota subsp. ***sativus*** (Hoffm.) Schübl. & G. Martens

Non-native: C

Remarks: Cultivated; occasionally escaped on the periphery of vegetable gardens, however, there are no published occurrences.

Daucus durieua Lange

Distribution: Pc Cn Cc Cs

IUCN category: LC

Remarks: Also reported from an area in Aragon close to the boundary of Ppc (Conesa, 1991).

Daucus muricatus (L.) L.

Non-native: C

Distribution: Cc

Remarks: Reported from Cambrils, Baix Camp (Folch, 1979; Sanz & Sobrino, 2002). These reports are probably referable to introduced plants.

Daucus pumilus (L.) Hoffmanns. & Link [*Pseudorlaya pumila* (L.) Grande]

Distribution: R Cn Cc Cs

IUCN category: LC

Dethawia splendens (Lapeyr.) Kerguélen subsp. ***splendens*** [*D. tenuifolia* Endl. subsp. *tenuifolia*]

Distribution: Pa Pc Ppc Ppe

IUCN category: LC

Dichoropetalum schottii (DC.) Pimenov & Kljuykov [*Peucedanum schottii* DC.]

Distribution: Ppe

IUCN category: EN

Remarks: Only a single population is known, located in El Mont mountain, Alt Empordà (see Sáez & al., 2010).

Echinophora spinosa L.

Distribution: R Cn Cc Cs

IUCN category: LC

Endressia pyrenaica (DC.) J. Gay

Distribution: Subendemic. Pc Pe Ppe

IUCN category: LC

Epikeros pyrenaicus (L.) Raf. [*Selinum pyrenaicum* (L.) Gouan; *Angelica pyrenaica* (L.) Spreng.]

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Eryngium bourgatii Gouan

Distribution: Pa Pc Pe Ppc Ppe

IUCN category: LC

Eryngium campestre L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

IUCN category: LC

Eryngium maritimum L.

Distribution: R Cn Cc Cs

IUCN category: LC

Eryngium ×chevalieri Sennen [*E. bourgatii* × *E. campestre*]

Distribution: Pe Ppe

Ferula communis subsp. ***catalaunica*** (C. Vicioso) Sánchez Cuxart & Bernal

Distribution: Ppc Aw S R Cn Cc Cs

IUCN category: LC

Ferula communis L. subsp. *communis**Non-native*: N*Distribution*: S*Remarks*: Known to very few locations, close to cultivated fields and road margins (Sánchez-Cuxart & Bernal, 1998).*Ferula loscosii* (Lange) Willk.*Distribution*: S Cs*IUCN category*: NT*Gasparrinia peucedanoides* (M. Bieb.) Thell. [*Seseli peucedanoides* (M. Bieb.) Koso-Pol.]*Distribution*: Pe Ppc Ppe*IUCN category*: LC*Helosciadium nodiflorum* (L.) W.D.J. Koch [*Apium nodiflorum* (L.) Lag.]*Distribution*: Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category*: LC*Heracleum mantegazzianum* Sommier & Levier*Non-native*: N*Distribution*: Pc Pe Ppe*Remarks*: It is found along the Segre river in Cerdanya and Alt Urgell (Aymerich, 2013a; Aymerich & al., 2020).*Heracleum pyrenaicum* Lam. [*H. sphondylium* subsp. *pyrenaicum* (Lam.) Bonnier & Layens]*Distribution*: Pa Pc Pe Ppc Ppe O Cc Cs*IUCN category*: LC*Remarks*: Plants having basal leaves divided into separated segments have been referred to *H. sphondylium* subsp. *granatense* (Lam.) Bonnier & Layens.*Imperatoria hispanica* Boiss. [*Peucedanum hispanicum* (Boiss.) Endl.]*Distribution*: Cn Cc Cs*IUCN category*: LC*Imperatoria ostruthium* L. [*Peucedanum ostruthium* (L.) W.D.J. Koch]*Distribution*: Pa Pc Pe*IUCN category*: LC*Kundmannia sicula* (L.) DC.*Non-native*: C*Distribution*: Cc*Remarks*: It was observed in 1985 in Ametlla de Mar (Baix Ebre); its presence was considered accidental (Masalles & al., 1996).

Laserpitium gallicum L. subsp. *gallicum**Distribution:* ?Ppc Ae R Cn Cc Cs*IUCN category:* LC*Remarks:* The respective distribution areas of both subspecies recognised within *L. gallicum* are not clearly defined at present.***Laserpitium gallicum*** subsp. *paradoxum* (A. Bolòs & Font Quer) P. Monts.*Distribution:* Subendemic. Pc Pe Ppc Ppe O*IUCN category:* LC*Remarks:* The respective distribution areas of both subspecies recognised within *L. gallicum* are not clearly defined at present.***Laserpitium latifolium*** L. subsp. *latifolium**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn*IUCN category:* LC***Levisticum officinale*** W.D.J. Koch*Non-native:* C*Distribution:* +Pa +O*Remarks:* Formerly cultivated and sometimes reported as casual. It is considered as probably vanished, since recent data are not available.***Libanotis pyrenaica*** (L.) O. Schwarz [*Seseli libanotis* (L.) W.D.J. Koch]*Distribution:* Pa Pc Pe Ppe*IUCN category:* LC***Meum athamanticum*** Jacq.*Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Molopospermum peloponnesiacum*** (L.) W.D.J. Koch subsp. *peloponnesiacum**Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Myrrhis odorata*** (L.) Scop.*Distribution:* Pa Pc*IUCN category:* LC*Remarks:* Reports from Ppe are erroneous.***Oenanthe crocata*** L.*Non-native:* C*Distribution:* Cc*Remarks:* Known only from the Llobregat Delta (Pyke, 2003). Its presence has probably been facilitated through anthropogenic mechanisms. However, dispersal by migratory birds cannot be ruled out; in this case *O. crocata* should be considered native.

Oenanthe fistulosa L.*Distribution:* R Cn Cc*IUCN category:* LC***Oenanthe lachenalii*** C.C. Gmel.*Distribution:* Ppc Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Oenanthe pimpinelloides*** L.*Distribution:* Pe R Cn*IUCN category:* LC***Opopanax chironium*** W.D.J. Koch*Distribution:* Ppc Ppe Ae Aw O R Cn Cc*IUCN category:* LC***Oreoselinum nigrum*** Delarbre [*Peucedanum oreoselinum* (L.) Moench]*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cs*IUCN category:* LC***Orlaya grandiflora*** (L.) Hoffm.*Distribution:* Pa Pc Ppc Ppe Aw +Cn Cc*IUCN category:* LC*Remarks:* In Cn it is known only from observations in early 20th century in Barcelona.***Orlaya platycarpus*** W.D.J. Koch*Distribution:* Ppc ?S R Cn Cc Cs*IUCN category:* LC*Remarks:* Its non-native status is uncertain. According to Verloove & Lambinon (2014) *Orlaya platycarpus* W.D.J. Koch is the name to be used for the species previously called *O. daucoides* (L.) Greuter.***Pastinaca sativa*** L. subsp. *sylvestris* (Mill.) Rouy & E.G. Camus*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc*IUCN category:* LC***Petroselinum crispum*** (Mill.) Fuss.*Non-native:* N*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs

Peucedanum officinale L. subsp. ***officinale*** [incl. *P. officinale* subsp. *stenocarpum* (Boiss. & Reut.) Font Quer]

Distribution: Pe Ppe Ae Aw S O Cn Cc Cs

IUCN category: LC

Remarks: The populations of the studied area were traditionally referred to subsp. *stenocarpum*. Further research is needed in order to clarify the identity of the populations from Montsià (Royo, 2006) which are probably referable to *P. officinale* subsp. *album* Martínez-Fort & Donat-Torres.

Pimpinella anisum L.

Non-native: C

Distribution: +Cc

Remarks: Old reports from Montsant and Prades mountains have not been confirmed (Casasayas, 1989).

Pimpinella espanensis M. Hiroe [*P. gracilis* (Boiss.) Pau]

Distribution: Cc Cs

IUCN category: LC

Pimpinella major (L.) Huds.

Distribution: Pa Pc Pe Ppc Ppe O Cs

IUCN category: LC

Pimpinella peregrina L.

Distribution: Cn

IUCN category: VU

Remarks: Its native status is uncertain. Recently reported from Gavarres massif (Sáez & al., 2010).

Pimpinella saxifraga L.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc

IUCN category: LC

Pimpinella tragiium Vill. [*P. tragiium* subsp. *litophila* (Schischk.) Tutin]

Distribution: O Cc Cs

IUCN category: NT

Remarks: A variable species in which several infraspecific taxa of uncertain validity have been recognised.

Prangos trifida (Mill.) Herrnst. & Heyn [*Cachrys trifida* Mill.]

Distribution: R

IUCN category: VU

Remarks: A single population is known, located in Montgrí massif (see Sáez & al., 2010).

Ptychotis saxifraga (L.) Loret & Barr.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Sanicula europaea*** L.*Distribution:* Pa Pe Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC***Scandix australis*** L. subsp. *australis**Distribution:* Aw S Cc Cs*IUCN category:* LC***Scandix pecten-veneris*** L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Seseli annuum*** L. subsp. *annuum**Distribution:* Pa Pe Ppe Ae O*IUCN category:* LC***Seseli elatum*** L.*Distribution:* Pc Ppc Ppe Ae Aw Cc Cs*IUCN category:* LC***Seseli farrenyi*** Molero & Pujadas [*S. elatum* subsp. *farrenyi* (Molero & Pujadas) O. Bolòs & Vigo]*Distribution:* Endemic. R*IUCN category:* CR*Remarks:* It is restricted to a small area in Cap de Creus Peninsula (Molero & Pujadas, 1979; Sáez & al., 2010; López-Pujol & al., 2010). A severe population decline between 1999 and 2010 was documented by López-Pujol & al. (2010).***Seseli montanum*** L. subsp. *montanum**Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O Cn Cc Cs*IUCN category:* LC***Seseli montanum*** subsp. *nanum* (Dufour) O. Bolòs & Vigo*Distribution:* Pa Pc Pe ?Ppc Ppe*IUCN category:* LC*Remarks:* Its taxonomic value is questionable. Although *S. montanum* subsp. *nanum* was synonymised with typical *S. montanum* (Aedo & Vargas, 2003) this taxon is provisionally retained pending further work to confirm this conclusion.

