ANNALI DI BOTANICA
Ann. Bot. (Roma), 2023, 13: 19–28
annalidibotanica.uniroma1.it | E-ISSN 2239-3129 | ISSN 0365-0812

TEMPORAL CHANGES OF VASCULAR PLANT DIVERSITY IN RESPONSE TO TREE DIEBACK IN A MEDITERRANEAN LOWLAND FOREST

La Montagna D.[1], Cambria V.E.[1*], Attorre F.[1], De Sanctis M.[1], Fanelli G.[1]

[1]*Department of Environmental Biology, Sapienza University of Rome, 00185, Rome, Italy.*
[*]*Corresponding author email: vitoemanuele.cambria@uniroma1.it*

(Received Feb 22 2023; received in revised form Mar 30 2023; accepted Apr 29 2023)

Abstract – Lowland forests underwent a century long history of deforestation and degradation that left only few remnants of this forest type, especially in the Mediterranean region. These remnants have high conservation value but are threatened by tree diebacks related to different causes. Here we focused on the area of Palo Laziale (oak floodplain forest) and on the effects of the tree dieback following the summer drought of 2003.
In the framework of an ecological restoration project (LIFE PRIMED LIFE17 NAT/GR/000511), we collected data on plant communities' species composition both in 2019/2020 and compared these data to those collected in 1990, also accounting for life forms, chorotypes and Ellenberg Indicator Values. This analysis was conducted to assess whether there was any change in the species composition following the forest dieback. The total flora of the site increased from 462 to 490 species. Moreover, there has been a turnover of species with the loss of some grassland and halophytic species and the entrance of allochthonous/ruderal and freshwater habitat species. Despite this, the plant diversity remained unchanged in bioindication terms, demonstrating a certain resilience of the ecosystem plant species, confirming the floristic re-survey approach to identify declining processes and support ecosystem-based restoration actions elsewhere.

Keywords: ecological restoration, eu habitats, flora analysis, life programme, natura2000.

Introduction

Coastal lowland forests and transitional wetlands are among the EU's most degraded and threatened ecosystems (Britton & Crivelli, 1993). They host a high level of biodiversity, especially for vascular plants and invertebrates and can provide many ecosystem services (Bonan, 2008; Nocentini et al., 2022). In particular, these ecosystems, are a sink for carbon and their degradation could reduce their potential to sequester it (Breshears & Allen, 2002). Furthermore, they are clearly defined from a physiognomical, geomorphological and ecological point of view (Chytrý et al., 2020).
Due to the flat morphology, these areas are suitable for human activities, which menace their biodiversity. The main anthropogenic pressures are infrastructure development, land conversion, drainage works, pollution, overexploitation, and invasive alien species (Millennium Ecosystem Assessment, 2005; Díaz et al., 2019). This, in turn, increases their vulnerability to climate change (extreme weather events, topsoil aridity, uneven rainfall regimes) which is also very impactful (De Dios et al., 2007). Many Mediterranean lowland forest of Italy can be found under these conditions, and they host several habitats and species with an 'unfavourable', 'vulnerable' or 'near-threatened' conservation status according to the Habitats Directive (Ercole et al., 2021).
There are several zones with residual lowland forests in the Italian Peninsula, such as the Po Valley, Policoro plain and the Tyrrhenian Coast. Until a few centuries ago, the latter was an expanse of marshland and forest, which has been intensively fragmented over time. These areas have been reclaimed

doi: 10.13133/2239-3129/18016

and subsequently cultivated or built upon, leading to an inexorable loss of biodiversity (Lucchese & Pignatti, 1990). Some of the remaining patches of lowland forest have been preserved because they were noble hunting grounds, (e.g. Castel Porziano natural reserve) although some of them have over time been fragmented and/or surrounded by industry, farmland, and urban areas.

Another threat of the Mediterranean lowland forest is represented by oak forest dieback, which is increasing dramatically in different forest ecosystems (Allen, 2009; Colangelo et al., 2017; Maselli, 2004; Ogaya et al., 2015). It is mainly caused by prolonged droughts, sudden flooding and rapid fluctuations in soil water levels (Brasier, 1996; Gutschick & BassiriRad, 2003; Levanič et al., 2011). Individually, none of these phenomena is responsible for the forest decline, but all of them cause undue stress to the oak trees and lay the groundwork for secondary attacks by saproxylic insects (e.g. *Agrilus* spp., *Scolytus* spp.) and increased susceptibility to opportunistic pathogenic fungi of the stems, leaves and roots of the plants (*Discula quercina*, *Diplodia corticola*, *Armillaria* spp., etc.).

In Italy, oak woodlands, from north to south of the Peninsula, have also been subject to decline, reduction, and death of forest stands under a wide range of environmental conditions (Bertini et al., 2011; Di Filippo et al., 2010, Conte et al., 2019). The Palo Laziale wood is one such case, with the first symptoms of forest dieback appearing in 1995 and gradually exacerbating until the arid summer of 2003 when about 40% of the adult trees were found dead (Scarnati & Attorre, 2014).

To address the forest dieback of Palo Laziale, a Nature and Biodiversity LIFE project, LIFE PRIMED LIFE17 NAT/GR/000511 "Restoration, management and valorisation of PRIority habitats of MEDiterranean coastal areas)" was started in 2018. It is an interdisciplinary project aiming at improving the conservation status of the habitats and species of Nestos Delta and Palo Laziale Wood Natura 2000 sites in Greece and Italy, respectively.

Palo Laziale preserves a high biological diversity due to several habitats becoming progressively rare in the lowland areas of Lazio (Della Bella et al., 2005; Fraticelli & Sarrocco, 2012; Pizzuti Piccoli, 2016). The plant diversity is well documented by a study (Lucchese, 1990) highlighting its remarkable diversity and providing a snapshot of the environmental situation before the forest dieback. Changes in plant species diversity go far beyond the description of taxonomic composition if viewed from the perspective of plants as ecological indicators (Pignatti et al., 2001). It gives proxies of the interrelationships among components of the ecosystem, that are very difficult to gain with other approaches. Notwithstanding habitat restoration initiatives are increasingly gaining momentum (Wortley et al., 2013), detecting changes in plant checklists biodiversity remains a kick-off practice relatively unexplored by ecologists and practitioners. However, a large network of European botanists acknowledging the importance of plant taxa, are starting to create a database that will allow in the future to assess the importance of diachronic analyses (see ReSurveyEurope initiative)

Forest dieback could have effects that go far beyond the composition and structure of forests alone. A catastrophic event such as the one observed in Palo Laziale could affect the entire ecosystem in all its components, both arboreal and herbaceous. In order to assess any ecosystem changes, it is necessary to consider the entire plant diversity, both forest, aquatic and grassland habitats, so as to ascertain how the entire vegetal landscape may have changed. For this purpose, the diachronic study of the plant taxa, i.e. the comparison of the species present before and after dieback, is irreplaceable since the only historic data available is a plant checklist.

For this study, we used the valuable species list from Lucchese (1990), a high-quality work rarely available in the areas studied. This data is not as rich as a detailed phytosociological study of the vegetation and forest structure, but these data prior to dieback were unavailable. The aim is to emphasise the importance of the diachronic analysis of plants when dealing with the conservation and management of declined ecosystems repeating the floristic sampling 30 years after the first time to identify and quantify overall changes and effects of the forest dieback on the plant diversity of the site.

Materials and Methods

Study area

The Palo Laziale Wood is one of the last remaining patches of lowland forest along the coast of the Lazio Region that once covered the shoreline from the Tiber mouth to Capo Linaro (Barca et al., 1981; Fraticelli et al., 1995). It is located about 40 km northwest of Rome, directly facing the Tyrrhenian Sea. It is a flat area of about 130 hectares, with an altitude between 3 and 10 metres above sea level.

The woodland area is located within a private property, entirely fenced in, and part of the SAC IT6030022 Bosco di Palo Laziale.

The predominant vegetation of the area is represented by a deciduous forest, with a prevalence of *Quercus cerris* and rare individuals of *Q. petraea* and *Q. frainetto* (*Crataego laevigatae-Quercion cerridis* Arrigoni 1997). In drier and warmer areas, Mediterranean sclerophyllous scrub can be found with a predominance of *Quercus ilex*, *Pistacia lentiscus* and *Phillyrea*

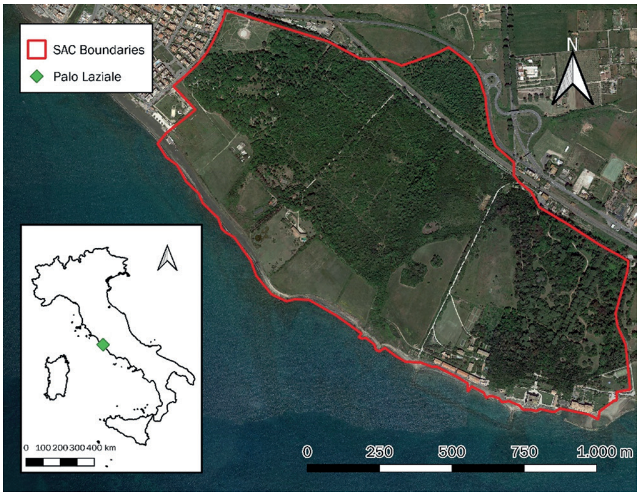

Figure 1. Map of the study site with the SAC boundaries.

latifolia (*Quercion ilicis* Br.-Bl. ex Molinier 1934). One of the peculiarities of this forest is that during periods of heavy rainfall, it becomes completely swamped, with pools in the depressed areas persisting until late summer and the vegetation changes drastically, with *Fraxinus angustifolia* subsp. *oxycarpa* and *Quercus robur* (*Lauro nobilis-Fraxinion angustifoliae* Kárpáti I. & Kárpáti V., 1961). For the syntaxonomy, refer to Mucina et al. (2016). There are also numerous open areas with dry and wet herbaceous vegetation ranging in size from a few square meters to a few hectares.

The Palo Laziale woodland occurs in an area with almost exclusively Plio-Quaternary deposits (ISPRA, 2014). The study site's littoral is included in the lower Mesomediterranean thermotype and the upper dry/lower sub-humid umbrotype (Blasi, 1994).

The intensity of the forest dieback was quite high. The first signs were observed in 1995, then in 2003 approximately 40% of trees individuals died due to the high heat waves of those years and as a consequence of the fungal pathogen attack of *Biscougnaxia mediterranea*. Moreover, in 2004, to prevent the spread of this pathogen, phytosanitary clear-cuts were performed in the area (Scarnati & Attorre, 2014).

Sampling methods

The fieldwork was carried out both in 2019-2020 to compile a list of vascular plant species.

The sampling protocol consists of exploring exactly the same area investigated by Lucchese (1990), noting all the plant species present in all seasons of the year, approximately once a week in the flowering season (March-June) and approximately every 15 days in the dormant period. No plots were recorded as the aim was to compare the current species list with the 1990's list. During sampling, voucher specimens were collected to check identifications.

The material collected is deposited in the Fanelli collection of the Rome Herbarium, Italy (Herbarium Code: RO). Pignatti et al. (2017) and various monographs were used for identifications. For the *Isoetaceae*, Troìa and Greuter (2015) was consulted, while for *Bolboschoenus* spp. we followed Hroudová et al. (2007) and for *Viola* subsect. *Viola,* Hodálová et al. (2008) was used. The nomenclature follows Bartolucci et al. (2018). Afterwards, the nomenclatural alignment between the lists, two species from the 1990's list were synonyms, but it did not affect significatively the species counting.

Data analysis

A comparative analysis was conducted between our checklist and that of Lucchese (1990). Turnover was calculated using the Sørensen index (Sørensen, 1948) which is recommended for presence-absence data (Vellend, 2001). Calculation of dissimilarity between the two lists, were calculated using "vegan" package in R (Oksanen et al., 2013).

A number of indicators were used to compare the two lists. In particular, the percentages of the biological forms, chorotypes and Ellenberg indices were calculated. The chorotypes represent the geographical distribution patterns of the species and are taken from Pignatti (2005), aggregating them into the main forms. Further, Raunkiær's biological forms were used, again taken from Pignatti (2005).

Ellenberg indicator values (EIVs) are a series of 6 numbers (L light, T temperature, K continentality, F moisture, N nutrient, R pH, S salinity) representing the factors that determine the typical environmental conditions of the species. They were applied to all the species list. The values were taken from Fanelli et al. (2007) and Pignatti et al. (2001) for the native flora and from Domina et al. (2018) for the alien flora.

For the ecological characterisation, a seventh value was added, the hemeroby value, which can give the idea of the disturbance level and the influence of anthropic impact (Hill et al., 2002; Kowarik, 1999). The recently published list in Midolo et al. (2023) was not considered because many species from our list are missing. Finally, the species list was divided into native and alien species.

To compare the two lists, visual analysis was first carried out by graphing the percentages of the various indicators. Barplots were used for the chorological types and biological forms. While for the EIVs and hemeroby value, multiple line plots were made.

To test which parameters or indicators between the 1990 list and ours are significantly different, G-test (Signorell et al., 2019) was used. All analyses were performed with the R software.

The whole set of raw data is available in Supplementary Table S1.

Results

We found 490 plant taxa, a number higher than that reported in the 1990 checklist (462 taxa).
The turnover of species and subspecies was massive in the last 30 years, with 146 taxa newly found, 116 taxa no longer found from the old checklist, and 344 species in common (fig. 2). From the comparison between alien and native species, the G-test highlighted a significant difference between newly and no longer found species (p = 0.049093). Sörensen dissimilarity index is 0.272, indicating a substantial change of the flora over 30 years.
According to the chorological spectra, a few differences between the two surveys can be observed (fig. 3). Cosmopolitan and Eurasiatic species have slightly decreased, while Eurimediterranean have slightly increased. There is also an increase in naturalised adventitious plants, including many allochthonous species, some of which invasive. The G-test indicates that none of the variations are significant ($p > 0.05$).
Looking at the biological spectra (fig. 3), an increase in the number of therophytes, phanerophytes, nano-phanerophytes, hydrophytes and chamaephytes was observed together with a decrease of geophytes and hemicryptophytes, with no significative differences.