Seseli tortuosum* L.Distribution:* Ppc Ae Aw S R Cn Cs*IUCN category:* LC***Silaum silaus* (L.) Schinz & Thell.***Distribution:* Ppe +O*IUCN category:* NT*Remarks:* Currently restricted to Camprodon surroundings (Ripollès), mainly in the northern slope of Serra Cavallera. See Guardiola & al. (2014).***Siler montanum* Crantz [*Laserpitium siler* L.]***Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC***Sison amomum* L.***Distribution:* Ppc Ppe Ae O R Cn Cc Cs*IUCN category:* LC***Sison segetum* L. [*Petroselinum segetum* (L.) W.D.J. Koch]***Distribution:* Ppe Ae O Cn Cs*IUCN category:* LC***Smyrniium olusatrum* L.***Distribution:* R Cn Cc*IUCN category:* LC***Thapsia asclepium* (L.) subsp. *asclepium* [*Elaeoselinum asclepium* (L.) Bertol.]***Distribution:* Cs*IUCN category:* LC***Thapsia laciniata* Rouy [*T. villosa* var. *laciniata* (Rouy) O. Bolòs & Vigo, *T. villosa* auct.]***Distribution:* Ppc Ppe Ae Aw S R Cn Cc Cs*IUCN category:* LC*Remarks:* The taxonomic distinctiveness of *T. laciniata* as a separate species from *T. villosa* L. is supported by morphological, chemical and molecular data (Smitt, 1995; Weitzel & al., 2014).***Thapsia nestleri* (Soy.-Will.) Wojew., Banasiak, Reduron & Spalik subsp. *flabellata* (P. Monts.) Fern. Prieto, García Fresno, Sanna & Cires [*Laserpitium nestleri* subsp. *flabellatum* P. Monts.]***Distribution:* Pa Pc Pe Ppc Ppe*IUCN category:* LC

Tordylium maximum L.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Torilis arvensis*** (Huds.) Link*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC

Remarks: Several authors recognised three subspecies in the studied area: *T. arvensis* subsp. *recta* Jury, *T. arvensis* subsp. *purpurea* (Ten.) Hayek and *T. arvensis* subsp. *neglecta* (Spreng.) Thell. These taxa are largely sympatric and their taxonomic value is questionable. Subsp. *recta* is apparently widely distributed in the whole area of study; the remaining subspecies are more frequent in lowlands.

Torilis elongata (Hoffmanns. & Link) Samp. [*Caucalis elongata* Hoffmanns. & Link]*Distribution:* Cs*IUCN category:* VU

Remarks: A collection from Serra d'Alfara, Paüls (Baix Ebre) in 1982 is the only confirmed occurrence in our area.

Torilis japonica (Houtt.) DC.*Distribution:* Pa Pc Pe Ppc Ppe Ae Aw O R Cn Cc Cs*IUCN category:* LC***Torilis leptophylla*** (L.) Rchb. fil.*Distribution:* Ppc Ppe Ae Aw S Cn Cc Cs*IUCN category:* LC***Torilis nodosa*** (L.) Gaertn.*Distribution:* Pc Pe Ppc Ppe Ae Aw S O R Cn Cc Cs*IUCN category:* LC***Torilis pseudonodosa*** Bianca [*T. webbii* Jury]*Distribution:* ?Cc Cs*IUCN category:* LC

Remarks: Listed for Tarragona province by Jury (2003, sub *T. webbii*). According to Royo (2006) it is common in Cs.

Trinia dufourii DC.*Distribution:* S*IUCN category:* LC

Remarks: Its distribution area is probably underestimated due to confusion with *T. glauca* (Pedrol & al., 2015).

Trinia glauca (L.) Dumort.

Distribution: Pa Pc Pe Ppc Ppe Ae Aw S O Cn Cc Cs

IUCN category: LC

Trocdaris verticillatum (L.) Raf. [*Carum verticillatum* (L.) W.D.J. Koch]

Distribution: Pc R Cn

IUCN category: NT

Remarks: Also found in France, very close to the boundary of Pa and Pe.

Turgenia latifolia (L.) Hoffm.

Distribution: Ae Aw R Cn Cc Cs

IUCN category: LC

Remarks: Its native status is uncertain.

Visnaga daucoides Gaertn. [*Ammi visnaga* (L.) Lam.]

Non-native: N

Distribution: Ae Aw S O R Cn Cc Cs

Xanthoselinum venetum (Spreng.) Soldano & Banfi [*Peucedanum venetum* (Spreng.)

W.D.J. Koch; *P. alsaticum* L. subsp. *venetum* (Spreng.) Rouy & E.G. Camus]

Distribution: Pc Aw R Cn Cc

IUCN category: LC

Xatardia scabra (Lapeyr.) Meisn.

Distribution: Subendemic. Pc Pe Ppe

IUCN category: LC

APPENDIX I: TAXA OF DOUBTFUL PRESENCE

Agave ×winteriana A. Berger

Asparagaceae

A report for Móra la Nova (López-Pujol & al., 2015a) requires confirmation.

Agrostis gigantea Roth subsp. *gigantea* [*A. stolonifera* subsp. *gigantea* (Roth) Maire & Weiller]

Poaceae

It was reported from Montsec mountain (Romo, 1989a, sub *A. gigantea* subsp. *gautieri* (Sennen) Romo) and Cerdanya (see Bolòs & Vigo, 2001). However, we cannot ensure that these specimens correspond to *Agrostis gigantea*.

Ajuga genevensis L.

Labiatae

An old report for Costabona mountain (Pe) (Vayreda, 1880) requires confirmation. See also comments under *Ajuga ×hybrida* A. Kern.

Androsace helvetica (L.) All.

Primulaceae

Reported from Pa (Cap de Vaquèira peak) on the basis of a poor herbarium specimen. Moreover, the ecology of this plant in Pa is somewhat atypical (Sáez & al., 2010). Nevertheless, populations of *A. helvetica* exist in nearby areas in Aragon (Maladeta massif) about 5 km from the boundary of the study area (Pc).

Amaranthus quitensis Kunth [*A. retroflexus* subsp. *quitensis* (Kunth.) O. Bolòs & Vigo; *A. hybridus* subsp. *quitensis* (Kunth.) Costa & Carretero]

Amaranthaceae

It is sometimes cultivated for ornament; reported from Vall de Ribes (Vigo, 1983).

Anthoxanthum ovatum Lag. subsp. *ovatum*

Poaceae

It was reported from a single location in Baix Camp (Folch, 1976) where it has not been found recently. This report, denoted as «n.v.» [not seen] by Bolòs & Vigo (2001) is apparently not supported by herbarium material.

Anthyllis barba-jovis L.

Fabaceae

It is cultivated for ornament. Benedí (2000) reported this species from Barcelona, Girona and Tarragona provinces and regarded it as probably locally naturalised, but we do not have any concrete information on this species as casual or naturalised.

Arabis collina Ten. [*Arabis muralis* Bertol., nom. illeg.; *A. collina* subsp. *muricola* (Jord.) O. Bolòs & Vigo]

Cruciferae

Reports from mountain areas in Cc (Bolòs & Vigo, 1990; Bolòs & al., 2005) were not been confirmed by Talavera (1993); see also Aymerich & Sáez (2015).

Arabis sagittata (Bertol.) DC. [*A. hirsuta* subsp. *sagittata* (Bertol.) Nyman]

Cruciferae

It was not listed by Talavera (1993) for the Iberian Peninsula. Reports from the geographical coverage considered in this checklist are probably due to confusion with *A. hirsuta* and *A. planisiliqua*.

Arenaria fontqueri Cardona & J.M. Monts. subsp. *fontqueri*

Caryophyllaceae

Its presence in Lleida province, Pyrenees, is unclear (see López-González, 1990).

Argentina anserina (L.) Rydb. [*Potentilla anserina* L.]

Rosaceae

Old reports not supported by herbarium specimens from Berga (Ae) and Olot (O) due to Cadevall (1915-1919) require confirmation. These reports have been regarded as erroneous, but it cannot be ruled out that they are correct, since this species is hard to confuse. Moreover, *A. anserina* occurs in unstable habitats and exists in other areas of the Iberian Peninsula.

Asperula aristata L. fil. subsp. *oreophila* (Briq.) Hayek

Rubiaceae

It was reported as very rare from Baix Empordà (Bolòs & Vigo, 1996). However, its presence in the Iberian Peninsula is questionable since all the revised herbarium specimens are no referable to subsp. *oreophila* (Ortega & Devesa, 2007).

Avena barbata subsp. *lusitanica* (Tab. Morais) Romero Zarco

Poaceae

This taxon was reported from two coastal areas in Barcelona province (Romero Zarco, 1990). However, a recent revision of this material reveals that is not clearly referable to subsp. *lusitanica* and it could represent an extreme form of *A. barbata* subsp. *barbata*.

Azolla caroliniana Willd.

Salviniaceae

Its presence requires confirmation. Most of the specimens of *Azolla* lack sori, which are necessary for its positive identification.

Biscutella brevifolia (Rouy & Foucaud) Guinea [*B. laevigata* subsp. *brevifolia* (Rouy & Foucaud) O. Bolòs & Masclans]

Cruciferae

It was reported from Aragonese Pyrenees (Alta Ribagorça) close to Pc boundary (see Bolòs & Vigo, 1996). Reports (without specific location) from eastern Pyrenees (Bolòs & Vigo, 1996; Bolòs, 1998) require confirmation.

Bromus lepidus Holmb. [*B. hordeaceus* subsp. *lepidus* (Holmb.) A. Pedersen]

Poaceae

It was doubtfully reported from Montserrat mountain (see Bolòs & Vigo, 2001).

Carduncellus mitissimus L.

Asteraceae

A report from Viu de Llevata, Alta Ribagorça (Frödin, 1926) requires confirmation. It has also been reported from several locations from Central Pyrenees in Aragon close to the boundary of Pc.

Carex acuta L.

Cyperaceae

Bolòs & Vigo (2001) accepted its presence in Empordà (R) on the basis of old reports. Nevertheless, *C. acuta* has not been found recently and these old reports should be considered doubtful until specimens can be checked (Sáez & al., 2010). According to Bolòs & Vigo (2001) occurrences from other areas are erroneous.

Carex brizoides L.

Cyperaceae

Its presence was confirmed in French locations close to Pa (Cadevall, 1937). Although *C. brizoides* was listed for Catalonia by Bolòs & Vigo (2001) its presence in the studied area remains unclear.

Cerastium diffusum Pers.

Caryophyllaceae

Its presence requires confirmation. Reports of this species are probably due to confusion with *C. pumilum*. *Cerastium diffusum* was reported from from Meda Gran islet (Bolòs & Vigo 1984a) and was also collected in Cala Montgó by Molero and Pujadas.

Ceratocarpus claviculata (L.) Lidén

Papaveraceae

Its presence in the studied area has hitherto not been well documented. Lidén (1986a) listed *C. claviculata* for Lleida province. This species is known from French locations close to Pa and Pc

Chaenorrhinum crassifolium (Cav.) Kostel. subsp. ***crassifolium*** [*C. origanifolium* (L.) Fourr. subsp. *crassifolium* (Cav.) Rivas Goday & Borja; *Linaria origanifolia* (L.) Cav. subsp. *crassifolia* (Cav.) O. Bolòs & Vigo]

Plantaginaceae

Its presence in our area requires confirmation. This species has been reported from several locations in northern Castelló province close to the boundary of Cs.

Chaenomeles japonica (Thunb.) Spach

Rosaceae

Oliver (2019) listed this species for Garrotxa county. The occurrence of this species requires confirmation, given that confusion with *Chaenomeles speciosa* cannot be excluded.

Chamaemelum nobile (L.) All.

Asteraceae

An occurrence from Darnius, Alt Empordà (Bou, 1984) has hitherto not been well documented.

Chenopodium ficifolium Sm.

Amaranthaceae

Reports from Pyrenees (Cerdanya and Ripollès) and Cn (Vallès Oriental) are due to confusion with *C. album* and *C. opulifolium* (Bolòs & Vigo, 1990). *Chenopodium ficifolium* was listed for Tarragona Province (Uotila, 1990).

Cistus creticus L.

Cistaceae

According to Démoly & Montserrat (1993) herbarium material collected by Benthám in La Granota (Selva plain, Cn) exists. However, our field work did not yield specimens of *C. creticus* from this area.

Cuscuta australis R. Br.

Convolvulaceae

It was repeatedly reported from Ebre Delta (Cs) and sometimes from R and Ppc. Bolòs & al. (2005) and Curcó (2007) accepted the presence of *C. australis* in Cs although it was not listed for the studied area by García (2011). The occurrence of *C. australis* requires confirmation, given that confusion with *C. campestris* cannot be excluded (see Royo, 2006).

Cuscuta planiflora Ten. [*C. epithimum* subsp. *planiflora* (Ten.) Rouy]

Convolvulaceae

Its occurrence in Montsià, where it was reported by Forcadell (1999), is likely because *C. planiflora* has a wide distribution in eastern Iberian Peninsula and it is found in nearby areas in Castelló province (García, 2011). Conversely, reports from northern Catalonia (Pe, Ppe, Ppc and Cn) should be considered with caution.

Daucus carota L. subsp. *maximus* (Desf.) Ball.

Apiaceae

Reported from coastal areas in R, Cn, Cc and Cs (Bolòs & Vigo, 1990). However this taxon was not listed by Pujadas (2003c). In fact, most reports of *D. carota* subsp. *maximus* are referable to *D. carota* subsp. *carota* (see Bolòs & Vigo, 1990).

Digitaria debilis (Desf.) Willd.

Poaceae

Its presence in R was suggested by Malagarriga (1977).

Dimorphotheca pluviialis (L.) Moench

Asteraceae

It was listed without concrete location for Barcelona metropolitan area (Basnou & al., 2015). This report is probably due to confusion with *Osteospermum ecklonis*.

Echeveria waltheri Moran & J. Meyran

Crassulaceae

Its occurrence was based on a single observation in Amposta (Ebre's Delta); the specific attribution was uncertain (see Royo, 2006).

Epipactis purpurata Sm. [*E. viridiflora* (Hoffm.) Krock.]

Orchidaceae

Its presence in our area is unclear. The voucher specimen that had served as base for the report from Lleida province (Crespo, 2005) belongs to *E. kleinii*, whereas reports from Pe (Vidal & Hereu, 1992) are probably erroneous.

Erigeron cabelloi A. Pujadas, R. García-Salmones & E. López

Asteraceae

Some reports of *E. neglectus* A. Kern. are probably referable to *E. cabelloi*, a Pyrenean endemic species so far only known from Andorra (Pujadas & al., 2012).

Ervilia loiseleurii (M. Bieb.) H. Schaefer [*Vicia loiseleurii* (M. Bieb.) Litv.]

Fabaceae

Reported from Beseit (Teruel province) close to the boundary of Cs (Romero, 1999). Given that *E. loiseleurii* is morphologically close to *Ervilia hirsuta*, some reports of the latter species from Cs could correspond to *E. loiseleurii*.

Erysimum incanum Kunze subsp. *matritensis* (Pau) G. López

Cruciferae

A single specimen (probably adventive) found in Montsià (Cs) was doubtfully referred to this taxon by Royo (2006).

Festuca capillifolia Dufour

Poaceae

Devesa & al. (2020) listed this species for Tarragona province, based on a specimen collected in Espluga de Francolí (VI-1906, Llenas, MA 12169) (J.A. Devesa, pers. comm., 10 Dec 2020). However, a conclusive ascription awaits the study of the voucher specimen.

Freesia refracta (Jacq.) Klatt

Iridaceae

Reports of this species are probably due to confusion with *F. leichtlinii* subsp. *alba* (G.L. Mey.) J.C. Manning & Glodblatt or with the hybrid between *F. corymbosa* (Burm f.) N.E. Br. and *F. leichtlinii* Katt.

Fumaria agraria Lag.

Papaveraceae

According to Bolòs & Vigo (1984) and Bolòs & al. (2005) reports of this species are due to confusion with other species of the genus. *Fumaria agraria* was listed for Barcelona, Girona and Tarragona provinces by Lidén (1986b). However, the same author (Lidén, 1986c), almost simultaneously, did not reported this species from northeastern Iberian Peninsula.

Galium pusillum L. [*G. pusillum* subsp. *hypnoides* (Vill.) O. Bolòs & Vigo]

Rubiaceae

Ortega & Devesa (2007b) listed this species for Lleida province on the basis of a bibliographic reference and accepted its presence in Andorra, on the basis of two herbarium specimens. However, we do not have any concrete information about this species in the studied area.

Hedera algeriensis Hibberd

Araliaceae

Doubtfully reported from suburban areas close to Barcelona (Pyke, 2008). This report is probably referable to *H. maroccana*.

Hedera canariensis Willd.

Araliaceae

Reports of this species (Royo, 2006) are probably due to confusion with *H. maroccana*.

Hieracium brevifolium Tausch [*H. latifolium* auct.]

Asteraceae

The presence of this species requires confirmation. It was reported from Cn [Montnegre?] by Bolòs & Vigo (1996, distribution map). Several subspecies were accepted by Greuter (2008b), of them, only *H. brevifolium* subsp. *halimifolium* (Froel.) Zahn was listed for Spain. According to Mateo & Egido (2017b) *H. brevifolium* has taxonomic affinities with *H. racemosum* and *H. umbellatum*.

Hieracium coleoidiforme Zahn

Asteraceae

It is a poorly defined taxon showing intermediate characters between *H. ramondii* and *H. phlomooides* (Mateo & Egido, 2017b). The latter authors reduced *H. coleoidiforme* to synonymy of *H. coleoides*. Bolòs & Vigo (1996) reported *H. coleoidiforme* from «Muntanyes de Prades 1100 m». Its presence in our area requires confirmation.

Hypocoum procumbens L.

Papaveraceae

Doubtful and imprecise reports from Pe, Aw, Cn and Cc (Bolòs & Vigo, 1984; Ninot & al., 2007) require confirmation. However, sporadic occurrences cannot be ruled out.

Isoetes lacustre L.

Isoetaceae

Brunton & al. (2020) not found convincing evidence for the occurrences of *I. lacustris* in the Pyrenees where it appears to have been confused with *I. creussensis*.

Kobresia simpliciuscula (Wahlenb.) Mack

Cyperaceae

Llenas (1912) reported this species from Pla de Beret (Pa), where suitable environments exist. However, field work and screening of herbarium material did not yield specimens of *K. simpliciuscula* from this area.

Lappula barbata (M. Bieb.) Gürke [*L. zapateri* (Pau) O. Bolòs & Vigo]

Boraginaceae

It was reported without precise location (based on a bibliographic reference) from Lleida province (Fernández & Talavera, 2012).

Leucanthemum maximum (Ramond) DC.

Asteraceae

Old reports from Pa require confirmation. This species was reported from several locations from French Pyrenees close to the boundary of Pa (Vogt, 1991).

Linum appressum Caball. subsp. ***appressum***

Linaceae

Afonso & al (2021) reported *L. appressum* from the inner valleys of the Pyrenees. However, field work and screening of herbarium material did not yield specimens of *L. appressum* from this area. Further research is required to improve the knowledge of the *L. suffruticosum* group in the Pyrenees.

Luzula luzulina (Vill.) Racib.

Juncaceae

Fernández-Piedra & Talavera (2010) listed this species for Girona and Lleida provinces on the basis of bibliographic references. However, reports of *L. luzulina* from our area are erroneous (Bolòs & Vigo, 2001) and we do not have any concrete information on this species. Its presence was confirmed in some Pyrenean locations outside the area concerned in this study.

Morus kagayamae Koidz.