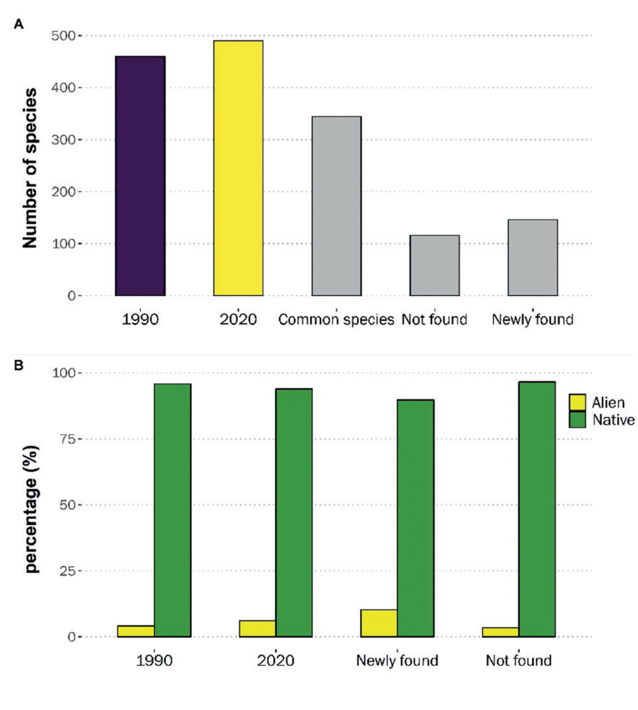

Figure 2. Comparison of floristic data from Lucchese (1990) and 2020 data. A) Total species number and number of common, newly and no longer found species above. B) Percentage of alien and native species. According to the G-test, the only significative difference is between the newly and no longer found species on the percentage of alien species ($p < 0.05$).

EIVs showed a reduction in the light (L), continentality (K) and salinity (S) values in 2020. All other indicators are stable, except for the nutrient value (N), which increased slightly. None of these differences are significant (fig.4).
If we focus on the EIVs calculated for the turnover species, i.e., no longer found species from the old checklist and the newly found species in ours, we notice some interesting results. The species previously present required high values for luminosity (L), continentality (K), salinity (S) and hemeroby (H). In contrast, the species that have colonized the area in the last 30 years tend to have lower values, thus explaining the decrease in the values of the ecological indicators for the general plant species. In particular, the hemeroby value is the only one with significant differences between the two years (p = 0.04603). Among the species changed, it can be seen lower hemeroby values for categories 0-2, and an increase of higher-intermediate hemeroby values (category 6). Higher category of hemeroby values (categories 7-9) shows an increase in species for 2020 and a decrease for 1990 species. On the other hand, species of categories 3-4 increase in the newly found species (fig.5).

Discussion and Conclusion

The approach used in this work follows the theory of the plants as ecological bioindicator herited from Sandro Pignatti (Pignatti et al., 2001). This approach is very powerful, and it can help to understand the interaction among species. Unfortunately, little is known and understood by a broader audience. In this paper, we tried to use this approach to address the problem of a very highly biodiverse habitat that suffered a dramatic collapse a few years ago.
Dieback events are becoming more frequent in the Mediterranean, affecting different species of trees (Rozas & Sampedro, 2013; Touhami et al., 2020). They have been related to various environmental phenomena, particularly periods of severe drought. Diebacks are also often associated with parasite outbreaks, especially fungi (Sallé & Bouget, 2020; Thomas, 2008). Palo Laziale dieback fits perfectly into the general pattern, as it coincides with the driest year of the last 20 years and the outbreak of certain non-pathogenic fungal species that become aggressive under these stressful conditions (Beccaccioli et al., 2021; Mazzaglia et al., 2001). This phenomenon seems to be becoming increasingly frequent in connection with global change (Allen, 2009).
While the drivers of dieback are the subject of intense investigation (McDowell et al., 2022), studies investigating the effect of such catastrophic events on the ecosystem as a whole are much rarer or non-existent. In this study, we were fortunate to compare the flora before and after the severe

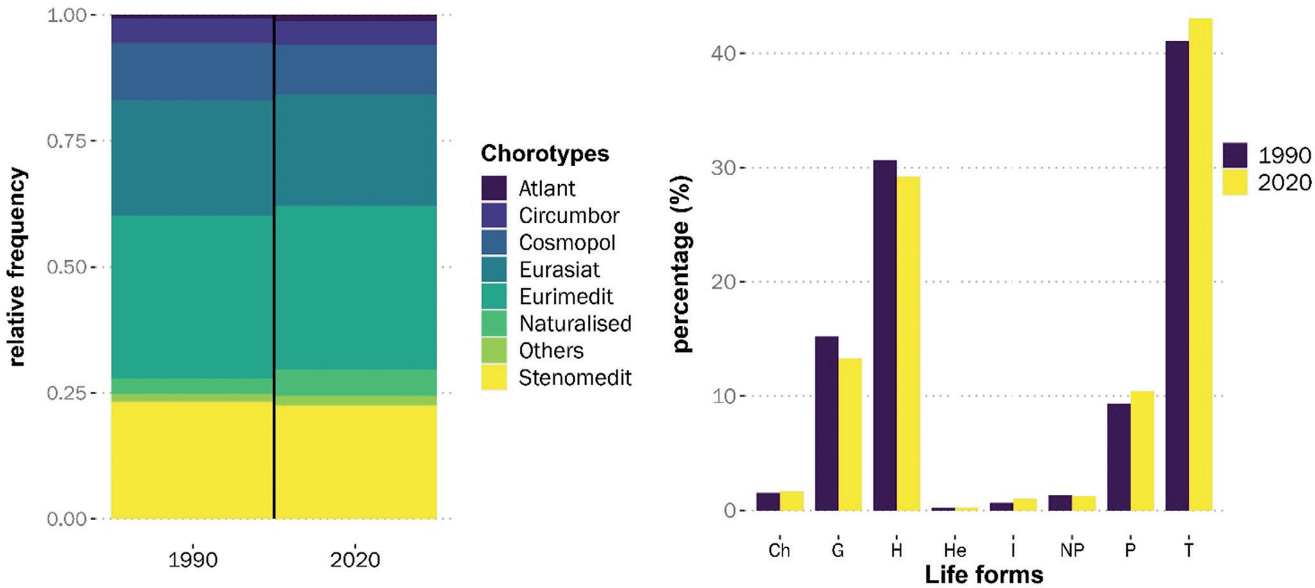

Figure 3. Differences between chorotypes and life forms of the two floristic data studied. Some chorotypes have been grouped into the category "Others" (Endemics + South European Orophytes + Mediterranean Mountain). The differences were tested with G-test showing no significative differences ($p > 0.05$).

case of dieback of 2003, using this information as a proxy for the effects on the ecosystem.

The total number of species in the Palo Laziale wood has remained unchanged over the last three decades. Some rare species have disappeared (*Carex grioletii, Juncus gerardii*) due to an alteration of the habitat conditions (forest disturbance and dilution of saltmarsh substrates, respectively) but, on the other hand, species of equal conservation interest have appeared (*Solenopsis laurentia*). The case of *Carex grioletii* is ecologically interesting because it is a microtherm species and an indicator of relict

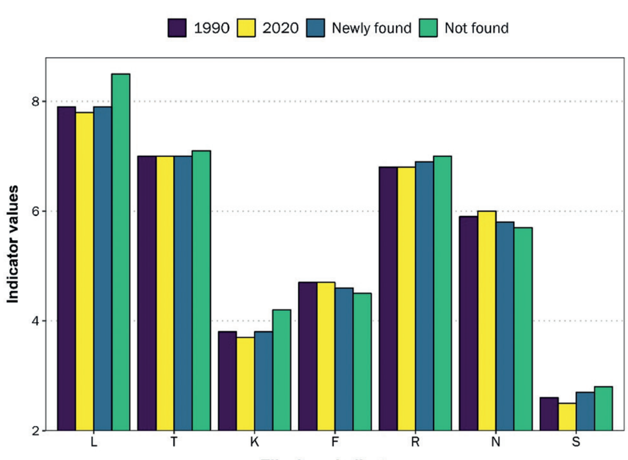

Figure 4. Ellenberg Indicator Values (EIVs) in comparison between the two years and the turnover species. There are some differences between the data, but the G-test showed they are not significant ($p > 0.05$).

vegetation with little anthropisation, and where it tends to disappear it is replaced by its congener *Carex sylvatica* with similar ecological characteristics but much more adapted to disturbance (Montelucci, 1952).

Although the richness of the flora has remained unchanged, there has been a noticeable turnover in species. The turnover of flora is relatively high (dissimilarity = 0.272). No longer found species belong to two main groups: grassland and halophilous species. Although the meadows of Palo Laziale are still remarkably rich in species, some species typical of Mediterranean perennial meadows have not been found (*Brachypodium phoenicoides*, *Anacamptis morio*, *Medicago orbicularis*, etc).

Analysis of the indicators shows that although the composition has changed qualitatively, it does not change regarding chorological, biological and ecological groups. Salinity (S) decreases slightly, and it is quite challenging to explain this variation, but it could be related to changes in the water table level. Interestingly, the number of thermophyte species remains unchanged even though the climatic trends of the area show a conspicuous increase in temperatures over the past thirty years. These results are only qualitative but suggest a trend likely to become significant in the future. The finding of wetlands species often of high conservation value is worth mentioning, such as *Solenopsis laurentia*, *Isolepis cernua*, *Epilobium tetragonum*, etc. These species seem to indicate an increase in humidity.

While the composition of the flora and the number of species remain unchanged before and after the dieback, a significant change is an increase in the number of allochthonous

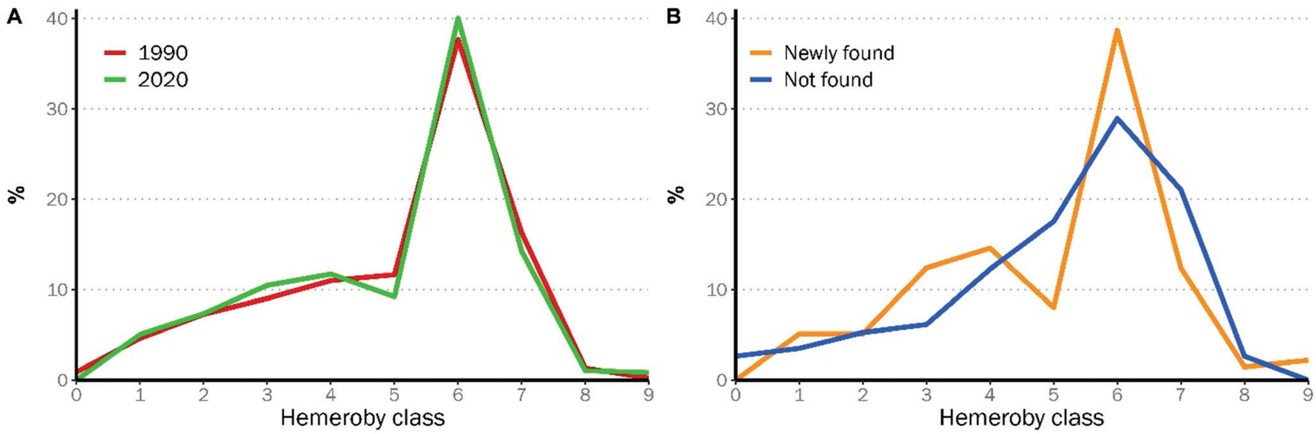

Figure 5. Hemeroby indicator values in comparison between: A) the two years (1990, 2020) and B) between the newly and no longer found species. They were tested with G-test showing no significance between two years datasets ($p > 0.05$), while on the other hand, the turnover species showed a significant difference ($p < 0.05$).

(comparing no longer found and newly found species). Numerous allochthonous species have been found, some of which are invasive (*Cortaderia selloana*, *Araujia sericifera*, *Lonicera japonica*, etc.). This trend is consistent with what has been observed in Rome, more or less in the same period (Fratarcangeli et al., 2022). The expansion of invasive species is a global phenomenon and represents one of the greatest threats to biodiversity (Rosenzweig, 2001). This expansion is not fully understood. Some authors relate it to the increase in propagule pressure resulting from increased human communication and traffic (Van Kleunen et al., 2015). On the other hand, the presence of allochthonous species is often observed in highly disturbed environments (Garzia et al., 2019; Haeuser et al., 2017). In Palo Laziale, the increase in allochthonous species seems to be related to the increase in disturbance, as evidenced by the change in the Hemeroby index (fig.5). Many changes occurred between 1990 and 2020 (phytosanitary cuts, excavation of temporary pools, urban development in the surrounding areas), but the most intense disturbance during this period seems to be the dieback. Indeed, in addition to being a threat to forest communities, it represents a catastrophic phenomenon that may have altered the entire ecosystem. In fact, dieback opened gaps in the vegetation and increased the amount of dead wood and changed the cycle of nutrients in the soil, causing the ingression of species previously non-existent in the ecosystem, such as fringe species and aliens. This effect is poorly documented in the literature (but see Devagiri et al., 2016) and is commonly observed in field surveys.

Disentangling the stress factors and disturbance effects in a complex natural ecosystem is challenging. The analysis of the temporal changes in flora diversity allows us to retrace past stress events and verify the effects of anthropogenic and non-anthropogenic pressures on threatened habitats to help prevent inappropriate management measures (e.g., excessive digging of salt ponds). Such an approach can provide a compelling ecological indication with a relatively low effort to support focused restoration practices. This work showed remarkable plant diversity and remarkable stability in the number of plant species despite the strong disturbance that intervened between the two censuses. Considering that plant species are indicators of the state of ecosystems (Pignatti et al., 2001) this suggests that the ecosystem of Palo Laziale has a high resilience. The ultimate goal of the current LIFE project is to maintain this kind of response favouring the ecological conditions which enhance the floristic composition, in order to counteract future tightening of climate regimes and human impacts.