Moraceae

The identity of a single vegetative specimen escaped in Montjuïc, urban area of Barcelona (Gómez-Bellver & al., 2019c) is unclear. Mulberry trees planted with distinctly long styles are probably referable to some varieties (or interspecific hybrids) of *M. australis* Lam.

Nephrolepis ×hippocrepicis Miyam. [*N. cordifolia* × *N. biserrata* (Sw.) Schott]

Nephrolepidaceae

Listed without precise location by Andreu & al. (2012, sub *Nephrolepis exaltata* (L.) Schott), probably based on an uncertain report for Peníscola in Castelló province, outside Checklist range (Royo, 2006). See Hovenkamp & Miyamoto (2005) for taxonomy.

Oenothera rubricaulis Kleb.

Onagraceae

Doubtful reports from Pyrenees and northeastern Catalonia (Casasayas, 1989) require confirmation. This species was not listed for the Iberian Peninsula by Dietrich (1997).

Oenothera stricta Link

Onagraceae

Old reports (19th century) from Girona (see Casasayas, 1989) are not supported by herbarium specimens.

Ornithogalum umbellatum L.

Asparagaceae

The presence of this species in our area (Mercadal & al., 2017) requires confirmation.

Oxytropis foucaudii Gillot

Fabaceae

Old reports of this species seem to be wrong (Laínz, 1995, 1998). The closest confirmed population is located in Alta Ribagorça, Huesca province (Canalís & al., 1984). Confusions with blue-flowered specimens of *O. campestris*, which were reported from the same area (Carrillo & Ninot, 1992a), cannot be ruled out.

Panicum antidotale Retz.

Poaceae

This species was reported from Flamisell river, near Pobla de Segur (Benedí & al., 1988) and lower basin of Segre river, Torres de Segre (Conesa, 1990). However both reports are not supported by herbarium specimens, or at least these materials could not be found in their respective herbaria. On the other hand, *P. antidotale* has not been observed again in the locations from which it was reported. See also Crespo (2021).

Pastinaca sativa L. subsp. *sativa*

Apiaceae

There are different views on the presence of this taxon: several authors (Bolòs & Vigo, 1990; Bolòs & al., 2005) reported only subsp. *sylvestris*, while Gutiérrez (2003) listed for the studied area subsp. *sativa* and subsp. *sylvestris*.

Patzkea paniculata subsp. *multispiculata* (Cebolla & Rivas Ponce) H. Scholz [*Festuca paniculata* subsp. *multispiculata* Cebolla & Rivas Ponce]

It was listed for Lleida province by Devesa & al. (2013, sub *F. paniculata* subsp. *multispiculata*), but later (Devesa & al., 2020) it was not reported for the studied area.

Patzkea patula (Desf.) H. Scholz [*Festuca patula* Desf.]

According to Devesa & al. (2020), a specimen of this species endemic to C and S Spain and NW Africa was allegedly collected in Pc (between Guils and Port del Cantó, SEV 265683).

Petrosedum amplexicaule (DC.) Velayos [*Sedum amplexicaule* DC.]

Crassulaceae

This species has been found in a location (Fredes, Castelló province) close (1-2 km) to Cs boundary. Castroviejo & Velayos (1997, sub *Sedum amplexicaule*) listed this species for Barcelona province based on the following herbarium specimen: Irache [Navarra], donatiu del R.P. Pujol, ex herb. J.M. Barnades (BC 603381). Therefore, the reference for Barcelona province is due to an erroneous geographical attribution.

Picris rhaodioides (L.) Desf. [*P. sprengeriana* auct.]

Asteraceae

The occurrence of this species requires confirmation. It was reported from Tarragonès (Cc) (see Bolòs & Vigo, 1996).

Pilosella pseudohybrida (Debeaux) Mateo

Asteraceae

The occurrence of this species requires confirmation. It was reported from Baix Camp (Cc) (see Bolòs & Vigo, 1996). However, Mateo & Egido (2017) considered this taxon as endemic to eastern Iberian System (Guadalajara, Teruel and Valencia provinces).

Polycarpon alsinifolium (Biv.) DC.

Caryophyllaceae

It was reported from the area of Barcelona (Cn). However, its identity is unclear (Bolòs & Vigo, 1990).

Potentilla aurea L. subsp. ***aurea***

Rosaceae

It was reported on the basis of a single specimen (BC 91153, leg. M. Garriga) collected in Núria (Pe). This report is probably due to a labelling error (Vigo, 1983; Sáez & al., 2010). Several reports of this species from central and eastern Pyrenees are due to confusions with *P. crantzii*.

Potentilla thuringiaca Link [*P. chrysantha* Trev. subsp. *thuringiaca* Link]

Rosaceae

Bolòs & Vigo (1984) and Bolòs & al. (2005) reported this species from Pa. However, Guillén & Rico (1998) regarded *P. thuringiaca* sensu O. Bolòs & Vigo as synonym of *P. verna*. The native range of *P. thuringiaca* is Central & E Europe to Siberia and Turkey.

Quercus xandegavensis Hy [*Q. pyrenaica* × *Q. robur*]

Fagaceae

This taxon was given as probably present in Olot (O) by Vicioso (1950).

Ranunculus confervoides (Fr.) Fr. [*R. trichophyllus* subsp. *eradicatus* (Laest.) C.D.K. Cook]

Ranunculaceae

Some Pyrenean populations were referred to this species, although they are probably referable to *R. trichophyllus*. According to Wiegand & al. (2017) *R. confervoides* is apparently restricted to North Europe.

Ranunculus saniculifolius Viv. [*R. peltatus* subsp. *saniculifolius* (Viv.) C.D.K. Cook]

Ranunculaceae

It was listed for Lleida province and doubtfully reported (indicated by a question mark) from Girona province (Cook & al., 1986). Its presence in our area requires confirmation.

Rubus amplistipulus Sudre [*R. godronii* subsp. *amplistipulus* Sudre]

Rosaceae

It is a poorly defined taxon included within ser. *Discolores* (P.J. Müll.) Focke, allegedly endemic to Central Pyrenees, which was reported from Pa and O (Bolòs & Vigo, 1984; Bolòs & al., 2005). According to Kurtto & Weber (2009) its presence in Spain is erroneous. *Rubus godronii* Lecoq & Lamotte was also included within ser. *Discolores*; its taxonomic status is unclear (Monasterio-Huelin, 1998).

Rubus chaerophyllus subsp. *brachythyrus* Sudre

Rosaceae

It is a poorly known taxon allegedly endemic to Central Pyrenees. It was reported from Pa (Bolòs & Vigo, 1984; Bolòs & al., 2005). However, this name was not included in Iberian and European treatments (Monasterio-Huelin, 1998; Kurtto & Weber, 2009). According to the latter authors, *Rubus chaerophyllus* Sagorski & W. Schultze is endemic to Germany, Poland and Czech Republic.

Rubus hebetatus Sudre [*R. geniculatus* Kaltenb. var. *hebetatus* (Sudre) O. Bolòs & Vigo]

Rosaceae

The alleged occurrence this species has hitherto not been well documented. It is not accepted as taxonomically distinct in several treatments (Monasterio-Huelin, 1998; Kurtto & Weber (2009).

Rubus pedatifolius Genev.

Rosaceae

Its presence in Pa (Bolòs & Vigo, 1984; Bolòs & al., 2005) requires confirmation. According to Kurtto & Weber (2009) Spanish reports are erroneous.

Rubus scaber Weihe [incl. *R. miostylis* Boulay; *R. tereticaulis* P.J. Müll. var. *miostylis* (Boulay) O. Bolòs & Vigo]

Rosaceae

Its presence in Pa (Bolòs & al., 2005) requires confirmation. According to Kurtto & Weber (2009) Spanish reports are erroneous.

Rubus serpens Weihe [incl. *R. serpens* var. *puripulvis* Sudre]

Rosaceae

This species belongs to Ser. *Glandulosi* (Wimm. & Grab.) Focke. Its presence in Catalonia (Bolòs & al., 2005) requires confirmation. According to Kurtto & Weber (2009) Spanish reports are erroneous.

Rubus subvillosus Sudre [*R. arduennensis* subsp. *subvillosus* Sudre]

Rosaceae

The occurrence of this species has hitherto not been well documented. It is not accepted as taxonomically distinct in several treatments (Monasterio-Huelin, 1998; Kurtto & Weber (2009).

Rubus sulcatus Vest. [incl. *R. sulcatus* var. *apricus* Sudre; *R. laetevirens* Sudre, nom. illeg.]

Rosaceae

It was reported from Ribes valley (Vigo, 1983). According to Kurtto & Weber (2009) reports from Spain are erroneous.

Rubus ×aranicus Sudre [*R. timbal-lagravei* × *R. hirtus*]

Rosaceae

No sound information concerning this taxon is available. It was not listed as taxonomically distinct in recent treatments (Monasterio-Huelin, 1998; Kurtto & Weber, 2009) and probably has very limited systematic value.

Rumex papillaris Boiss. & Reut. [*R. thyrsiflorus* subsp. *papillaris* (Boiss. & Reut.) Sagredo & Malag.]

Polygonaceae

Remarks: This Iberian endemic was listed for Girona and Lleida provinces (López González, 1990b). However, as the previous author indicated, some specimens of *R. acetosa* with oblong basal leaves and branched inflorescences are almost indistinguishable from *R. papillaris*.

Salix myrsinifolia Salisb.

Salicaceae

A single specimen from Ribes valley (Pe) was doubtfully referred to this species by Vigo (1983). However, the occurrence of *S. myrsinifolia* in the studied area has not been confirmed subsequently. Nevertheless, the presence of *S. myrsinifolia* in our area cannot ruled out since it is known from nearby locations in French territory.

Salsola collina Pall. [*S. kali* subsp. *collina* (Pall.) O. Bolòs & Vigo]

Amaranthaceae

This eastern species, in all probability a casual occurrence in our area, was only reported from S based on herbarium specimens collected by Font Quer (see Bolòs & Vigo, 1990). However, a conclusive ascription awaits the study of the voucher specimen.