The site of Palo Laziale well-represents the typical heterogeneity and richness of the Mediterranean natural mosaics, although its small extent may exacerbate the effects of external sources of disturbance. (Rösch et al., 2015). To maintain such a remarkable level of habitat and species diversity, is important to keep the resilience of the ecosystems equally high (Timpane-Padgham et al., 2017). Species turnover would become unavoidable in quickly changing environments (Brown, 1995; van der Maarel & Sykes, 1993). A stable number of species could secure optimal occupancy of the ecological roles in functional and healthy communities (Ferlian et al., 2018). Decades of biodiversity-ecosystem functions research has provided compelling evidence for a largely positive relationship between biodiversity and ecosystem functioning in most cases (Cardinale et al., 2012). Ensuring the variability of abiotic and biotic factors, rather than passively conserving the existing categories of habitats, should be among the most appropriate management decision on a long-term basis for dynamic ecosystems. Monitoring is paramount, especially for unveiling local effects of large-scale phenomena like urbanisation, human disturbance, and climate change (Ceschin et al., 2010; Searcy, 2012; Wirth et al., 2020). Comparing the changes in flora composition of Palo Laziale and elsewhere over time (see Cornelini & Petrella, 1996; Rich & Karran, 2006; Salinitro et al., 2019; Todini & Crosti, 2020) has proven to be a promising approach to identify declining processes and support ecosystem-based restoration actions elsewhere. The results of this work call for more integration of the diachronic studies of flora into conservation decision-making.

Acknowledgement

We would like to thank Fernando Lucchese for the precious information he gave us about Palo Laziale and Francesca Buffi and Emile Ammann for their support during fieldwork. Finally, we want to thank two anonymous reviewers who greatly helped us to improve the manuscript.

Funding

This work was supported by EU in the framework of the European LIFE project LIFE17 NAT/GR/000511 LIFE PRIMED.

References

Allen C.D., 2009. Climate-induced forest dieback: an escalating global phenomenon. Unasylva 231(232), 60.

Barca M., D'Adamo M., Gallo M., Lombardi Boccia G., Loret E., Monti P., Reggioli C., Scarpati L., 1981. Indagine preliminare per l'istituzione di un parco litoraneo del medio Tirreno: il Bosco di Palo. Cooperativa di Studi Zoologici e Ambientali, Roma.

Bartolucci F., Peruzzi L., Galasso G., Albano A., Alessandrini A., Ardenghi N.M.G., Astuti G., Bacchetta G., Ballelli S., Banfi E., Barberis G., Bernardo L., Bouvet D., Bovio M., Cecchi L., Di Pietro R., Domina G., Fascetti S., Fenu G., Festi F., Foggi B., Gallo L., Gottschlich G., Gubellini L., Iamonico D., Iberite M., Jiménez-Mejías P., Lattanzi E., Marchetti D., Martinetto E., Masin R.R., Medagli P., Passalacqua N.G., Peccenini S., Pennesi R., Pierini B., Poldini L., Prosser F., Raimondo F.M., Roma-Marzio F., Rosati L., Santangelo A., Scoppola A., Scortegagna S., Selvaggi A., Selvi F., Soldano A., Stinca A., Wagensommer R.P., Wilhalm T., Conti F., 2018. An updated checklist of the vascular flora native to Italy. Plant Biosystems-An International Journal Dealing with all Aspects of Plant Biology 152(2), 179-303.

Beccaccioli M., Grottoli A., Scarnati L., Faino L., Reverberi M., 2021. Nanopore Hybrid Assembly of *Biscogniauxia mediterranea* Isolated from *Quercus cerris* Affected by Charcoal Disease in an Endangered Coastal Wood. Microbiology Resource Announcement 10(42), e00450-21.

Bertini G., Amoriello T., Fabbio G., Piovosi M., 2011. Forest growth and climate change: evidences from the ICP-Forests intensive monitoring in Italy. iForest-Biogeosciences and Forestry 4(6), 262.

Blasi C., 1994. Fitoclimatologia del Lazio – Carta del fitoclima del Lazio. Università La Sapienza, Regione Lazio, Roma.

Bonan G.B., 2008. Forests and Climate Change: Forcings, Feedbacks, and the Climate Benefits of Forests. Science 320(5882), 1444-1449.

Brasier C.M., 1996. *Phytophthora cinnamomi* and oak decline in southern Europe. Environmental constraints including climate change. Annales des Sciences Forestieres 53 (2-3), 347-358.

Breshears D.D., Allen C.D., 2002. The importance of rapid, disturbance-induced losses in carbon management and sequestration. Global Ecology and Biogeography 11(1), 1-5.

Britton R.H., Crivelli A.J., 1993. Wetlands of southern Europe and North Africa: Mediterranean wetlands. Pages 129-194 In: Whigham D.F., Dykyjová D., Hejný S. (eds), Wetlands of the world I: Inventory, ecology and management. Handbook of vegetation science, 15(2), 129. Springer, Dordrecht.

Brown J.H., 1995. Macroecology. University of Chicago Press, Chicago.

Cardinale B.J., Duffy J.E., Gonzalez A., Hooper D.U., Perrings C., Venail P., Narwani A., Mace G.M., Tilman D., Wardle D.A., Kinzig A.P., Daily G.C., Loreau M., Grac J.B., Larigauderie A., Srivastava D.S., Naeem S., 2012. Biodiversity loss and its impact on humanity. Nature 486, 59-67.

Ceschin S., Salerno G., Bisceglie S., Kumbaric A. 2010. Temporal floristic variations as indicator of environmental changes in the Tiber River in Rome. Aquatic Ecology 44, 93-100.

Chytrý M, Tichý L, Hennekens S.M., Knollová I., Janssen J.A., Rodwell J.S., Schaminée J.H. et al., 2020. EUNIS Habitat Classification: Expert system, characteristic species combinations and distribution maps of European habitats. Applied Vegetation Science 23(4), 648-675.

Colangelo M., Camarero J.J., Battipaglia G., Borghetti M., De Micco V., Gentilesca T., Ripullone F.A., 2017. A multi-proxy assessment of dieback causes in a Mediterranean oak species. Tree Physiology 37(5), 617-631.

Conte A.L., Di Pietro R., Iamonico D., Di Marzio P., Cillis G., Lucia D., Fortini P., 2019. Oak decline in the Mediterranean basin: a study case from the southern Apennines (Italy). Plant Sociology 56(2), 69-80.

Cornelini P., Petrella P., 1996. La flora della stazione di Roma Ostiense: variazioni e confronti con il censimento di Cacciato (1952). Annali di Botanica 52(11), 457-478.

De Dios V.R., Fischer C., Colinas C., 2007. Climate Change Effects on Mediterranean Forests and Preventive Measures. New Forests 33(1), 29-40.

Della Bella V., Bazzanti M., Chiarotti F., 2005. Macroinvertebrate diversity and conservation status of Mediterranean ponds in Italy: water permanence and mesohabitat influence. Aquatic Conservation Marine and Freshwater Ecosystems 15(6), 583-600.

Devagiri G.M., Khaple A.K., Mohan S., Venkateshamurthy P., Tomar S., Arunkumar A.N., Joshi G., 2016. Species diversity, regeneration and dominance as influenced by canopy gaps and their characteristics in tropical evergreen forests of Western Ghats, India. Journal of forestry research 27, 799-810.

Díaz S., Settele J., Brondízio E.S., Ngo H.T., Agard J., Arneth A., Zayas C.N., 2019. Pervasive human-driven decline of life on Earth points to the need for transformative change. Science 366(6471), eaax3100.

Di Filippo A., Alessandrini A., Biondi F., Blasi S., Portoghesi L., Piovesan G., 2010. Climate change and oak growth decline: Dendroecology and stand productivity of a Turkey oak (*Quercus cerris* L.) old stored coppice in Central Italy. Annals of Forest Science 67(7), 706-706.

Domina, G., Galasso, G., Bartolucci, F., Guarino, R. 2018. Ellenberg Indicator Values for the vascular flora alien to Italy. Flora Mediterranea 28, 53-61.

Ercole S., Angelini P., Carnevali L., Casella L., Giacanelli V., Grignetti A., La Mesa G., Nardelli R., Serra L., Stoch F., Tunesi L., Genovesi P. (ed.), 2021. Rapporti Direttive Natura (2013-2018). Summary of the conservation status of species and habitats of Community interest and actions to combat alien species of Union significance in Italy (ISPRA, Series Reports 349/2021).

Fanelli G., Pignatti S., Testi A., 2007. An application case of ecological indicator values (Zeigerwerte) calculated with a simple algorithmic approach. Plant Biosystems-An International Journal Dealing with all Aspects of Plant Biology 141(1), 15-21.

Fratarcangeli C., Fanelli G., Testolin R., Buffi F., Travaglini A., 2022. Floristic changes of vascular flora in the city of Rome through grid-cell census over 23 years. Urban Ecosystem 25, 1851-1864.

Fraticelli F., Sarrocco S., 2012. La comunità ornitica del bosco planiziale di Palo Laziale (Roma) –30 anni dopo (1982-2012). LIPU–Lega Italiana Protezione Uccelli.

Fraticelli F., Troisi A., Canu A., Fadda G., 1995. Percorso Natura, Rifugio faunistico del Bosco di Palo. WWF Italia, Roma, Italia.

Ferlian O., Cesarz S., Craven D., Hines J., Barry K.E., Bruelheide H., Buscot F., Haider S., Heklau H., Herrmann S., Kühn P., Pruschitzki U., Schädler M., Wagg C., Weigelt A., Wubet T., Eisenhauer N., 2018. Mycorrhiza in tree diversity–ecosystem function relationships: conceptual framework and experimental implementation. Ecosphere 9(5), e02226.

Garzia M., Iacobelli L., D'Angeli A., Gregori G., Guidobaldi G., Marengo L., Scalici M., Fanelli G., Battisti C., 2019. Aliens come from the edge: a distribution pattern of focal alien plants in a small coastal reserve. Quaderni del Museo Civico di Storia Naturale di Ferrara 7, 113-119.

Genovesi P., Angelini P., Bianchi E., Dupré E., Ercole S., Giacanelli V., Ronchi F., Stoch F. et al., 2014. Specie e habitat di interesse comunitario in Italia: distribuzione, stato di conservazione e trend. ISPRA, Roma, Italia, Serie Rapporti, 194, 330.

Gutschick V.P., BassiriRad H., 2003. Extreme events as shaping physiology, ecology, and evolution of plants: toward a unified definition and evaluation of their consequences. New Phytologist 160(1), 21-42.

Hao M., Corral-Rivas J.J., González-Elizondo M.S., Ganeshaiah K.N., Nava-Miranda M.G., Zhang C., Zhao X., Von Gadow K., 2019. Assessing biological dissimilarities between five forest communities. Forest Ecosystems 6, 30.

Haeuser E., Dawson W., van Kleunen M., 2017. The effects of climate warming and disturbance on the colonization potential of ornamental alien plant species. Journal of Ecology 105(6), 1698-1708.

Hill M.O., Roy D.B., Thompson K., 2002. Hemeroby, urbanity and ruderality: bioindicators of disturbance and human impact. Journal of Applied Ecology 39(5), 708-720.

Hodálová I., Mereďa Jr. P., Mártonfi P., Mártonfiová L., Danihelka J., 2008. Morphological characters useful for the delimitation of taxa within *Viola* subsect. *Viola* (Violaceae): a morphometric study from the West Carpathians. Folia Geobotanica 43(1), 83-117.

Hroudová Z., Zákravský P., Ducháček M., Marhold K., 2007. Taxonomy, distribution and ecology of Bolboschoenus in Europe. Annales Botanici Fennici 44(2), 81-102.

ISPRA, 2014. Carta Geologica d'Italia alla scala 1: 50.000 – Progetto CARG, Foglio 373, Cerveteri. https://www.isprambiente.gov.it/Media/carg/373_CERVETERI/Foglio.html (accessed June 2021).

Kowarik I., 1999. Natürlichkeit, Naturnähe und Hemerobie als Bewertungskriterien. Pages 1-18 In Konold W., Böcker R., Hampicke U. (eds), Handbuch für Naturschutz und Landschaftspflege. Ecomed, Landsberg, Germany.

Levanič T., Čater M., McDowell N.G., 2011. Associations between growth, wood anatomy, carbon isotope discrimination and mortality in a *Quercus robur* forest. Tree physiology 31(3), 298-308.

Lucchese F., 1990. La flora della riserva naturale di Palo Laziale (Roma). Annali di Botanica 48, 263-289.

Lucchese F., Pignatti S., 1990. Sguardo sulla vegetazione del Lazio marittimo. Ricerche ecologiche floristiche e faunistiche sulla fascia costiera medio-tirrenica italiana II, 5-48.

Maselli F., 2004. Monitoring forest conditions in a protected Mediterranean coastal area by the analysis of multiyear NDVI data. Remote Sensing of Environment 89(4), 423-433.

Mazzaglia A., Anselmi N., Gasbarri A., Vannini A., 2001. Development of a polymerase chain reaction (PCR) assay for the specific detection of *Biscogniauxia mediterranea* living as an endophyte in oak tissues. Mycological Research 105(8), 952-956.

McDowell N.G., Ball M., Bond-Lamberty B., Kirwan M.L., Krauss K.W., Megonigal P., Mencuccini M., Ward N.D., Weintraub M.N., Bailey V., 2022. Processes and mechanisms of coastal woody-plant mortality. Global Change Biology 28(20), 5881-5900. Accepted Author Manuscript.

Midolo G., Herben T., Axmanová I., Marcenò C., Pätsch R., Bruelheide H., Karger D.N., Aćić S., Bergamini A., Bergmeier E., Biurrun I., Bonari G., Čarni A., Chiarucci A., De Sanctis M., Demina O., Dengler J., Dziuba T., Fanelli G., Garbolino E., del Galdo G.G., Goral F., Guler B., Hinojos-Mendoza G., Jansen F., Jimenez-Alfaro B., Lengyel A., Lenoir J., Perez-Haase A., Pielech R., Prokhorov V., Rasomavicius V., Ruprecht E., Rusina S., Silc U., Skvorc A., Stancic Z., Tatarenko I., Chytrý M., 2023. Disturbance indicator values for European plants. Global Ecology and Biogeography 32(1), 24-34.