Saxifraga cuneifolia L.

Saxifragaceae

The alleged occurrence of this species in Costabona (Pe) is not supported by herbarium specimens. The geographically closest populations are found in Corbières (France).

Schoenoplectus pungens Vahl

Cyperaceae

Reports from Baix Ebre are probably due to confusion with *S. mucronatus* (Royo, 2006).

Sedum arboreum Mast.

Crassulaceae

Castroviejo & Velayos (1997) listed this species for our area. However, we do not have any concrete information on this species.

Senecio tamoides DC.

Asteraceae

It was reported from several locations in northeastern Catalonia (Mallol & Maynés 2008); however, its occurrence in the studied area has not been confirmed subsequently. These reports are probably due to confusion with *S. angulatus*.

Sinapis alba L. subsp. *dissecta* (Lag.) Bonnier

Cruciferae

It was doubtfully reported on the basis of an old herbarium specimen collected in Terrassa (Cn) (see Bolòs & Vigo, 1990). *Sinapis alba* subsp. *dissecta* was not listed for the studied area by Gómez Campo (1993).

Symphotrichum laeve (L.) Á. Löve & D. Löve [*Aster laevis* L.]

Asteraceae

A report for Baixa Cerdanya (Romo, 1986b) requires confirmation.

Symphotrichum novi-belgii (L.) G.L. Nesom [*Aster novi-belgii* L.; *A. novi-belgii* subsp. *laevigatus* (Lam.) Thell.]

Asteraceae

The presence of this species remains uncertain; apparently confused with *S. lanceolatum* or *S. xsalignum*.

Symphotrichum xversicolor (Willd.) G.L. Nesom [*Aster xversicolor* Willd.]

Asteraceae

The presence of this taxon remains uncertain.

Sisymbrium assoanum Loscos & J. Pardo

Cruciferae

Reported from Montmeneu (S) by Conesa & Recasens (1992) but its presence was not accepted in subsequent studies. *Sisymbrium assoanum* is known in neighboring areas in Aragon.

Spergularia tangerina P. Monnier [*Spergula tangerina* (P. Monnier) G. López]

Caryophyllaceae

Ratter (1990) listed this taxon for Tarragona Province (on the basis of a bibliographic reference) without concrete location. However, we do not have any concrete information on this species.

***Stratiotes aloides* L.**

Hydrocharitaceae

Quer (1762) reported this species from Roses (R) and Guadiana river in «La Mancha» (central Spain). A single specimen was found in Quer's herbarium, but the label does not indicate location (Aedo & al., 2014). This species has not been rediscovered in Spain since Quer's time.

***Suaeda maritima* (L.) Dumort.**

Amaranthaceae

It was reported on the basis of a specimen collected in Girona province (Pedrol & Castroviejo, 1988). However, its presence in the studied area is doubtful (see Bolòs & al., 2005).

***Taraxacum aquilonare* Hand.-Mazz**

Asteraceae

This species was reported from Serra Pedregosa (Cadí range, Ppe) by Gruber (1978). However, A. Galán (pers. comm.) was not able to find any voucher specimen.

***Taraxacum hispanicum* H. Lindb.**

Asteraceae

According to Galán (2017), most reports of *T. hispanicum* are referable to *T. tarraconense*.

***Taraxacum miniatum* H. Lidnb.**

Asteraceae

Reports of this species are probably due to confusion with other species of the genus.

***Taraxacum obtusilobum* Dahlst.**

Asteraceae

Some specimens [Vallespir, Costoja, HGI 22104] were collected in southern France (Vallespir) near the border of Pe boundary in Alt Empordà (A. Galán, pers. comm.). Its presence in our area requires confirmation.

***Taraxacum piceatum* Dahlst.**

Asteraceae

This species is related to *T. acutangulum*. *Taraxacum piceatum* was reported from Baix Llobregat and Segrià (Bolòs & Vigo, 1996). However, A. Galán (pers. comm.) was not able to find herbarium material.

***Tephrosieris helenitis* (L.) B. Nord. [*Senecio helenitis* (L.) Schinz & Thell. subsp. *helenitis*]**

Asteraceae

Old reports from Central Pyrenees (Pa and Pc) require confirmation (Bolòs & Vigo, 1996).

Teucrium angustissimum Schreb.

Labiatae

The unlocated report for Lleida province (Navarro, 2010) requires confirmation.

Teucrium lusitanicum Schreb. subsp. *lusitanicum*

Labiatae

It was listed for Barcelona and Girona provinces (Navarro, 2010). However, we do not have any concrete information on this species.

Thalictrum speciosissimum L.

Ranunculaceae

The presence of this species in southern Catalonia requires confirmation (see Hand, 2001).

Tragopogon orientalis L. [*T. pratensis* subsp. *orientalis* (L.) Čelak.]

Asteraceae

Reported from Pallars (Bolòs & Vigo, 1996) and Cadí-Moixeró mountains.

Trigonella caerulea (L.) Ser.

Fabaceae

It was imprecisely reported from Cerdanya (Pe) by Bolòs & Vigo (1984); also listed for Barcelona and Girona provinces (Hedge & Sales, 2000). However the herbarium material that had served as base for report for Barcelona provinces belongs to *T. procumbens* (Besser) Rchb. It is unknown whether the reference from Girona province (Hedge & Sales, 2000) refers to the location given by Bolòs & Vigo (1984) and, in this case, if the plant was cultivated or naturalised.

Typha angustifolia L.

Typhaceae

Although this species was widely reported, its presence has not been confirmed unequivocally. Most reports of *T. angustifolia* are referable to *T. domingensis*.

Typha laxmannii Lepech.

Typhaceae

It was reported from the lower Llobregat basin, Molins de Rei, in 2008 (Exocat Database: http://exocatdb.creaf.cat/base_dades). We do not know the background of this report. A confusion with other *Typha* species cannot be excluded. If the plants from Molins de Rei actually belong to *T. laxmannii* it was probably cultivated, because it is found in an artificial wetland in which extensive restoration and naturalisation works were made in the 1990's and 2000's.

Typha shuttleworthii W.D.J. Koch & Sond.

Typhaceae

Old reports from Empordà and Gironès are probably due to confusion with other species of the genus.

Typha ×glauca Godr. [*T. latifolia* × *T. angustifolia*]

Typhaceae

Its presence is unclear given that *T. angustifolia* does not exist in the studied area. These reports are probably due to confusion with *T. domingensis*. The wild hybrid between *T. domingensis* and *T. latifolia* was not reported from the Iberian Peninsula (Cirujano, 2008).

Vaccinium uliginosum L. subsp. *uliginosum*

Ericaceae

Sáez & al. (2010) suggested the presence of plants morphologically referable to subsp. *uliginosum* in Ruda valley (Pa). However, further studies (molecular data and chromosome counts) are needed to establish conclusively their identity. According to Alsos & al. (2005) Pyrenean plants are tetraploid and therefore referable to *V. uliginosum* subsp. *microphyllum* (Lange) Tolm. However, the presence of octoploid plants (subsp. *uliginosum*), which are distributed from the British Isles to the Alps, cannot be ruled out.

Vandenboschia speciosa (Willd.) G. Kunkel

Hymenophyllaceae

Gametophytes (which are difficult to detect) of this species have been found by Pascal Holveck (Office National des Forêts) (unpubl. data) in a French location close (< 1 km) to Pa boundary.

Viburnum odoratissimum Ker Gawl.

Viburnaceae

A report from Font Moixina, Olot of *V. dentatum* var. *lucidum* Aiton (Oliver, 2018), based on an observation of A. Salvat (X. Oliver, pers. comm.) was referred to *V. odoratissimum* by Aymerich & Sáez (2019). However, this report requires confirmation since no voucher specimens or photographs exist to confirm the identity of this plant, which has not been observed again.

Wahlenbergia hederacea (L.) Rchb.

Campanulaceae

Its presence in Pa requires confirmation. Bolòs & Vigo (1996) reported *W. hederacea* from Catalonia based upon an old report from Coth de Baretja (Col de Barèges) on the border between France and Spain. This location should be interpreted in a broad sense, so it could also correspond to an area of the nearby Luishon valley. The presence of *W. hederacea* is well documented in nearby locations within French territory, some of them (Fos) < 1 km from Pa boundary.

APPENDIX II: EXCLUDED TAXA

Achillea millefolium subsp. *sudetica* (Opiz) Oborny

Asteraceae

Reports of this taxon from Pe (Vigo & al., 2003) are referable to *A. ceretanica*.

Achillea nobilis L.

Asteraceae

It was reported by Bässler (1963). However, according to Bolòs & Vigo (1996) plants referred to *A. nobilis* are probably luxuriant forms of *A. odorata* or hybrids between *A. odorata* and *A. millefolium*. An old report for O due to Cadevall has not been confirmed (Oliver & Font, 2009).

Aegilops biuncialis Vis. subsp. *biuncialis* [*Aegilops lorentii* Hochst.]

Poaceae

Old reports from R and Cn are not supported by herbarium specimens.

Agave atrovirens Salm-Dyck

Asparagaceae

A report for Baix Ebre (Royo, 2006) is in all probability due to confusion with typical *A. salmiana*.

Allium fuscum Waldst. & Kit. [*A. paniculatum* subsp. *fuscum* (Waldst. & Kit.) Arcang.]

Amaryllidaceae

Casasayas (1989) reported this species as sporadic in Barcelonès, Maresme and Vallès counties, and was therefore listed as non-native by Aymerich & Sáez (2019b). However, *A. fuscum* is a diploid plant ($2n=16$) endemic to eastern Balkan peninsula (N Bulgaria and SW Romania) according to Brullo & al. (2008). Reports due to Casasayas (1989) are probably referable to *A. dentiferum*.

Aloe succotrina Lam.

Asphodelaceae

It was vaguely reported by Andreu & al. (2012). We do not know the background of this report, which is probably due to confusion with *Aloe xdelaeitii* Radl.