Millennium Ecosystem Assessment, 2005. Ecosystems and human well-being: biodiversity synthesis. World Resources Institute, Washington, DC.

Montelucci G., 1952. Nuove stazioni laziali di *Carex grioletii* Roem., relitto di tempi forestali. Nuovo Giornale Botanico Italiano, nuova serie, 59, 482-485.

Mucina L., Bültmann H., Dierßen K., Theurillat J.-P., Raus T., Čarni A., Šumberová K., Willner W., Dengler J., Gavilán García R., Chytrý M., Hájek M., Di Pietro R., Iakushenko D., Pallas J., Daniëls F.J.A., Bergmeier E., Guerra A.S., Ermakov N., Valachovič M., Schaminée J.H.J., Lysenko T., Didukh Y.P., Pignatti S., Rodwell J.S., Capelo J., Weber H.E., Solomeshch A., Dimopoulos P., Aguiar C., Hennekens S.M., Tichý L., 2016. Vegetation of Europe: hierarchical floristic classification system of vascular plant, bryophyte, lichen, and algal communities. Applied Vegetation Science 19 (1), 3-264.

Nocentini S., Travaglini D., Muys B., 2022. Managing Mediterranean Forests for Multiple Ecosystem Services: Research Progress and Knowledge Gaps. Current Forestry Reports 8(2), 229-256.

Ogaya R., Barbeta A., Başnou C., Peñuelas J., 2015. Satellite data as indicators of tree biomass growth and forest dieback in a Mediterranean holm oak forest. Annals of Forest Science 72(1), 135-144.

Oksanen J., Blanchet F.G., Kindt R., Legendre P., Minchin P.R., O'hara R.B., Stevens M.H.H., Oksanen M.J., Suggests M., 2013. The vegan package. Community ecology package 2(9), 1-295.

Pignatti S., 2005. Valori di bioindicazione delle piante vascolari della flora d'Italia. Braun-Blanquetia 39, 1-97.

Pignatti S., Bianco P.M., Fanelli G., Paglia S., Pietrosanti S., Tescarollo P., 2001. Le piante come indicatori ambientali. Manuale tecnico-scientifico. Agenzia Nazionale per la Protezione dell'Ambiente, Roma, Italy.

Pignatti S., Guarino R., La Rosa M., 2017. Flora d'Italia (Vol. 1-4). Edagricole di New Business Media, Milano, Italia.

Pizzuti Piccoli A., 2016. Note sui rettili presenti nell'Oasi Naturale del Bosco di Palo (Lazio settentrionale, Italia). Naturalista siciliano S. IV, XL (2), 53-65.

Rich T.C., Karran A.B., 2006. Floristic changes in the British Isles: comparison of techniques for assessing changes in frequency of plants with time. Botanical Journal of the Linnean Society 152(3), 279-301.

Rösch V., Tshcarntke T., Scherber C., Batáry P., 2015. Biodiversity conservation across taxa and landscapes requires many small as well as single large habitat fragments. Oecologia 179, 209-222.

Rosenzweig M.L., 2001. The four questions: what does the introduction of exotic species do to diversity. Evolutionary Ecology Research 3(3), 361-367.

Rozas V., Sampedro L., 2013. Soil chemical properties and dieback of *Quercus robur* in Atlantic wet forests after a weather extreme. Plant and Soil 373, 673-685.

Salinitro M., Alessandrini A., Zappi A., Tassoni A., 2019. Impact of climate change and urban development on the flora of a southern European city: nalysis of biodiversity change over a 120-year period. Scientific reports 9(1), 9464.

Sallé A., Bouget C., 2020. Victims or perpetrators: contribution and response of insects to forest diebacks and declines. Annals of Forest Science 77, 104.

Scarnati L., Attorre F., 2014. Indagine conoscitiva sul Bosco di Palo Laziale finalizzata alla conservazione degli habitat naturali. Sapienza University Press, Rome, Italy.

Searcy K.B., 2012. Changes In the Flora of the Mount Holyoke Range, Hampshire Co., Massachusetts Over the Past 150 Years (1860–2010). Rhodora 114(958), 113-132.

Signorell A., Aho K., Alfons A., Anderegg N., Aragon T., Arppe A., Baddeley A., Barton K., Bolker B., Borchers H.W. et al., 2019. Package DescTools, Tools for descriptive statistics. R package version 0.99, 28, 17.

Sørensen T.J., 1948. A method of establishing groups of equal amplitude in plant sociology based on similarity of species content, and its application to analyses of the vegetation on Danish commons. Biologiske Skrifter 5(4), 1-34.

Thomas F.M., 2008. Recent advances in cause-effect research on oak decline in Europe. CABI Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources 3(037), 1-12.

Timpane-Padgham B.L., Beechie T., Klinger T., 2017. A systematic review of ecological attributes that confer resilience to climate change in environmental restoration. PLoS One 12(3), e0173812.

Todini A., Crosti R., 2020. Il cinghiale (*Sus scrofa*) come determinante di cambiamenti di vegetazione in una foresta urbana mediterranea: impatto sulla biodiversità di un'area protetta. Forest@-Journal of Silviculture and Forest Ecology 17(1), 71.

Touhami I., Chirino E., Aouinti H., El Khorchani A., Elaieb M.T., Khaldi A., Nasr Z., 2020. Decline and dieback of cork oak (*Quercus suber* L.) forests in the Mediterranean basin: a case study of Kroumirie, Northwest Tunisia. Journal of Forestry Research 31(5), 1461-1477.

Troìa A., Greuter W., 2015. Flora critica d'Italia. Isoetaceae – Versione 1. Fondazione per la Flora Italiana, Firenze, Italia.

van der Maarel E., Sykes M.T., 1993. Small-scale plant species turnover in a limestone grassland: the carousel model and some comments on the niche concept. Journal of Vegetation Science 4(2), 179-188.

van Kleunen M., Dawson W., Essl F., Pergl J., Winter M., Weber E., Kreft H., Weigelt P., Kartesz J., Nishino M., Antonova L.A., Barcelona J.F., Cabezas F.J., Cárdenas D., Cárdenas-Toro J., Castaño N., Chacón E., Chatelain C., Ebel A.L., Figueiredo E., Fuentes N., Groom Q.J., Henderson L., Inderjit B., Kupriyanov A., Masciadri S., Meerman J., Morozova O., Moser D., Nickrent D.L., Patzelt A., Pelser P.B., Baptiste M.P., Poopath M., Schulze M., Seebens H., Shu W.S., Thomas J., Velayos M., Wieringa J.J., Pyšek P., 2015. Global exchange and accumulation of non-native plants. Nature 525(7567), 100-103.

Vellend M., 2001. Do commonly used indices of β-diversity measure species turnover?. Journal of Vegetation Science 12(4), 545-552.

Wirth T., Kovács D., Sebe K., Lengyel A., Csiky J., 2022. Changes of 70 years in the non-native and native flora of a Hungarian county seat (Pécs, Central Europe). Plant Biosystems-An International Journal Dealing with all Aspects of Plant Biology 156(1), 24-35.

Wortley L., Hero J.M., Howes M., 2013. Evaluating ecological restoration success: a review of the literature. Restoration ecology 21(5), 537-543.

Raw datasets

DATASET: "La Montagna et al 2023"

Species	Year	Chorotype	Main life form	L	T	K	F	R	N	S	H
Acacia_dealbata	2020	Naturalised	P	9	9	5	6	5	3	0	7
Acer_campestre	2020	Eurasiat	P	5	7	4	5	7	6	0	3
Acer_monspessulanum	2020	Eurimedit	P	6	8	5	3	8	4	0	1
Aegonychon_purpocoeruleum	2020	Eurasiat	H	5	7	6	4	8	4	0	1
Agave_americana	2020	Naturalised	P	9	10	2	2	X	2	0	1
Agrostis_stolonifera	2020	Circumbor	H	8	X	X	6	X	5	0	6
Aira_elegantissima_subsp_elegantissima	2020	Eurimedit	T	8	9	5	2	3	1	0	6
Alisma_plantago-aquatica	2020	Cosmopol	I	7	X	X	1	X	8	0	6
Alliaria_petiolata	2020	Eurasiat	H	5	6	5	5	7	9	0	2
Allium_neapolitanum	2020	Stenomedit	G	6	9	4	4	4	7	0	4
Allium_roseum_subsp_roseum	2020	Stenomedit	G	8	8	4	3	6	5	0	5
Allium_triquetrum	2020	Stenomedit	G	6	9	4	4	4	7	0	1
Alopecurus_myosuroides_subsp_myosuroides	2020	Cosmopol	T	6	6	5	6	7	7	0	6
Amaranthus_deflexus	2020	Naturalised	T	8	8	5	4	6	9	0	7
Amaranthus_retroflexus	2020	Naturalised	T	9	9	7	4	X	9	0	7
Anacamptis_laxiflora	2020	Eurimedit	G	8	7	5	6	6	5	0	6
Anacamptis_papilionacea	2020	Eurimedit	G	8	8	5	3	6	4	0	6
Anacyclus_radiatus_subsp_radiatus	2020	Stenomedit	T	8	9	4	4	5	2	0	7
Andryala_integrifolia	2020	Eurimedit	T	8	9	3	2	2	1	0	6
Anisantha_diandra	2020	Eurimedit	T	8	8	5	3	5	4	0	6
Anisantha_madritensis	2020	Eurimedit	T	8	7	5	3	X	1	0	6
Anisantha_rigida	2020	Cosmopol	T	8	8	5	4	6	5	0	6
Anisantha_sterilis	2020	Eurimedit	T	8	11	5	2	X	2	0	6
Anthemis_maritima_subsp_maritima	2020	Others	H	11	9	4	1	X	1	0	3
Anthoxanthum_odoratum	2020	Eurasiat	H	X	X	5	X	5	3	0	4
Araujia_sericifera	2020	Naturalised	T	9	9	5	3	5	5	0	8
Arbutus_unedo	2020	Stenomedit	P	11	9	4	3	4	2	0	2
Arisarum_vulgare_subsp_vulgare	2020	Stenomedit	G	6	8	4	4	4	4	0	3
Artemisia_absinthium	2020	Others	Ch	9	6	7	4	X	8	0	6
Arum_italicum_subsp_italicum	2020	Stenomedit	G	6	8	4	4	5	5	0	3
Arundo_plinii	2020	Stenomedit	G	11	8	4	4	4	2	0	4
Asparagus_acutifolius	2020	Stenomedit	G	6	9	4	2	5	5	0	2
Asperula_laevigata	2020	Stenomedit	H	6	6	4	4	7	3	0	2
Asphodelus_ramosus_subsp_ramosus	2020	Stenomedit	G	11	9	4	2	3	5	0	4
Asplenium_onopteris	2020	Cosmopol	H	3	9	4	3	5	3	0	1
Asplenium_trichomanes_subsp_quadrivalens	2020	Cosmopol	H	5	X	5	5	X	4	0	2
Atriplex_prostrata	2020	Circumbor	T	9	X	X	6	X	9	0	7
Avena_barbata	2020	Eurimedit	T	8	8	5	3	7	2	0	6
Avena_fatua	2020	Eurasiat	T	6	X	6	6	7	X	0	6
Avena_sterilis	2020	Eurimedit	T	8	9	5	3	6	4	0	6
Ballota_nigra_subsp_meridionalis	2020	Eurimedit	H	8	6	5	5	X	8	0	7
Barbarea_vulgaris	2020	Cosmopol	H	8	X	5	7	X	6	0	6
Bellardia_viscosa	2020	Eurimedit	T	8	8	3	3	3	3	0	6
Bellevalia_romana	2020	Eurimedit	G	8	7	5	3	6	4	0	6
Bellis_annua	2020	Stenomedit	T	6	9	4	7	2	2	0	7
Bellis_perennis	2020	Eurasiat	H	9	5	4	X	X	5	0	7
Bellis_sylvestris	2020	Stenomedit	H	5	8	4	3	3	3	0	3
Beta_vulgaris__subsp_vulgaris	2020	Eurimedit	H	11	7	5	6	6	5	1	6
Betonica_officinalis	2020	Eurasiat	H	6	5	4	6	4	3	0	2
Bidens_frondosa	2020	Naturalised	T	7	7	X	9	7	8	0	7
Blackstonia_perfoliata_subsp_perfoliata	2020	Eurimedit	T	8	7	5	X	9	4	0	4
Bolboschoenus_glaucus	2020	Eurasiat	G								
Borago_officinalis	2020	Eurimedit	T	7	8	5	3	5	5	0	6
Brachypodium_distachyon	2020	Stenomedit	T	11	9	3	1	3	2	0	4
Brachypodium_rupestre	2020	Atlant	H	8	6	4	5	8	4	0	4
Brachypodium_sylvaticum_subsp_sylvaticum	2020	Eurasiat	H	4	5	5	5	6	6	0	2
Briza_maxima	2020	Cosmopol	T	8	10	5	2	4	1	0	5
Briza_minor	2020	Cosmopol	T	8	9	5	2	4	1	0	6
Bromus_hordeaceus_subsp_hordeaceus	2020	Cosmopol	T	7	6	5	X	X	X	0	6
Bryonia_dioica	2020	Eurimedit	G	8	7	5	5	8	6	0	3
Bunias_erucago	2020	Eurimedit	T	8	8	5	4	5	3	0	6