Androsace vitaliana (L.) Lapeyr. subsp. ***cinerea*** (Sünderm.) Kress [*Vitaliana primuliflora* Bertol. subsp. *cinerea* (Sund.) I.K. Ferguson]

Primulaceae

This subspecies was reported from eastern Pyrenees (e.g. Bolòs & Vigo, 1995; Kress, 1997; Galicia & al., 2002). However, it is endemic to Alps, south and west of Mont Blanc massif (Dixon & al., 2016).

Aquilegia vulgaris L. subsp. ***dichroa*** (Freyen) T.E. Díaz

Ranunculaceae

This taxon, endemic to Açores and northwestern Iberian Peninsula (Díaz González, 1986), was reported from Montseny massif by Calleja (2006: 243). This report, not supported by herbarium specimens, is due to confusion with *A. vulgaris* subsp. *vulgaris* (Sáez & al., 2017).

Arctium nemorosum Lej. [*A. minus* subsp. *nemorosum* (Lej.) Syme]

Asteraceae

Old reports from O and eastern Pyrenees (see Bolòs & Vigo, 1996) have not been confirmed.

Asparagus maritimus (L.) Mill.

Asparagaceae

Reports of this species from a coastal area in R (Empordà county) are referable to *Asparagus prostratus*.

Asperula taurina L. subsp. ***taurina***

Rubiaceae

A vague report for Catalonia (Willkomm & Lange, 1865-1870) is not supported by herbarium specimens. This old report was disregarded by Bolòs & Vigo (1996) and Ortega & Devesa (2007).

Asplenium ×gastonii-gautieri Litard. [*A. fontanum* × *A. viride*]

Aspleniaceae

The alleged occurrence of this taxon in Puigsacalm (Villegas, 1993; Oliver & Font, 2009) must be disregarded. The voucher specimen consists of *A. fontanum* (Sáez, 1998).

Astragalus cicer L.

Fabaceae

Old reports from northern slope of Albera massif (Pe) have not been confirmed (Font, 2000).

Astragalus cymbaecarpus Brot. [*A. castellanus* Bunge]

Fabaceae

It was listed for all the Catalan provinces (see Podlech, 1999). However, we do not have any concrete information on this species. These reports are probably erroneous.

***Astragalus glaux* L.**

Fabaceae

Formerly reported from Fort de Bellaguarda (el Pertús, North Catalonia, France) in the boundary of Pe (Bou, 1984). This old report has not been recently confirmed.

***Astragalus granatensis* Lam.**

Fabaceae

Ferrández (1996, 1997) reported an isolated group of small populations from Estopinyà (Huesca province). So far this species has not been found in Catalonia, although it is located 5-6 km away.

***Baubinia dolychocalix* Merr. [*B. grandiflora* Blanco]**

Fabaceae

See comments under *B. forficata*.

***Bituminaria plumosa* (Rchb.) Bogdanović, C. Brullo, Brullo, Ljubičić & Giusso**
[*Psoralea plumosa* Rchb.]

Fabaceae

Doubtfully reported by Royo (2006, as «*Psoralea* cf. *plumosa* F. Muell., *Lotodes plumosum* (F. Muell.) Kuntze») from Montsià county, where it was found in waysides. This report, not supported by herbarium specimens, is probably based on misidentification of robust forms of *Bituminaria bituminosa* var. *albomarginata* P. Méndez, Fern. Galván & A. Santos. *Bituminaria plumosa* is an endemic species to Croatia well differentiated from the other known species of this genus (Bogdanovic & al., 2016). According to Grimes (1997) *Lotodes plumosum* (F. Muell.) Kuntze refers to *Cullen plumosum* (F. Muell.) J.W. Grimes, endemic to Australia.

***Callitriche platycarpa* Kütz**

Plantaginaceae

It was reported from a small area in Ebre Delta (Margalef, 1981; Royo, 2006). However, a taxonomic confusion cannot be rule out given that this species was not reported by García-Murillo (2010). Moreover, the habitat in which *C. platycarpa* was found is unusual (Sáez & al., 2010).

***Camelina alyssum* (Mill.) Thell. [*C. sativa* subsp. *dentata* (Pers.) Arcang.]**

Cruciferae

This species was reported from the northern slope of Albera massif, close to the study area but in French territory.

***Carex atrata* L. subsp. *aterrima* (Hoppe) Hartm.**

Cyperaceae

Bolòs & al. (2005) listed this taxon for the Catalan Pyrenees. However, the Pyrenean specimens revised by M. Luceño fall within the variability of *C. atrata* subsp. *atrata* (Luceño, 2008).

Carex ferruginea Scop.

Cyperaceae

It was reported from Pc by Canalís & al. (1984). This data, which was compiled as unverified by Bolòs & Vigo (2001), was not accepted later (Bolòs & al., 2005; Luceño, 2008).

Carex laevigata Sm. [*C. helodes* auct.]

Reports of this species (Molero & Rovira, 1983; Bolòs, 1998; Bolòs & Vigo, 2001; BDBC) are erroneous. The available specimens that served as basis for these reports (Delta de l'Ebre, Molero & Rovira, BCN62475 and Castelldefels, herb. J. Darder, BCN74230) were revised by M. Luceño, who identified them as *Carex distans* (M. Luceño, pers. comm., 6 Sept. 2021).

Centaurea resupinata Coss. subsp. ***dufourii*** (Dostál) Greuter [*C. boissieri* subsp. *dufourii* Dostál]

Asteraceae

Endemic to southern Valencia province (Blanca & Suárez-Santiago, 2011). Reports from Cc and Cs seem to be wrong since this species has often been confused with some forms of *C. boissieri* subsp. *integrifolia*.

Chamaemelum fuscatum (Brot.) Vasc.

Asteraceae

Old reports from Lluçanès (Ae) and Garrotxa (R? O?) due to Vayreda are referable to *Matricaria chamomilla* L. (C. Benedí, pers. comm., 16 Jan. 2015).

Cicuta virosa L.

Apiaceae

Its presence was suggested by Knees (2003). Aedo & al. (2014) listed *C. virosa* as extinct in Spain, on the basis of an old report (late 19th century) from Puigcerdà (Pe). However, this report is not confirmed by any herbarium voucher and Catalan botanists have considered it erroneous.

Cirsium pyrenaicum (Jacq.) All.

Asteraceae

Reports of *C. pyrenaicum* var. *paniculatum* (Vahl) Talavera & Valdés are referable to *C. valdespinulosum* (Sennen) Sennen (Talavera, 2013).

Conopodium majus (Gouan) Loret subsp. ***marizianum*** (Samp.) López Udías & Mateo

Apiaceae

This taxon, endemic to western Iberian Peninsula, was reported from Cs (see Royo, 2006). This report is probably referable to *C. arvense* (Coss.) Calest. a common species in Cs which was not listed by Royo (2006).

***Crepis neglecta* L.**

Asteraceae

This eastern Mediterranean species was doubtfully reported from Garrotxa (see Bolòs & Vigo, 1996). Nevertheless, it was not listed for the Iberian Peninsula by Talavera & al. (2017a).

***Crepis suffreniana* (DC.) Steud.**

Asteraceae

This species, morphologically close to *C. bursifolia*, was reported from Gironès (see Bolòs & Vigo, 1996). Nevertheless, this species was not listed for the Iberian Peninsula by Talavera & al. (2017a).

***Crepis tectorum* L.**

Asteraceae

Reports from the studied area are erroneous (see Soler & Montes, 2003).

***Crocus serotinus* Salisb. subsp. *salzmannii* (J. Gay) B. Mathew**

Iridaceae

This taxon was listed for Barcelona province by Guillén (2013) but there is no evidence supporting its presence. This report is probably due to confusion with *C. nudiflorus*.

***Cullen americanum* (L.) Rydb. [*Psoralea americana* L.]**

Fabaceae

Talavera (1999) listed this species for Tarragona province without specific location. This report is probably due to an incorrect administrative assignment. *Cullen americanum* was reported from Fraga (Huesca province) by Molero (1976b), however, this species was not listed from the latter province by Talavera (1999).

***Dactylorhiza maculata* (L.) Soó subsp. *elodes* (Griseb) Soó**

Orchidaceae

Vaguely reported from Pyrenees. These reports are probably referable to *D. maculata* subsp. *savogensis*.

***Daucus crinitus* Desf.**

Apiaceae

It was reported from Barcelona province (Pujadas, 2003c) on the basis of a single specimen collected in Montserrat mountain (Cc). This report is probably due to a labelling error.

Delphinium fissum* Waldst. & Kit. subsp. *fissum

Ranunculaceae

Reports of this taxon (Bolòs & al., 2005) are referable to *D. bolosii*. However, *D. fissum* subsp. *fissum* was reported the last years in two locations in North Catalonia, France, one of them (Carançà gorges) close (< 10 km) from Pe boundary (Andrieu & al., 2010).

Dioscorea chouardii Gaussen [*Borderea chouardii* (Gaussen) Heslot]

Dioscoreaceae

This species is found very close to the limit of the studied area (<1 km) but the whole population is located on the western side of Noguera Ribagorçana river, in an Aragonese administrative location.

Disphyma australe (Aiton) J.M. Black

Aizoaceae

It was reported from Cadaqués (R) by Gómez & al. (2010). Its presence requires confirmation, since the report was probably due to confusion with *D. crassifolium*.

Drosera intermedia Hayne

Droseraceae

Reports of this species (Pérez-Haase & al., 2012) are due to confusion with *D. anglica* (Aymerich & Sáez, 2015).

Elymus curvifolius (Lange) Melderis [*Paunera curvifolia* (Lange) V. Lucía, E. Rico, K. Anamth.-Jon. & M.M. Mart. Ort.; *Elytrigia curvifolia* (Lange) Holub]

Poaceae

This species was reported by Bolòs & Vigo (2001). However, field work and screening of herbarium material did not yield specimens of *E. curvifolius* (V. Lucía, pers. comm., 20 July 2019).

Empetrum nigrum L. subsp. *nigrum*

Ericaceae

Imprecise reports from Pa (and also for the whole of the Pyrenees) are probably due to confusion with peatlands morphotypes referable to subsp. *hermaphroditum*. These forms have also been observed in several locations of Pc (see Sáez & al., 2010).