Cakile_maritima_subsp_maritima	2020	Eurimedit	T	9	8	2	6	X	8	2	3
Calamagrostis_epigejos_subsp_epigejos	2020	Circumbor	H	12	6	5	4	7	5	2	6
Calendula_arvensis	2020	Eurimedit	T	7	8	5	3	8	5	0	6
Calepina_irregularis	2020	Eurimedit	T	8	8	4	3	5	3	0	6
Callitriche_stagnalis	2020	Eurasiat	I	9	8	5	12	5	1	0	5
Campanula_erinus	2020	Stenomedit	T	7	8	4	2	X	1	0	4
Campanula_rapunculus	2020	Eurasiat	H	7	7	5	4	6	4	0	6
Campsis_radicans	2020	Naturalised	P	9	7	5	5	5	4	0	9
Capsella_bursa-pastoris_subsp_bursa-pastoris	2020	Cosmopol	H	7	X	5	5	5	4	0	7
Capsella_rubella	2020	Eurimedit	T	8	9	5	2	4	2	0	7
Cardamine_hirsuta	2020	Cosmopol	T	7	8	5	3	5	4	0	6
Carduus_nutans_subsp_nutans	2020	Atlant	H	8	X	5	3	8	6	0	6
Carduus_pycnocephalus_subsp_pycnocephalus	2020	Eurimedit	H	7	8	4	3	X	3	0	6
Carex_depauperata	2020	Eurimedit	H	4	4	4	6	X	7	0	2
Carex_distachya	2020	Stenomedit	H	6	6	4	2	4	5	0	1
Carex_divisa	2020	Eurimedit	G	8	8	2	3	5	3	0	6
Carex_divulsa	2020	Eurimedit	H	7	6	5	4	5	5	0	5
Carex_flacca_subsp_erythrostachys	2020	Eurasiat	G	7	5	5	6	8	X	0	4
Carex_flacca_subsp_flacca	2020	Eurasiat	G	7	5	5	6	8	X	0	3
Carex_otrubae	2020	Eurimedit	H	9	5	5	9	X	5	0	7
Carex_punctata	2020	Eurimedit	H	7	6	3	10	4	3	0	3
Carex_spicata	2020	Eurasiat	H	7	6	5	4	5	5	0	7
Carex_sylvatica	2020	Eurasiat	H	2	5	3	5	7	5	0	2
Carlina_corymbosa	2020	Stenomedit	H	6	X	4	2	X	4	0	5
Carpobrotus_edulis	2020	Naturalised	Ch	9	10	4	1	X	1	1	2
Carthamus_caeruleus	2020	Eurimedit	H	11	11	5	3	7	4	0	5
Carthamus_lanatus	2020	Eurimedit	T	11	8	5	3	5	6	0	6
Catapodium_rigidum	2020	Eurimedit	T	8	8	5	2	5	4	0	6
Centaurea_jacea_subsp_gaudinii	2020	Eurasiat	H	6	5	7	4	7	3	0	6
Centaurea_napifolia	2020	Stenomedit	T	8	11	5	4	6	3	0	6
Centaurea_solstitialis	2020	Stenomedit	H	11	9	4	3	X	5	0	6
Centaurea_sphaerocephala_subsp_sphaerocephala	2020	Stenomedit	H	11	10	4	1	X	1	0	6
Centaurium_erythraea_subsp_erythraea	2020	Eurasiat	H	8	6	5	5	6	X	0	4
Centaurium_maritimum	2020	Stenomedit	T	11	9	4	3	3	1	0	5
Centaurium_pulchellum_subsp_pulchellum	2020	Eurasiat	T	9	6	7	7	9	3	0	4
Centaurium_tenuiflorum	2020	Eurasiat	T	9	8	5	7	7	2	0	4
Cephalaria_transsylvanica	2020	Eurasiat	T	7	6	7	3	7	2	0	4
Cerastium_brachypetalum	2020	Eurimedit	T	11	7	5	3	7	2	0	6
Cerastium_glomeratum	2020	Eurimedit	T	7	X	5	5	5	5	0	7
Cerastium_ligusticum	2020	Stenomedit	T	11	9	4	2	3	1	0	6
Cerinthe_major_subsp_major	2020	Stenomedit	T	7	8	4	4	5	9	0	6
Chamaeiris_foetidissima	2020	Eurimedit	G	7	7	5	4	4	5	0	2
Chamaemelum_fuscatum	2020	Others	T	8	8	4	3	3	2	0	6
Chamaerops_humilis	2020	Stenomedit	NP	11	10	3	1	4	1	0	1
Chenopodium_album	2020	Cosmopol	T	7	7	5	4	5	7	0	7
Cichorium_intybus	2020	Eurasiat	H	9	6	5	3	8	5	0	6
Cirsium_vulgare_subsp_vulgare	2020	Eurasiat	H	8	5	5	5	X	8	0	6
Clematis_vitalba	2020	Eurasiat	P	7	7	4	5	7	7	0	3
Clinopodium_nepeta	2020	Others	H	5	7	5	3	9	3	0	6
Clinopodium_vulgare_subsp_vulgare	2020	Circumbor	H	7	5	4	4	7	3	0	3
Coleostephus_myconis	2020	Stenomedit	T	8	9	4	3	5	4	0	6
Convolvulus_althaeoides	2020	Stenomedit	H	8	9	4	3	5	2	0	4
Convolvulus_arvensis	2020	Eurasiat	G	7	7	5	4	5	5	0	6
Convolvulus_sepium	2020	Eurasiat	H	8	6	5	6	7	9	0	7
Cortaderia_selloana	2020	Naturalised	H	8	9	5	6	5	6	0	6
Crataegus_monogyna	2020	Eurasiat	P	6	7	5	4	6	3	0	4
Crepis_bursifolia	2020	Others	H	9	6	4	3	8	2	0	7
Crepis_leontodontoides	2020	Others	H	5	8	4	4	3	7	0	3
Crepis_sancta_subsp_sancta	2020	Eurimedit	T	11	9	6	2	X	2	0	6
Crepis_vesicaria	2020	Eurimedit	T	8	8	3	3	6	2	0	6
Crithmum_maritimum	2020	Eurimedit	Ch	11	8	2	1	X	1	3	3
Cupressus_sempervirens	2020	Eurimedit	P	7	7	6	3	X	3	0	
Cuscuta_cesattiana	2020	Naturalised	T	8	7	5	X	X	X	0	6
Cuscuta_planiflora	2020	Eurimedit	T	8	7	5	X	X	X	0	
Cyclamen_hederifolium	2020	Stenomedit	G	4	8	5	5	5	5	0	1
Cyclamen_repandum_subsp_repandum	2020	Stenomedit	G	4	9	5	3	X	5	0	1

Cymbalaria_muralis	2020	Eurimedit	H	7	7	5	2	5	3	0	5
Cynodon_dactylon	2020	Cosmopol	G	8	8	5	4	X	4	0	7
Cynoglossum_creticum	2020	Eurimedit	H	11	9	5	3	X	7	0	6
Cynosurus_cristatus	2020	Eurasiat	H	8	5	4	5	5	4	0	6
Dactylis_glomerata_subsp_glomerata	2020	Eurasiat	H	7	6	5	4	5	6	0	5
Dactylis_hispanica_subsp_hispanica	2020	Stenomedit	H	11	8	4	2	5	2	0	3
Dasypyrum_villosum	2020	Eurimedit	T	8	10	5	2	4	2	0	6
Daucus_carota_subsp_carota	2020	Eurasiat	H	8	6	5	4	5	4	0	6
Dianthus_armeria_subsp_armeria	2020	Eurasiat	H	8	6	5	3	3	2	0	4
Digitaria_sanguinalis	2020	Cosmopol	T	7	7	5	3	6	4	0	7
Dioscorea_communis	2020	Eurimedit	G	5	7	5	5	8	6	0	1
Diplotaxis_erucoides_subsp_erucoides	2020	Stenomedit	T	8	8	4	3	5	5	0	6
Dipsacus_fullonum	2020	Eurimedit	H	6	8	5	7	5	5	0	6
Dittrichia_viscosa_subsp_viscosa	2020	Eurimedit	H	11	8	5	3	7	9	0	6
Ecballium_elaterium	2020	Eurimedit	G	7	8	5	3	5	3	0	6
Echium_italicum_subsp_italicum	2020	Eurimedit	H	11	8	5	3	3	4	0	6
Echium_plantagineum	2020	Eurimedit	T	11	8	5	3	5	5	0	6
Eleocharis_palustris_subsp_palustris	2020	Cosmopol	G	8	6	5	1	3	3	0	6
Elymus_repens_subsp_repens	2020	Circumbor	G	7	X	7	5	X	8	0	6
Epilobium_tetragonum	2020	Eurasiat	H	7	7	5	5	5	5	0	7
Equisetum_ramosissimum	2020	Circumbor	G	7	7	6	3	7	1	0	6
Erica_arborea	2020	Stenomedit	P	6	8	4	3	2	1	0	3
Erigeron_bonariensis	2020	Naturalised	T	8	8	5	3	X	7	0	7
Erigeron_sumatrensis	2020	Naturalised	T	8	8	5	3	X	7	0	7
Erodium_acaule	2020	Others	H	11	8	3	3	3	3	0	6
Erodium_cicutarium	2020	Cosmopol	H	8	7	5	3	5	3	0	6
Erodium_malacoides_subsp_malacoides	2020	Stenomedit	T	11	9	4	2	5	2	0	6
Erodium_moschatum	2020	Eurimedit	T	11	9	5	2	5	2	0	7
Ervilia_hirsuta	2020	Eurasiat	T	7	5	5	X	X	X	0	3
Ervum_gracile	2020	Eurimedit	T	7	8	5	4	4	4	0	5
Ervum_pubescens	2020	Eurimedit	T	8	8	5	3	4	2	0	6
Eryngium_campestre	2020	Eurimedit	H	9	7	5	3	8	3	0	4
Eryngium_maritimum	2020	Eurimedit	G	11	8	3	4	7	1	1	2
Euonymus_europaeus	2020	Eurasiat	P	6	5	5	5	8	5	0	2
Euphorbia_amygdaloides	2020	Eurasiat	Ch	4	5	4	5	7	6	0	2
Euphorbia_cuneifolia	2020	Stenomedit	T	7	7	4	6	7	4	0	5
Euphorbia_exigua_subsp_exigua	2020	Eurimedit	T	11	9	5	2	6	1	0	6
Euphorbia_helioscopia_subsp_helioscopia	2020	Cosmopol	T	9	7	5	3	5	6	0	6
Euphorbia_peplus	2020	Circumbor	T	6	7	4	4	5	7	0	6
Euphorbia_platyphyllos	2020	Eurimedit	T	6	7	5	5	5	6	0	6
Euphorbia_prostrata	2020	Naturalised	T	7	8	5	2	5	4	0	7
Festuca_danthonii_subsp_danthonii	2020	Eurimedit	T	8	9	5	2	4	2	0	6
Festuca_fasciculata	2020	Eurimedit	T	11	10	3	1	X	1	1	6
Festuca_geniculata	2020	Stenomedit	T	8	9	4	2	4	2	0	6
Festuca_ligustica	2020	Stenomedit	T	8	9	4	2	4	2	0	6
Festuca_myuros	2020	Cosmopol	T	8	9	5	2	6	2	0	6
Ficaria_verna_subsp_ficariiformis	2020	Eurimedit	G	4	5	5	6	7	7	0	3
Ficaria_verna_subsp_verna	2020	Eurasiat	G	4	5	5	6	7	7	0	3
Ficus_carica	2020	Eurimedit	P	7	8	6	X	5	X	0	3
Filago_germanica	2020	Eurasiat	T	8	7	5	3	4	2	0	5
Foeniculum_vulgare_subsp_piperitum	2020	Eurimedit	H	9	8	5	3	7	7	0	6
Fraxinus_angustifolia_subsp_oxycarpa	2020	Eurasiat	P	4	8	6	7	7	8	0	2
Fraxinus_ornus_subsp_ornus	2020	Eurasiat	P	5	8	6	3	8	3	0	3
Fumaria_capreolata_subsp_capreolata	2020	Eurimedit	T	7	9	5	3	5	3	0	5
Fumaria_officinalis	2020	Eurasiat	T	7	7	5	4	5	6	0	6
Galactites_tomentosus	2020	Stenomedit	H	8	8	4	3	X	7	0	6
Galium_aparine	2020	Eurasiat	T	6	X	5	4	5	5	0	4
Galium_parisiense	2020	Eurimedit	T	11	8	5	2	3	1	0	6
Gastridium_ventricosum	2020	Stenomedit	T	8	9	4	2	4	2	0	5
Gaudinia_fragilis	2020	Eurimedit	T	8	8	5	3	5	3	0	6
Geranium_columbinum	2020	Eurasiat	T	7	9	6	2	5	2	0	4
Geranium_dissectum	2020	Eurasiat	T	7	8	5	2	5	2	0	6
Geranium_molle	2020	Eurasiat	T	7	6	5	3	5	4	0	6
Geranium_purpureum	2020	Cosmopol	T	4	6	5	4	5	5	0	3
Geranium_rotundifolium	2020	Eurasiat	T	7	8	5	3	6	3	0	6
Geum_urbanum	2020	Circumbor	H	4	5	5	5	6	7	0	3

Gladiolus_italicus	2020	Eurimedit	G	9	9	5	3	5	3	0	4
Hedera_helix_subsp_helix	2020	Eurimedit	P	4	5	4	5	X	X	0	1
Heliotropium_europaeum	2020	Eurimedit	T	11	8	5	3	7	2	1	7
Helminthotheca_echioides	2020	Eurimedit	T	11	8	5	2	X	2	0	6
Holcus_lanatus_subsp_lanatus	2020	Circumbor	H	7	5	4	6	X	4	0	6
Hordeum_bulbosum	2020	Cosmopol	H	8	10	5	4	5	4	0	6
Hordeum_murinum_subsp_leporinum	2020	Eurimedit	T	9	9	5	3	5	3	0	7
Hymenocarpos_circinnatus	2020	Stenomedit	H	11	9	4	2	2	2	0	5
Hyoseris_radiata	2020	Stenomedit	H	11	8	4	2	7	1	0	3
Hypericum_australe	2020	Stenomedit	H	7	8	4	7	6	4	0	4
Hypericum_perforatum_subsp_veronense	2020	Eurasiat	H	7	8	6	X	X	X	0	5
Hypochoeris_achyrophorus	2020	Stenomedit	T	11	9	4	2	X	2	0	5
Hypochoeris_radicata	2020	Eurasiat	H	9	8	4	2	X	1	0	6
Isoetes_duriei	2020	Stenomedit	G	7	9	4	10	1	1	0	8
Isoetes_gymnocarpa	2020	Atlant	G								
Isoetes_histrix	2020	Stenomedit	G	7	10	4	10	1	1	0	7
Isoetes_sicula	2020		G								
Isolepis_cernua	2020	Cosmopol	T	8	6	5	9	4	1	0	7
Jacobaea_aquatica	2020	Eurasiat	H	7	6	5	8	4	5	0	
Jacobaea_erratica	2020	Eurasiat	H	7	6	4	4	7	4	0	6
Juncus_articulatus_subsp_articulatus	2020	Circumbor	G	8	7	4	8	6	5	0	6
Juncus_bufonius	2020	Cosmopol	T	4	7	5	6	4	1	0	7
Juncus_capitatus	2020	Eurimedit	T	8	10	2	8	4	1	1	7
Juncus_conglomeratus	2020	Circumbor	H	7	7	4	8	6	5	0	6
Juncus_effusus_subsp_effusus	2020	Cosmopol	H	7	7	5	9	6	5	0	6
Juncus_heterophyllus	2020	Atlant	I	7	7	3	10	4	3	0	3
Juncus_hybridus	2020	Eurimedit	T	8	8	3	8	6	3	0	7
Juncus_inflexus_subsp_inflexus	2020	Stenomedit	H	6	8	3	9	6	5	0	2
Juncus_subnodulosus	2020	Eurasiat	G	8	6	4	9	6	5	0	6
Kickxia_commutata_subsp_commutata	2020	Stenomedit	H	8	7	4	4	5	4	0	6
Kickxia_elatine_subsp_elatine	2020	Eurimedit	T	8	7	5	4	5	4	0	6
Knautia_integrifolia_subsp_integrifolia	2020	Eurimedit	T	7	8	5	3	3	2	0	6
Lactuca_sativa_subsp_serriola	2020	Eurasiat	H	9	7	7	4	6	4	0	7
Lagurus_ovatus_subsp_ovatus	2020	Eurimedit	T	8	9	5	3	X	2	1	5
Lamium_amplexicaule	2020	Eurasiat	T	7	7	5	4	5	7	0	7
Lamium_bifidum	2020	Stenomedit	T	7	8	4	3	4	3	0	3
Lamium_purpureum	2020	Eurasiat	T	7	7	5	4	5	5	0	7
Lathyrus_annuus	2020	Eurimedit	T	8	8	5	3	5	2	0	6
Lathyrus_aphaca_subsp_aphaca	2020	Eurimedit	T	6	6	5	3	X	X	0	3
Lathyrus_clymenum	2020	Stenomedit	T	7	8	4	4	3	3	0	4
Lathyrus_ochrus	2020	Stenomedit	T	7	8	4	2	5	2	0	6
Lathyrus_oleraceus	2020	Atlant	T	9	9	4	3	4	3	0	6
Lathyrus_sphaericus	2020	Eurimedit	T	11	9	5	2	5	2	0	4
Laurus_nobilis	2020	Stenomedit	P	2	7	4	8	4	6	0	4
Lemna_minuta	2020	Naturalised	I	7	6	5	12	7	8	0	7
Ligustrum_vulgare	2020	Eurasiat	NP	7	6	4	X	8	X	0	3
Limbarda_crithmoides	2020	Stenomedit	Ch	11	8	4	7	9	5	3	5
Limonium_narbonense	2020	Eurimedit	H	11	7	5	6	7	5	3	6
Linaria_vulgaris_subsp_vulgaris	2020	Eurasiat	H	8	5	5	3	7	3	0	6
Linum_trigynum	2020	Eurimedit	T	11	9	5	2	3	2	0	5
Linum_usitatissimum_subsp_angustifolium	2020	Eurimedit	H	7	7	5	3	7	2	0	6
Lolium_arundinaceum_subsp_arundinaceum	2020	Eurimedit	H	9	8	5	6	8	6	0	6
Lolium_multiflorum	2020	Eurimedit	T	7	7	5	4	X	6	0	6
Lolium_perenne	2020	Circumbor	H	8	5	4	5	X	7	0	6
Lolium_rigidum_subsp_rigidum	2020	Cosmopol	T	8	8	5	3	4	2	0	6
Loncomelos_narbonense	2020	Eurimedit	G	8	7	5	4	6	4	0	5
Lonicera_caprifolium	2020	Eurasiat	P	6	5	6	6	X	5	0	1
Lonicera_japonica	2020	Naturalised	P	6	5	6	6	X	5	0	3
Lotus_angustissimus	2020	Eurimedit	T	11	8	5	7	7	4	0	6
Lotus_ornithopodioides	2020	Stenomedit	T	11	9	4	2	1	1	0	5
Lotus_tenuis	2020	Eurasiat	H	9	7	5	6	7	7	0	6
Lotus_tetragonolobus	2020	Stenomedit	T	8	6	4	6	9	6	0	4
Lupinus_gussoneanus	2020	Stenomedit	T	11	9	4	2	2	2	0	3
Luzula_forsteri	2020	Eurimedit	H	4	7	5	4	4	5	0	2
Lychnis_flos-cuculi	2020	Circumbor	H	7	5	4	6	X	6	0	3
Lysimachia_arvensis	2020	Eurimedit	T	6	6	5	5	X	6	0	6

Lysimachia_foemina	2020	Cosmopol	T	8	7	5	4	9	5	0	5
Lysimachia_nardii	2020	Stenomedit	T	7	8	4	5	2	1	0	6
Lysimachia_nummularia	2020	Eurasiat	H	4	6	4	6	X	X	0	
Lythrum_hyssopifolia	2020	Cosmopol	T	8	7	5	7	3	4	0	7
Lythrum_junceum	2020	Stenomedit	H	7	8	4	7	3	4	0	7
Lythrum_salicaria	2020	Cosmopol	H	7	5	5	8	7	X	0	7
Lythrum_tribracteatum	2020	Eurimedit	T	7	8	5	7	3	4	0	5
Malope_malacoides	2020	Stenomedit	T	9	9	5	2	5	4	0	6
Malus_sylvestris	2020	Eurasiat	P	7	5	5	5	7	5	0	3
Malva_multiflora	2020	Stenomedit	T	8	9	4	2	5	4	0	7
Malva_punctata	2020	Stenomedit	T	8	9	4	2	5	4	0	6
Malva_sylvestris	2020	Circumbor	H	8	6	4	4	X	8	0	7
Matthiola_sinuata	2020	Stenomedit	H	11	10	4	2	X	1	2	3
Medicago_arabica	2020	Eurimedit	T	9	9	5	2	X	2	0	7
Medicago_doliata	2020	Stenomedit	T	11	9	4	2	X	2	0	6
Medicago_lupulina	2020	Eurasiat	T	7	5	X	4	8	7	0	6
Medicago_minima	2020	Eurimedit	T	11	7	5	3	8	1	0	5
Medicago_murex	2020	Stenomedit	T	11	9	4	2	X	2	0	6
Medicago_polymorpha	2020	Eurimedit	T	9	9	5	2	X	2	0	6
Medicago_praecox	2020	Stenomedit	T	11	9	4	2	X	2	0	6
Medicago_rigidula	2020	Eurimedit	T	11	8	5	1	X	1	2	5
Medicago_truncatula	2020	Stenomedit	T	11	8	4	1	X	1	2	5
Melica_minuta_subsp_latifolia	2020	Stenomedit	H	8	10	4	2	5	2	0	2
Melica_uniflora	2020	Eurasiat	H	3	5	5	5	6	X	0	1
Melissa_officinalis_subsp_altissima	2020	Stenomedit	H	6	7	5	4	6	4	0	6
Mentha_aquatica_subsp_aquatica	2020	Eurasiat	H	7	5	5	9	7	4	0	7
Mentha_pulegium_subsp_pulegium	2020	Eurimedit	H	8	7	5	7	X	2	0	6
Mercurialis_annua	2020	Eurasiat	T	7	7	5	4	7	8	0	6
Muscari_comosum	2020	Eurimedit	G	7	8	5	3	7	0	0	4
Myosotis_ramosissima_subsp_ramosissima	2020	Eurasiat	T	9	8	5	2	4	3	0	6
Myrtus_communis	2020	Stenomedit	P	8	9	4	3	5	2	0	2
Narcissus_tazetta_subsp_tazetta	2020	Stenomedit	G	8	8	4	4	5	4	0	7
Oenanthe_pimpinelloides	2020	Eurimedit	H	5	7	3	4	5	4	0	3
Oloptum_miliaceum	2020	Stenomedit	H	5	7	4	4	7	5	0	5
Ophrys_apifera	2020	Eurimedit	G	7	6	5	4	9	2	0	4
Ophrys_bombyliflora	2020	Stenomedit	G	8	9	4	3	6	3	0	
Ophrys_sphegodes_subsp_sphegodes	2020	Eurimedit	G	8	8	5	4	9	3	0	4
Opuntia_ficus-indica	2020	Naturalised	P	9	8	6	2	X	2	0	1
Ornithopus_compressus	2020	Eurimedit	T	11	9	5	2	2	1	0	6
Orobanche_artemisiae-campestris	2020	Eurimedit	T	7	8	5	3	6	4	0	6
Orobanche_crenata	2020	Eurimedit	T	8	5	6	3	5	4	0	4
Orobanche_hederae	2020	Eurimedit	T	6	7	5	4	5	5	0	1
Orobanche_minor	2020	Eurasiat	T	7	6	5	4	5	4	0	6
Oxalis_articulata	2020	Naturalised	G	8	9	4	3	4	5	0	6
Oxalis_corniculata	2020	Eurimedit	H	7	7	0	4	X	6	0	7
Oxalis_pes-caprae	2020	Naturalised	G	8	10	4	3	X	5	0	6
Paliurus_spina-christi	2020	Eurasiat	P	7	8	6	3	7	3	0	4
Pancratium_maritimum	2020	Stenomedit	G	11	10	3	1	X	1	0	2
Papaver_rhoeas_subsp_rhoeas	2020	Others	T	6	6	5	5	7	X	0	6
Parapholis_pycnantha	2020	Atlant	T	10	8	6	4	8	3	5	4
Parietaria_judaica	2020	Eurimedit	H	7	8	5	3	X	6	0	5
Paspalum_dilatatum	2020	Naturalised	H	X	8	X	10	8	8	0	6
Paspalum_distichum	2020	Naturalised	G	X	8	X	10	8	8	0	7
Passiflora_caerulea	2020	Naturalised	P	6	6	5	5	5	5	0	9
Petrorhagia_dubia	2020	Stenomedit	T	11	8	5	2	8	2	0	6
Phalaris_aquatica	2020	Stenomedit	H	7	7	X	4	6	4	0	6
Phalaris_coerulescens	2020	Stenomedit	H	7	6	X	5	6	6	0	6
Phalaris_truncata	2020	Eurimedit	H	7	7	X	4	6	4	0	6
Phillyrea_angustifolia	2020	Stenomedit	P	11	10	4	1	X	2	0	2
Phillyrea_latifolia	2020	Stenomedit	P	5	8	4	4	X	5	0	4
Phleum_pratense_subsp_pratense	2020	Circumbor	H	7	6	5	5	6	6	0	6
Phoenix_canariensis	2020	Naturalised	P	11	10	2	4	X	4	0	9
Phragmites_australis	2020	Cosmopol	He	7	5	X	10	7	5	1	6
Picris_hieracioides	2020	Circumbor	H	8	X	5	4	8	4	0	6
Pinus_halepensis	2020	Stenomedit	P	11	10	4	2	0	2	0	1
Pinus_pinea	2020	Eurimedit	P	11	8	5	2	4	3	0	2