Erigeron neglectus A. Kern. [*E. alpinus* subsp. *neglectus* (A. Kern.) Nyman]

Asteraceae

Reports of this alpine species have not been confirmed and are probably referable to the Pyrenean endemic *E. cabelloi* A. Pujadas, R. García-Salmones & E. López.

Erodium acaule (L.) Bech. & Thell.

Geraniaceae

Old reports of this species have never been confirmed (Franquesa, 1995; Font, 2000, Gesti, 2006). These reports seem to be wrong since this species has often been confused with some forms of *E. cicutarium* (Aymerich & Sáez, 2015).

Euphorbia pithyusa L. subsp. *pithyusa*

Euphorbiaceae

It is known from French coastal areas very close to R (see Bolòs & Vigo, 1990). However, so far it has not been found in the studied area.

Euphorbia stricta L.

Euphorbiaceae

An old report for Noguera Pallaresa river (Ppc) is probably due to confusion with *E. platyphyllos* (Benedí & al., 1997).

Falcaria vulgaris Bernh.

Apiaceae

Old reports due to Willkomm & Lange (1874) were regarded as erroneous by Bolòs & Vigo (1996).

Festuca aragonensis (Willk.) Fuente & Ortúñez [*F. indigesta* subsp. *aragonensis* (Willk.) Kerguélen; *F. ovina* var. *aragonensis* (Willk.) O. Bolòs & Vigo, *F. indigesta* var. *aragonensis* Willk.]

Poaceae

Bolòs & Vigo (2001: 355) reported this taxon from central Pyrenees (Pallars Sobirà). However, *F. aragonensis* is endemic to Moncayo massif, Soria and Zaragoza provinces (Devesa & al., 2020).

Festuca indigesta Boiss. subsp. *indigesta*

Poaceae

This taxon is endemic to southeastern Spain (Devesa & al., 2020). Therefore, reports of *F. indigesta* subsp. *indigesta* (Romo, 1989a) and *F. indigesta* (in broad sense) (Conesa, 2001) should be disregarded.

Festuca inops subsp. *valentina* (St.-Yves) Mart.-Sagarra, E. López & Devesa [*F. valentina* (St.-Yves) Markgr.-Dann.; *F. ovina* var. *valentina* St.-Yves; *F. ovina* subsp. *valentina* (St. Yves) O. Bolòs & Vigo]

Poaceae

Rovira (1986) and Nuet & Panareda (1993) reported this taxon from Ports massif and Montserrat mountain, respectively. However, according to Devesa & al. (2020) this subspecies is endemic to southeastern Spain (Alicante, Murcia and Valencia provinces).

Filago atlantica (Wagenitz) Andrés-Sánchez, M.M. Mart. Ort. & E. Rico [*F. pyramidata* var. *atlantica* (Wagenitz) O. Bolòs & Vigo]

Asteraceae

Reports from Prades mountains (Cc) (Bolòs & Vigo, 1996, sub *F. pyramidata* var. *atlantica*) are erroneous.

Galium cespitosum Lam.

Rubiaceae

It was listed for Lleida province (based on a bibliographic reference) by Ortega & Devesa (2007b). Reports of *G. cespitosum* are due to confusion with *G. pyrenaicum*. At least one herbarium specimen from JACA identified as *G. cespitosum* was confirmed to belong to *G. pyrenaicum* (L. Villar, pers. comm.).

Galium laevigatum L. [*G. sylvaticum* L. subsp. *aristatum* (L.) Rouy; *G. sylvaticum* L. subsp. *laevigatum* (L.) O. Bolòs & Vigo]

Rubiaceae

There are no concrete and reliable reports of this species from the studied area. *Galium laevigatum* was reported from Pe by Font & Vigo (2007) but this record corresponds to a nearby French location.

Glaux maritima L.

Primulaceae

An old report (dating back 19th century) for Barcelona coast has not been confirmed.

Hedynois arenaria (Schousb.) Fisch.

Asteraceae

Reports from Tarragona province (see Curcó, 2007) should be disregarded. According to Talavera & al. (2017b) the herbarium material collected in Tarragona province identified as *H. arenaria* belong to *H. cretica*.

Helianthemum angustatum Pomel

Cistaceae

The presence of this species in the studied area (it was listed for Barcelona province, López González, 1990) is questionable and is not supported by herbarium specimens.

Helosciadium repens (Jacq.) W.D.J.Koch [*Apium repens* (Jacq.) Lag.; *A. nodiflorum* subsp. *repens* (Jacq.) Thell.]

Apiaceae

Although its presence was accepted by Bolòs & al. (2005), there is no evidence supporting its occurrence in the studied area. The only information is based on a single herbarium specimen collected in 19th century (Herb. Costa-BC) (see Bolòs & Vigo, 1990) in which two labels are found. One of them is a geographic indication from Osona (Ae), and the other one is from Aragon, where *H. repens* actually exists.

Heracleum sphondylium L.

Apiaceae

It was reported from nearby localities in French and Aragonese Pyrenees but concrete information for the studied area is unclear.

Hypochaeris radicata L. subsp. *neapolitana* (DC.) Nyman [*H. neapolitana* DC.; *H. radicata* var. *heterocarpa* Moris; *H. radicata* subsp. *heterocarpa* (Moris) Arcang.]

Asteraceae

It was reported from Maresme (Bolòs & Vigo, 1996, sub *H. radicata* var. *heterocarpa* Moris). According to Talavera & al. (2015) this subspecies is endemic to central and eastern Mediterranean region.

Hypericum undulatum Willd.

Hypericaceae

Ramos (1993) listed this species for Barcelona and Girona provinces. However, so far there is no evidence supporting the presence of this species in our area.

Iberis bernardiana Gren. & Godr.

Cruciferae

This species, endemic to western Pyrenees, was reported from Girona province and eastern Prepyrenees by Moreno (1993) and Bolòs & al. (2005), respectively. Several old and doubtful reports were rejected by Bolòs & Vigo (1991). The report for Girona province is probably based on an observation of Lapraz (1954) in Tosa d'Alp (Pe). However, this location was intensively explored without having found *I. bernardiana*. This report is probably due to confusion with *I. spathulata* (Vigo & al., 2003).

Isoetes longissima subsp. ***asturicensis*** (M. Laínz) L. Sáez, Nava & Fern. Prieto [*I. velatum* subsp. *asturicense* (M. Laínz) Rivas-Mart. & Prada]

Isoetaceae

Moreno & al. (2015, sub *I. velatum* subsp. *asturicense*) mapped occurrences of this taxon in the Pyrenees. However, so far there is no evidence of the presence of this taxon in our area.

Juncus anceps Laharpe

Juncaceae

Old reports from Empordà due to F. Sennen are not supported by herbarium specimens (see Bolòs & Vigo, 2001). Moreover, *J. anceps* was not listed for the Iberian Peninsula by Romero Zarco (2010).

Juncus* × *montserratensis Marcet [*J. acutiflorus* × *J. articulatus*]

Juncaceae

According to Nuet & Panareda (1993) the type material of this alleged hybrid cannot be distinguished from *J. articulatus*.

Krascheninnikovia ceratoides (L.) Gueldenst.

Amaranthaceae

A doubtful report (indicated by a question mark) for Tarragona province (Castroviejo & Soriano, 1990) has not been confirmed, and there is no evidence supporting the presence of this species in our area.

Lathyrus pulcher J. Gay [*L. tremolsianus* Pau]

Fabaceae

It was reported from Castelló Province (Aparicio, 2000; Royo, 2006), close (< 4 km) to the boundary of Cs (massís del Port). So far there is no evidence supporting its presence in our area.

Leontodon hirtus L. [*L. villarsii* (Willd.) Loisel.]

Asteraceae

There is no evidence supporting the presence of this species in the studied area.

Linum decumbens Desf.

Linaceae

An old report from Cadaqués (Vayreda, 1902) requires confirmation.

Lomelosia divaricata (Jacq.) Greuter & Burdet [*Scabiosa divaricata* Jacq.]

Caprifoliaceae

The occurrence of this species in Catalonia (Tarragona province, see Devesa, 2007c) is not supported by herbarium specimens.

Lupinus micranthus Guss.

Fabaceae

Formerly reported from northern slope of Albera massif (France), about 4 km from the boundary of the study area. The species has not been found neither in northern slope nor in southern side of Albera massif (Font, 2000).

Lycopodiella inundata (L.) Holub

Lycopodiaceae

Moreno & al. (2015) mapped an occurrence of this species in eastern Girona Province (Aiguamolls de l'Empordà). However, so far there is no evidence supporting its presence in our area.

Lythrum baeticum Gonz.-Albo

Lythraceae

Reports of this species are due to confusion with *L. tribracteatum* (Sáez & al., 2010).***Malephora lutea*** (Haw.) Schwanthes

Aizoaceae

Reports of this species from Portlligat and Cadaqués, Alt Empordà (Gómez & al., 2010) are probably due to confusion with *Malephora uitenhagensis*.***Modiola caroliniana*** (L.) G. Don

Malvaceae

It was reported from Central Pyrenees (Llesp) by BDBC based on Carrillo & Ninot (1992b). However, *Modiola caroliniana* was not listed by Carrillo & Ninot (1992b: 53-54).***Nassella mucronata*** (Kunth) R.W. Pohl [*Stipa mucronata* Kunth]

Poaceae

Reports of this species due to Font & al. (2001) are erroneous (Verloove, 2005).

Odontites viscosus* subsp. *australis (Boiss.) Jahand. & Maire

Orobanchaceae

The unlocated reports from Girona and Lleida Provinces (Rico, 2009) have not been confirmed, and there is no evidence supporting the presence of this subspecies in our area.

Ononis crispa L.

Fabaceae

This species endemic to the Balearic Islands was reported from Torn beach (Baix Camp) (Anonymous, 2016: 4, sub *O. natrix* subsp. *crispa*). According to J. Badia (pers. comm., 15 March 2016) this report was due to confusion with *Ononis ramosissima*.

Onosma tricosperma* subsp. *granatensis (Debeaux & Degen) Stroh [*O. tricosperma* subsp. *hispanica* (Degen & Hervier) P.W. Ball]

Boraginaceae

Its presence in Montsià (Cs) is unclear. This report is probably due to confusion with *O. fastigiata* subsp. *fastigiata*. However, a conclusive ascription awaits the study of the voucher specimen.

Opuntia ammophila Small

Cactaceae

Taxonomic attribution of coastal plants with small cladodia is uncertain. These plants, which were called *Opuntia ammophila* or *O. tuna*, are an *O. stricta* form.

Opuntia auberi Pfeiff.

Cactaceae

Reports of this species from Riera d'Alforja (Sanz & al., 2004a, b) are probably due to confusion with *O. leoglossa*.

Opuntia huajuapensis Bravo

Cactaceae

Reports of this species (Sanz & al., 2004b; Pyke, 2008b) are probably referable to *O. leucotricha*.

Opuntia tuna (L.) Mill.

Cactaceae

Taxonomic attribution of coastal plants with small cladodia is uncertain. These plants, which have been called *Opuntia ammophila* or *O. tuna*, are probably related to *O. stricta*.

Orobanche flava F.W. Schultz

Orobanchaceae

A report of *O. flava* for Vaqueira, Pa (Pujadas, 2003a) is due to confusion with *O. haenseleri* (Carlón & al., 2015).

Orobanche variegata Wallr.

Orobanchaceae

Reports of this species are probably referable to *O. gracilis* (see Pujadas, 2001).***Oxalis tetraphylla*** Cav.

Oxalidaceae

Reports from Barcelona (Bolòs & Vigo, 1990) are due to confusion with *O. latifolia* (Sánchez Pedraja, 2013).***Parapholis strigosa*** (Dumort.) C.E. Hubb. [*Lepturus strigosus* Dumort.]

Poaceae

It was reported (as not seen) by Bolòs & Vigo (2001). According to López & al. (2018) this species is not found in eastern Iberian Peninsula.

Pentanema britannicum (L.) D. Gut. Larr., Santos-Vicente, Anderb., E. Rico [*Inula britannica* subsp. *hispanica* (Pau) O. Bolòs & Vigo]

Asteraceae

The occurrence of this species has hitherto not been well documented. Old reports from Montserrat mountain (Cc) are erroneous.

Pentanema spiraeifolium (L.) D. Gut. Larr., Santos-Vicente, Anderb., E. Rico & M.M. Mart. Ort. [*Inula spiraeifolia* L.]

Asteraceae

Reports of this species are due to confusion with *Pentanema salicinum*.***Phalaris truncata*** Bertol.

Poaceae

Old reports from Barcelona and its surroundings due to Companyó (see Bolòs, 1950) are probably erroneous.

Phelipanche mutelii (F.W. Schultz) Pomel [*Orobanche ramosa* subsp. *mutelii* (F.W. Schultz) Cout.]

Orobanchaceae

This species was widely confused with *P. lavandulacea*. Field work and screening of herbarium material did not yield specimens of *P. mutelii*.***Physocaulis nodosus*** (L.) W.D.J. Koch [*Myrrhoides nodosa* (L.) Cannon]

Apiaceae

It was reported from northern slope of Albera massif (North Catalonia, France) close (< 5 km) to Pe boundary. However, we do not have any concrete report for the studied area.

Polygonum arenarium* subsp. *pulchellum (Loisel.) Thell.

Polygonaceae

A report from Montcada (Vallès) based on a specimen presumably collected by F. Trèmols (MAF 43487, herb. Rivas Mateos) must be disregarded as being probably due to falsification.

Pyracantha crenulata (D. Don.) M. Roem.

Rosaceae

Reports of this species are due to confusion with *P. fortuneana* (see Casasayas, 1989).

Pyrus nivalis Jacq. [*P. communis* subsp. *salviifolia* (DC.) Gams.]

Rosaceae

Reports of this species are due to confusion with other species of the genus (Bolòs & Vigo, 1984; Aedo & Aldasoro, 1998).

Ranunculus fluitans Lam.

Ranunculaceae

It was doubtfully reported from Peralada, on the basis of herbarium specimens collected in 1911. Its taxonomic ascription is uncertain (Pizarro, 1995: 68).

Ranunculus ololeucos J. Lloyd

Ranunculaceae

The occurrence of this species in Girona province (Cook & al., 1986) is questionable and is apparently not supported by herbarium specimens.

Rhynchospora alba (L.) Vahl

Cyperaceae

The unlocated and doubtful report (indicated by a question mark) for Barcelona province (Luceño & Martín, 2008) has not been confirmed.

Romulea bulbocodium (L.) Sebast. & Mauri

Iridaceae

Cardiel (2013) listed this species for Girona province. However, there is no evidence supporting the presence of *R. bulbocodium* in our area.

Rosa montana Chaix

Rosaceae

According to Silvestre & Montserrat (1998) reports of this species (Vigo, 1977, 1983; Bolòs & Vigo, 1984) are due to confusion with hybrids between *R. pendulina* and *R. canina* or *R. dumalis*. Its presence in Pc (Carrillo & Ninot, 1992a) was not confirmed by Silvestre & Montserrat (1998); other reports require confirmation.

Rumex acetosella L. subsp. ***acetosella***

Polygonaceae

Reports of this taxon from Cn (Bescanó and Sant Gregori) (Girbal, 1984) are due to confusion with *R. acetosella* subsp. *angiocarpus* (Murb.) Murb.

Rumex maritimus L.

Polygonaceae

Reported from Ebre's Delta by Bolòs & al. (2005). However, *R. maritimus* was not listed by Curcó (2007). According to Royo (2006), reports of *R. maritimus* are probably referable to *R. palustris*.

Saxifraga cotyledon L.

Saxifragaceae

Reports of this species from Catalan Pyrenees are due to confusion with *S. paniculata*.

Salix cantabrica Rech. fil.

Salicaceae

A report for Lleida province (Blanco, 1993) based on a specimen collected in estany Ratera, Espot (Blanco, 1988) is almost certainly erroneous.

Saxifraga adscendens L.

Saxifragaceae

Old reports from eastern Pyrenees (Ripollès) are due to confusion with *S. aquatica* (Vigo, 1983).

Scandix macrorrhyncha Fisch. & C.A. Mey. [*S. pecten-veneris* L. subsp. *hispanica* (Boiss.) Bonnier & Layens]

Apiaceae

Reports from R (Fortià, 1907, leg. Sennen, MA 85442) (see Arenas Posada & García Martín, 1993) are due to confusion with *S. pecten-veneris* (Pujadas, 2003b).

Schedonorus arundinaceus subsp. ***mediterraneus*** (Hack.) H. Scholz & Valdés [*Festuca mediterranea* (Hack.) Rouy; *F. arundinacea* subsp. *mediterranea* (Hack.) K. Richt.]

Poaceae

This taxon has not been listed for the studied area by Devesa & al. (2020, sub *Festuca mediterranea*).

Scilla bifolia L.

Asparagaceae

Old reports from Pc are false or highly unreliable (Benedí & Sáez, 1996). A recent report due to Recasens & Mallorques (2009) is due to confusion with *Scilla luciliae* (Boiss.) Speta (Aymerich, 2017b).

Sedum dendroideum DC.

Crassulaceae

It is desirable to review the information on this taxon, because in some cases it was confused with *S. praealtum*.

Senecio macroglossus DC.

Asteraceae

Reports of this species (Casasayas, 1989) are probably referable to *Senecio angulatus*.

Selaginella kraussiana (Kunze) A. Braun

Selaginellaceae

It was listed for Barcelona province (Muñoz Garmendia, 1986) based on revised herbarium material. The previous report for Barcelona province [«B»] probably corresponds to Biscay province [“Bi”] where the species is known (voucher specimens at MA), given that *S. kraussiana* was not listed for «Bi» (see Muñoz Garmendia, 1986). So far there is no evidence supporting its presence in our area.

Silene cretica L.

Caryophyllaceae

Andreu & Pino (2013) listed this species without precise location. However, according to M. Riera (pers. comm., June 2020) this report is based on French occurrences: Prats de Molló (Vayreda, 1882) and Banyuls de la Marenda (Font, 2000). An old report from Duesaigües, Baix Camp (Gibert, 1917) was regarded as erroneous by Folch (1980).

Spinulum annotinum (L.) A. Haines [*Lycopodium annotinum* L.]

Lycopodiaceae

Moreno & al. (2015, sub *Lycopodium annotinum*) mapped an occurrence in northern Lleida province. However, so far there is no evidence of its presence in our area.

Tamarix canariensis Willd.

Tamaricaceae

See comments under *Tamarix gallica* L.

Thapsia scabra (Cav.) Simonsen, Rønsted, Weitzel & Spalik [*Laserpitium scabrum* Cav.; *Guillonea scabra* (Cav.) Coss.]

Apiaceae

Several populations exist in Castelló province (Villaescusa, 2000; Royo, 2006) close (<10 km) to Cs boundary. However, we do not have any concrete information on this species in the studied area.

Tolpis barbata (L.) Gaertn.

Asteraceae

Reports of this species are referable to *T. umbellata* (see Bolòs & Vigo, 1996).

Trisetum velutinum Boiss. [*Trisetum cavanillesianum* Borja & Font Quer]

Poaceae

It was reported from Aitona (S) by Conesa (1999) based on Bolòs (1998). However, *Trisetum velutinum* was not listed by Bolòs (1998). There is no evidence supporting the presence of this species in the area (J.A. Conesa, pers. comm., 24 Apr 2013).

Tulipa sylvestris L. subsp. *sylvestris*

Liliaceae

Reports of this taxon are due to confusion with *T. sylvestris* subsp. *australis* (see Aymerich & Sáez, 2015).

Utricularia vulgaris L.

Lentibulariaceae

The alleged occurrence of this species must be disregarded. All the revised specimens consist of *U. australis*.

Verbascum phlomoides L.

Scrophulariaceae

Reports of this species (Vayreda, 1882; Llensa, 1952; Romo, 1989c) are due to confusion with *V. thapsus*.

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