Pistacia_lentiscus	2020	Stenomedit	P	11	10	5	2	X	2	0	2
Pittosporum_tobira	2020	Naturalised	P	10	9	5	2	X	2	0	
Plantago_coronopus	2020	Eurimedit	T	8	7	5	7	7	4	0	6
Plantago_lanceolata	2020	Eurasiat	H	6	7	5	X	X	X	0	6
Plantago_macrorhiza	2020	Stenomedit	H	11	10	4	3	9	2	1	4
Plantago_major	2020	Eurasiat	H	8	X	X	5	X	7	0	7
Poa_annua	2020	Cosmopol	T	7	X	5	6	X	8	0	8
Poa_bulbosa	2020	Eurasiat	H	8	8	7	2	4	1	0	6
Poa_trivialis	2020	Eurasiat	H	6	X	5	7	X	7	0	6
Polycarpon_tetraphyllum_subsp_tetraphyllum	2020	Eurimedit	T	7	7	5	4	5	6	0	8
Polygala_monspeliaca	2020	Stenomedit	T	8	8	4	5	7	1	0	4
Polygonum_aviculare_subsp_aviculare	2020	Cosmopol	T	7	7	5	3	6	1	0	7
Polygonum_maritimum	2020	Cosmopol	Ch	11	10	4	1	3	1	2	5
Polygonum_romanum	2020	Others	Ch	11	10	4	2	2	2	0	7
Polypogon_monspeliensis	2020	Cosmopol	T	8	8	5	9	8	6	0	6
Portulaca_oleracea	2020	Cosmopol	T	7	8	5	4	7	7	0	7
Potamogeton_nodosus	2020	Cosmopol	I	6	6	5	12	7	6	0	9
Potentilla_reptans	2020	Eurasiat	H	6	6	5	6	7	5	0	6
Poterium_sanguisorba_subsp_balearicum	2020	Eurasiat	H	7	6	5	3	8	2	0	4
Prospero_autumnale	2020	Eurimedit	G	8	8	4	2	6	3	0	5
Prunella_laciniata	2020	Eurimedit	H	8	8	5	3	7	2	0	4
Prunella_vulgaris_subsp_vulgaris	2020	Circumbor	H	7	6	4	6	4	X	0	3
Prunus_spinosa_subsp_spinosa	2020	Eurasiat	P	7	5	5	X	X	X	0	4
Pteridium_aquilinum_subsp_aquilinum	2020	Cosmopol	G	6	5	4	6	3	3	0	3
Pulicaria_dysenterica	2020	Eurimedit	H	8	6	5	7	X	5	0	7
Pulicaria_odora	2020	Eurimedit	H	5	8	5	4	X	4	0	3
Pulicaria_vulgaris	2020	Eurasiat	T	7	7	5	7	7	7	0	7
Pyrus_spinosa	2020	Stenomedit	P	7	8	4	4	7	3	0	4
Quercus_cerris	2020	Eurimedit	P	6	8	5	4	4	4	0	2
Quercus_frainetto	2020	Eurasiat	P	7	6	6	6	5	6	0	1
Quercus_ilex	2020	Stenomedit	P	2	9	4	3	X	X	0	2
Quercus_petraea	2020	Eurasiat	P	6	6	5	5	4	6	0	3
Quercus_pubescens_subsp_pubescens	2020	Eurasiat	P	7	8	6	3	7	4	0	2
Quercus_robur	2020	Eurasiat	P	7	6	6	6	5	6	0	2
Quercus_suber	2020	Eurimedit	P	4	8	3	3	3	3	0	1
Quercus_virgiliana	2020	Eurasiat	P	7	8	6	4	7	5	0	
Ranunculus_bulbosus	2020	Eurasiat	H	8	6	5	3	7	3	0	6
Ranunculus_ophioglossifolius	2020	Eurimedit	T	7	7	5	8	6	6	0	7
Ranunculus_sardous	2020	Eurimedit	T	8	7	5	8	X	7	0	7
Ranunculus_velutinus	2020	Eurimedit	H	6	8	5	5	6	5	0	6
Raphanus_raphanistrum_subsp_raphanistrum	2020	Eurimedit	T	11	5	5	X	4	5	0	6
Reichardia_picroides	2020	Stenomedit	H	7	8	4	3	6	2	0	4
Rhagadiolus_edulis	2020	Eurimedit	T	7	8	5	4	5	4	0	4
Rhamnus_alaternus_subsp_alaternus	2020	Eurimedit	P	4	9	5	2	4	4	0	3
Robinia_pseudoacacia	2020	Naturalised	P	5	7	5	4	X	8	0	6
Romulea_bulbocodium	2020	Stenomedit	G	8	9	4	3	4	3	0	5
Romulea_rollii	2020	Stenomedit	G	9	9	3	3	5	2	0	4
Rosa_sempervirens	2020	Stenomedit	NP	6	8	4	3	4	6	0	2
Rostraria_pubescens	2020	Stenomedit	T	7	8	4	5	8	2	0	4
Rubia_peregrina	2020	Stenomedit	P	5	9	4	4	5	3	0	1
Rubus_caesius	2020	Eurasiat	NP	7	5	5	7	7	9	0	3
Rubus_ulmifolius	2020	Eurimedit	NP	5	8	5	4	5	8	0	3
Rumex_acetosa_subsp_acetosa	2020	Circumbor	H	8	X	X	X	4	5	0	3
Rumex_acetosella_subsp_pyrenaicus	2020	Cosmopol	H	8	5	5	5	1	2	0	6
Rumex_conglomeratus	2020	Eurasiat	H	8	7	5	7	X	8	0	6
Rumex_crispus	2020	Cosmopol	H	7	5	5	6	X	5	0	7
Rumex_sanguineus	2020	Eurasiat	H	4	5	4	8	7	7	0	4
Ruscus_aculeatus	2020	Eurimedit	G	4	8	5	4	5	5	0	1
Salsola_tragus	2020	Eurasiat	T	9	7	8	8	7	8	2	3
Salvia_verbenaca	2020	Stenomedit	H	8	8	4	3	5	7	0	6
Sambucus_nigra	2020	Eurasiat	P	7	5	4	5	X	9	0	5
Schoenoplectus_lacustris	2020	Cosmopol	G	8	5	5	11	7	5	0	
Scirpoides_holoschoenus	2020	Eurimedit	G	8	8	5	8	5	4	0	4
Scolymus_hispanicus	2020	Eurimedit	H	11	8	5	3	X	2	0	6
Scorpiurus_muricatus	2020	Eurimedit	T	7	8	5	2	X	2	0	4
Sedum_cepaea	2020	Eurimedit	T	2	8	2	4	2	4	0	3

Senecio_vulgaris	2020	Eurimedit	T	7	X	X	5	X	8	0	7
Serapias_lingua	2020	Stenomedit	G	11	8	4	3	4	2	0	6
Serapias_parviflora	2020	Stenomedit	G	11	10	4	2	4	2	0	5
Serapias_vomeracea	2020	Eurimedit	G	11	8	5	3	4	2	0	4
Setaria_verticillata	2020	Cosmopol	T	7	8	5	4	X	8	0	7
Sherardia_arvensis	2020	Eurimedit	T	8	6	5	5	8	5	0	6
Silene_bellidifolia	2020	Stenomedit	T	7	8	5	2	2	1	0	6
Silene_canescens	2020	Stenomedit	T	11	9	3	1	X	1	2	5
Silene_gallica	2020	Eurimedit	T	8	9	5	3	2	1	0	6
Silene_latifolia	2020	Stenomedit	H	6	9	4	3	4	2	0	3
Silene_vulgaris_subsp_tenoreana	2020	Eurasiat	H	8	X	X	4	7	2	0	5
Silybum_marianum	2020	Eurimedit	H	11	10	6	3	5	7	0	6
Sinapis_arvensis_subsp_arvensis	2020	Stenomedit	T	7	5	4	X	8	6	0	6
Sisymbrium_officinale	2020	Eurasiat	T	8	6	5	4	X	7	0	7
Sixalix_atropurpurea	2020	Stenomedit	H	6	8	4	3	X	2	0	5
Smilax_aspera	2020	Cosmopol	NP	6	10	4	2	5	3	0	1
Solanum_nigrum	2020	Cosmopol	T	7	6	5	3	5	7	0	7
Solenopsis_laurentia	2020	Stenomedit	T	7	8	4	7	2	1	0	7
Sonchus_asper_subsp_asper	2020	Eurasiat	T	7	5	X	4	7	7	0	6
Sonchus_bulbosus_subsp_bulbosus	2020	Stenomedit	G	7	8	4	3	5	3	0	3
Sonchus_oleraceus	2020	Eurasiat	T	7	5	X	4	8	8	0	6
Sonchus_tenerrimus	2020	Stenomedit	T	7	8	4	2	5	4	0	6
Sorbus_domestica	2020	Eurimedit	P	4	7	5	3	8	3	0	1
Sorbus_torminalis	2020	Eurasiat	P	4	6	5	4	7	4	0	1
Sorghum_halepense	2020	Cosmopol	G	8	8	X	7	8	8	0	6
Spartium_junceum	2020	Eurimedit	P	7	7	5	4	7	2	0	4
Spergularia_media	2020	Cosmopol	T	7	7	5	7	8	5	3	5
Spiranthes_spiralis	2020	Eurasiat	G	8	6	4	3	X	3	0	
Sporobolus_virginicus	2020	Cosmopol	G	11	11	4	1	0	1	3	3
Stachys_ocymastrum	2020	Stenomedit	T	11	9	4	2	7	2	0	6
Stachys_sylvatica	2020	Circumbor	H	5	X	4	7	7	7	0	3
Stellaria_media	2020	Cosmopol	T	7	X	X	4	7	8	0	6
Stellaria_neglecta	2020	Eurasiat	T	6	7	5	4	5	8	0	4
Stellaria_pallida	2020	Eurasiat	T	8	8	5	3	5	4	0	7
Symphyotrichum_squamatum	2020	Naturalised	T	8	8	5	4	7	7	0	7
Symphytum_bulbosum	2020	Eurasiat	G	4	7	6	4	5	3	0	2
Tamarix_canariensis	2020	Stenomedit	P	11	9	4	6	5	3	1	
Taraxacum_officinalis	2020	Circumbor	H	7	X	X	5	X	7	0	7
Thinopyrum_acutum	2020	Eurimedit	G	11	7	5	5	7	7	2	6
Thinopyrum_junceum	2020	Eurimedit	G	11	6	5	7	7	7	2	2
Thymelaea_passerina	2020	Eurimedit	T	8	7	5	3	7	2	0	5
Tordylium_apulum	2020	Stenomedit	T	11	9	4	2	X	3	0	6
Torilis_arvensis	2020	Cosmopol	T	7	8	5	4	7	6	0	4
Torilis_nodosa	2020	Eurimedit	T	7	8	6	4	7	6	0	6
Trifolium_angustifolium_subsp_angustifolium	2020	Eurimedit	T	11	9	5	2	3	2	0	5
Trifolium_arvense	2020	Eurasiat	T	8	5	5	2	2	1	0	6
Trifolium_campestre	2020	Eurasiat	T	8	5	5	4	X	4	0	6
Trifolium_echinatum	2020	Eurasiat	T	8	9	6	2	2	1	0	6
Trifolium_fragiferum_subsp_fragiferum	2020	Eurasiat	H	8	6	5	7	8	7	0	6
Trifolium_incarnatum_subsp_incarnatum	2020	Eurimedit	T	11	8	5	4	5	7	0	6
Trifolium_lappaceum	2020	Eurimedit	T	8	9	5	2	2	1	0	5
Trifolium_ligusticum	2020	Stenomedit	T	8	9	4	2	2	1	0	6
Trifolium_nigrescens_subsp_nigrescens	2020	Eurimedit	T	8	6	5	5	5	6	0	6
Trifolium_pallidum	2020	Eurimedit	T	7	8	5	4	2	2	0	6
Trifolium_pratense_subsp_pratense	2020	Circumbor	H	7	X	4	X	X	X	0	6
Trifolium_repens	2020	Eurasiat	H	8	X	X	X	X	7	0	7
Trifolium_resupinatum	2020	Eurasiat	T	8	8	5	5	X	5	0	6
Trifolium_scabrum	2020	Eurimedit	T	11	8	5	2	9	1	0	5
Trifolium_sebastiani	2020	Stenomedit	T	8	9	6	3	2	2	0	7
Trifolium_squamosum	2020	Eurimedit	T	11	8	5	6	7	6	0	5
Trifolium_squarrosum	2020	Eurimedit	T	11	9	5	2	3	2	0	6
Trifolium_stellatum	2020	Eurimedit	T	11	9	5	2	X	2	0	4
Trifolium_subterraneum	2020	Eurimedit	T	11	9	5	2	2	2	0	6
Trifolium_vesiculosum	2020	Eurimedit	T	8	9	5	3	5	2	0	6
Trigonella_alba	2020	Eurasiat	T	9	6	6	3	7	3	0	6
Trigonella_smalii	2020	Eurimedit	H	7	7	4	4	5	5	0	6

Triticum_vagans	2020	Stenomedit	T	11	10	X	5	5	4	0	4
Typha_angustifolia	2020	Circumbor	G	8	7	5	10	X	7	0	6
Typha_latifolia	2020	Cosmopol	G	8	6	5	10	X	8	0	4
Tyrimnus_leucographus	2020	Stenomedit	T	7	9	4	3	5	7	0	4
Ulmus_minor	2020	Eurasiat	P	5	7	5	X	8	X	0	4
Urospermum_dalechampii	2020	Eurimedit	H	8	8	5	3	X	3	0	4
Urtica_membranacea	2020	Stenomedit	T	7	8	5	3	6	3	0	6
Valerianella_eriocarpa	2020	Stenomedit	T	11	9	4	2	5	1	0	6
Verbascum_blattaria	2020	Eurasiat	H	8	6	7	3	7	6	0	6
Verbascum_blattaria_x_sinuatum	2020		H								
Verbascum_sinuatum	2020	Eurimedit	H	9	8	5	3	7	7	0	6
Verbena_officinalis	2020	Eurasiat	H	9	5	5	4	X	6	0	6
Veronica_arvensis	2020	Eurasiat	T	5	5	5	5	6	X	0	7
Veronica_cymbalaria	2020	Eurimedit	T	7	7	5	4	3	2	0	3
Veronica_hederifolia	2020	Eurasiat	T	6	6	5	5	3	7	0	6
Veronica_persica	2020	Naturalised	T	8	7	5	5	5	6	0	7
Veronica_serpyllifolia	2020	Eurasiat	H	X	X	5	3	5	X	0	3
Viburnum_tinus_subsp_tinus	2020	Stenomedit	P	5	9	4	4	5	3	0	2
Vicia_angustifolia	2020	Eurimedit	T	5	5	6	X	X	X	0	6
Vicia_benghalensis	2020	Stenomedit	T	11	9	4	2	5	2	0	7
Vicia_bithynica	2020	Eurimedit	T	7	7	5	3	5	5	0	5
Vicia_disperma	2020	Stenomedit	T	11	10	4	2	2	1	0	4
Vicia_grandiflora	2020	Eurasiat	H	7	8	6	3	5	4	0	2
Vicia_hybrida	2020	Eurimedit	T	7	8	5	3	5	5	0	6
Vicia_lutea	2020	Eurimedit	T	7	8	5	3	5	5	0	6
Vicia_narbonensis	2020	Eurimedit	T	7	8	5	3	5	5	0	7
Vicia_segetalis	2020	Eurimedit	T	5	5	6	X	X	X	0	6
Vinca_major_subsp_major	2020	Eurimedit	Ch	6	7	5	4	5	3	0	3
Viola_alba_subsp_deinhardtii	2020	Eurimedit	H	5	8	5	5	7	6	0	1
Viola_reichenbachiana	2020	Circumbor	H	4	5	4	5	7	6	0	2
Viola_suavis	2020	Eurasiat	H	5	8	6	5	4	4	0	2
Vitis_vinifera	2020	Cosmopol	P	6	8	5	6	8	6	0	2
Xanthium_italicum	2020	Eurimedit	T	8	8	5	5	X	1	0	6

DATASET: "Lucchese 1990"

Species	Year	Chorotype	Main life form	L	T	K	F	R	N	S	H
Acer_campestre	1990	Eurasiat	P	5	7	4	5	7	6	0	3
Acer_monspessulanum	1990	Eurimedit	P	6	8	5	3	8	4	0	1
Agrimonia_eupatoria_subsp_eupatoria	1990	Cosmopol	H	7	6	5	4	8	4	0	5
Agrostis_stolonifera	1990	Circumbor	H	8	X	X	6	X	5	0	6
Ailanthus_altissima	1990	Naturalised	P	6	7	5	5	5	5	0	6
Aira_cupaniana	1990	Stenomedit	T	8	9	4	2	3	1	0	6
Aira_elegantissima_subsp_elegantissima	1990	Eurimedit	T	8	9	5	2	3	1	0	6
Ajuga_iva	1990	Stenomedit	Ch	8	8	4	3	7	2	0	4
Alisma_plantagoaquatica	1990	Cosmopol	I	7	X	X	1	X	8	0	6
Allium_ampeloprasum	1990	Eurimedit	G	7	7	5	3	6	5	0	5
Allium_chamaemoly	1990	Stenomedit	G	8	10	4	2	4	2	0	5
Allium_roseum_subsp_roseum	1990	Stenomedit	G	8	8	4	3	6	5	0	5
Allium_triquetrum	1990	Stenomedit	G	6	9	4	4	4	7	0	1
Alopecurus_myosuroides_subsp_myosuroides	1990	Cosmopol	T	6	6	5	6	7	7	0	6
Alopecurus_rendlei	1990	Eurimedit	T	8	7	5	8	7	8	0	7
Althaea_cannabina	1990	Eurasiat	H	9	8	6	7	7	6	0	6
Althaea_officinalis	1990	Eurasiat	H	7	6	6	7	7	6	0	7
Amaranthus_blitoides	1990	Naturalised	T	9	7	7	3	X	9	0	7
Amaranthus_deflexus	1990	Naturalised	T	8	8	5	4	6	9	0	7
Amaranthus_hybridus_subsp_cruentus	1990	Cosmopol	T	8	8	5	4	6	8	0	7
Amaranthus_retroflexus	1990	Naturalised	T	9	9	7	4	X	9	0	7
Ammoides_pusilla	1990	Stenomedit	T	7	9	4	2	5	2	0	5
Anacamptis_laxiflora	1990	Eurimedit	G	8	7	5	6	6	5	0	6
Anacamptis_morio	1990	Eurasiat	G	7	5	4	4	7	3	0	5
Anacamptis_papilionacea	1990	Eurimedit	G	8	8	5	3	6	4	0	6
Anacamptis_pyramidalis	1990	Eurimedit	G	8	7	5	3	9	2	0	4
Anacyclus_radiatus_subsp_radiatus	1990	Stenomedit	T	8	9	4	4	5	2	0	7
Anemone_hortensis_subsp_hortensis	1990	Eurimedit	G	8	8	5	4	4	3	0	3
Anisantha_diandra	1990	Eurimedit	T	8	8	5	3	5	4	0	6

Anisantha_madritensis	1990	Eurimedit	T	8	7	5	3	X	1	0	6
Anisantha_rigida	1990	Cosmopol	T	8	8	5	4	6	5	0	6
Anisantha_rubens	1990	Stenomedit	T	8	11	5	2	X	2	0	6
Anthemis_arvensis_subsp_arvensis	1990	Stenomedit	T	7	6	4	4	3	6	0	6
Anthemis_maritima_subsp_maritima	1990	Others	H	11	9	4	1	X	1	0	3
Anthoxanthum_odoratum	1990	Eurasiat	H	X	X	5	X	5	3	0	4
Apium_graveolens	1990	Eurasiat	H	7	7	5	7	5	7	0	7
Arabis_sagittata	1990	Eurasiat	H	7	6	6	4	8	3	0	3
Arbutus_unedo	1990	Stenomedit	P	11	9	4	3	4	2	0	2
Arenaria_leptoclados_subsp_leptoclados	1990	Eurasiat	T	9	9	5	2	3	1	0	6
Arisarum_vulgare_subsp_vulgare	1990	Stenomedit	G	6	8	4	4	4	4	0	3
Arum_italicum_subsp_italicum	1990	Stenomedit	G	6	8	4	4	5	5	0	3
Arundo_plinii	1990	Stenomedit	G	11	8	4	4	4	2	0	4
Asparagus_acutifolius	1990	Stenomedit	G	6	9	4	2	5	5	0	2
Asparagus_officinalis_subsp_officinalis	1990	Eurimedit	G	8	8	5	5	5	5	0	7
Asphodelus_ramosus_subsp_ramosus	1990	Stenomedit	G	11	9	4	2	3	5	0	4
Asplenium_ceterach_subsp_bivalens	1990	Eurasiat	H	9	7	5	2	7	3	0	2
Asplenium_onopteris_	1990	Cosmopol	H	3	9	4	3	5	3	0	1
Asplenium_trichomanes_subsp_quadrivalens	1990	Cosmopol	H	5	X	5	5	X	4	0	2
Atriplex_halimus	1990	Stenomedit	P	11	10	4	1	6	2	3	4
Atriplex_patula	1990	Circumbor	T	6	5	X	5	7	X	0	7
Atriplex_patula_var_angustifolia	1990	Circumbor	T	6	5	X	5	7	X	0	7
Atriplex_prostrata	1990	Circumbor	T	9	X	X	6	X	9	0	7
Atriplex_rosea	1990	Eurimedit	T	9	9	7	2	6	1	1	
Avena_barbata_	1990	Eurimedit	T	8	8	5	3	7	2	0	6
Ballota_nigra_subsp_meridionalis	1990	Eurimedit	H	8	6	5	5	X	8	0	7
Barbarea_vulgaris	1990	Cosmopol	H	8	X	5	7	X	6	0	6
Bellardia_viscosa	1990	Eurimedit	T	8	8	3	3	3	3	0	6
Bellevalia_romana	1990	Eurimedit	G	8	7	5	3	6	4	0	6
Bellis_perennis	1990	Eurasiat	H	9	5	4	X	X	5	0	7
Bellis_sylvestris	1990	Stenomedit	H	5	8	4	3	3	3	0	3
Beta_vulgaris__subsp_vulgaris	1990	Eurimedit	H	11	7	5	6	6	5	1	6
Betonica_officinalis	1990	Eurasiat	H	6	5	4	6	4	3	0	2
Blackstonia_perfoliata_subsp_perfoliata	1990	Eurimedit	T	8	7	5	X	9	4	0	4
Bolboschoenus_maritimus	1990	Cosmopol	G	8	X	4	1	8	5	2	5
Borago_officinalis	1990	Eurimedit	T	7	8	5	3	5	5	0	6
Bothriochloa_ischaemum	1990	Cosmopol	H	9	7	5	3	8	3	0	5
Brachypodium_phoenicoides	1990	Stenomedit	G	8	8	4	3	8	4	0	4
Brachypodium_sylvaticum_subsp_sylvaticum	1990	Eurasiat	H	4	5	5	5	6	6	0	2
Briza_maxima	1990	Cosmopol	T	8	10	5	2	4	1	0	5
Briza_minor	1990	Cosmopol	T	8	9	5	2	4	1	0	6
Bromus_hordeaceus_subsp_hordeaceus	1990	Cosmopol	T	7	6	5	X	X	X	0	6
Bupleurum_tenuissimum	1990	Eurimedit	T	11	8	5	4	7	2	1	4
Cakile_maritima_subsp_maritima	1990	Eurimedit	T	9	8	2	6	X	8	2	3
Calamagrostis_arenaria_subsp_arundinacea	1990	Eurimedit	G	12	6	5	4	7	5	2	2
Calendula_arvensis	1990	Eurimedit	T	7	8	5	3	8	5	0	6
Campanula_erinus	1990	Stenomedit	T	7	8	4	2	X	1	0	4
Campanula_rapunculus	1990	Eurasiat	H	7	7	5	4	6	4	0	6
Capsella_rubella	1990	Eurimedit	T	8	9	5	2	4	2	0	7
Cardamine_hirsuta	1990	Cosmopol	T	7	8	5	3	5	4	0	6
Carduus_nutans_subsp_nutans	1990	Atlant	H	8	X	5	3	8	6	0	6
Carduus_pycnocephalus_subsp_pycnocephalus	1990	Eurimedit	H	7	8	4	3	X	3	0	6
Carex_distachya	1990	Stenomedit	H	6	6	4	2	4	5	0	1
Carex_divisa	1990	Eurimedit	G	8	8	2	3	5	3	0	6
Carex_divulsa_	1990	Eurimedit	H	7	6	5	4	5	5	0	5
Carex_flacca_subsp_flacca	1990	Eurasiat	G	7	5	5	6	8	X	0	3
Carex_grioletii	1990	Stenomedit	G	4	5	6	3	6	5	0	0
Carex_hallerana	1990	Eurimedit	H	5	7	5	3	3	4	0	1
Carex_otrubae	1990	Eurimedit	H	9	5	5	9	X	5	0	7
Carex_spicata	1990	Eurasiat	H	7	6	5	4	5	5	0	7
Carex_sylvatica	1990	Eurasiat	H	2	5	3	5	7	5	0	2
Carlina_corymbosa	1990	Stenomedit	H	6	X	4	2	X	4	0	5
Carpinus_betulus	1990	Eurasiat	P	4	6	4	X	X	X	0	1
Carthamus_caeruleus	1990	Eurimedit	H	11	11	5	3	7	4	0	5
Catapodium_balearicum	1990	Eurimedit	T	11	10	3	1	X	1	2	4
Catapodium_rigidum	1990	Eurimedit	T	8	8	5	2	5	4	0	6

Centaurea_jacea_subsp_gaudinii	1990	Eurasiat	H	6	5	7	4	7	3	0	6
Centaurea_pullata_subsp_pullata	1990	Stenomedit	T	9	8	4	3	8	6	3	4
Centaurea_sphaerocephala_subsp_sphaerocephala	1990	Stenomedit	H	11	10	4	1	X	1	0	6
Centaurium_erythraea_subsp_erythraea	1990	Eurasiat	H	8	6	5	5	6	X	0	4
Cephalanthera_longifolia	1990	Eurasiat	G	4	5	5	3	8	3	0	1
Cerastium_glomeratum	1990	Eurimedit	T	7	X	5	5	5	5	0	7
Cerastium_ligusticum	1990	Stenomedit	T	11	9	4	2	3	1	0	6
Cerinthe_major_subsp_major	1990	Stenomedit	T	7	8	4	4	5	9	0	6
Chamaeiris_foetidissima	1990	Eurimedit	G	7	7	5	4	4	5	0	2
Chamaerops_humilis	1990	Stenomedit	NP	11	10	3	1	4	1	0	1
Chenopodium_album	1990	Cosmopol	T	7	7	5	4	5	7	0	7
Chenopodium_vulvaria	1990	Eurimedit	T	7	7	5	4	X	9	0	7
Chondrilla_juncea	1990	Eurasiat	H	8	7	5	3	8	X	0	6
Cichorium_intybus	1990	Eurasiat	H	9	6	5	3	8	5	0	6
Cirsium_vulgare_subsp_vulgare	1990	Eurasiat	H	8	5	5	5	X	8	0	6
Clematis_flammula	1990	Eurimedit	P	7	9	5	3	5	4	0	2
Clematis_vitalba	1990	Eurasiat	P	7	7	4	5	7	7	0	3
Clinopodium_menthifolium_subsp_ascendens	1990	Eurasiat	H	4	6	4	5	5	4	0	2
Clinopodium_nepeta_subsp_spruneri	1990	Others	H	5	7	5	3	9	3	0	6
Coleostephus_myconis	1990	Stenomedit	T	8	9	4	3	5	4	0	6
Convolvulus_arvensis	1990	Eurasiat	G	7	7	5	4	5	5	0	6
Convolvulus_sepium	1990	Eurasiat	H	8	6	5	6	7	9	0	7
Crataegus_monogyna	1990	Eurasiat	P	6	7	5	4	6	3	0	4
Crepis_leontodontoides	1990	Others	H	5	8	4	4	3	7	0	3
Crepis_sancta_subsp_sancta	1990	Eurimedit	T	11	9	6	2	X	2	0	6
Crepis_vesicaria	1990	Eurimedit	T	8	8	3	3	6	2	0	6
Crithmum_maritimum	1990	Eurimedit	Ch	11	8	2	1	X	1	3	3
Cuscuta_cesattiana	1990	Naturalised	T	8	7	5	X	X	X	0	6
Cyclamen_hederifolium	1990	Stenomedit	G	4	8	5	5	5	5	0	1
Cyclamen_repandum_subsp_repandum	1990	Stenomedit	G	4	9	5	3	X	5	0	1
Cymbalaria_muralis	1990	Eurimedit	H	7	7	5	2	5	3	0	5
Cynodon_dactylon	1990	Cosmopol	G	8	8	5	4	X	4	0	7
Cynosurus_cristatus	1990	Eurasiat	H	8	5	4	5	5	4	0	6
Cynosurus_echinatus	1990	Eurimedit	T	11	9	5	2	4	2	0	5
Cyperus_longus_	1990	Eurasiat	G	8	7	5	11	5	5	0	7
Dactylis_glomerata_subsp_glomerata	1990	Eurasiat	H	7	6	5	4	5	6	0	5
Dasypyrum_villosum	1990	Eurimedit	T	8	10	5	2	4	2	0	6
Daucus_carota_subsp_carota	1990	Eurasiat	H	8	6	5	4	5	4	0	6
Dianthus_armeria_subsp_armeria	1990	Eurasiat	H	8	6	5	3	3	2	0	4
Digitaria_sanguinalis	1990	Cosmopol	T	7	7	5	3	6	4	0	7
Dioscorea_communis	1990	Eurimedit	G	5	7	5	5	8	6	0	1
Diplotaxis_erucoides_subsp_erucoides	1990	Stenomedit	T	8	8	4	3	5	5	0	6
Diplotaxis_tenuifolia	1990	Atlant	H	8	7	5	4	6	5	0	6
Dittrichia_graveolens	1990	Eurimedit	T	11	8	6	3	7	7	1	6
Dittrichia_viscosa_subsp_viscosa	1990	Eurimedit	H	11	8	5	3	7	9	0	6
Ecballium_elaterium	1990	Eurimedit	G	7	8	5	3	5	3	0	6
Echium_italicum_subsp_italicum	1990	Eurimedit	H	11	8	5	3	3	4	0	6
Echium_plantagineum	1990	Eurimedit	T	11	8	5	3	5	5	0	6
Eleocharis_palustris_subsp_palustris	1990	Cosmopol	G	8	6	5	1	3	3	0	6
Elymus_repens_subsp_repens	1990	Circumbor	G	7	X	7	5	X	8	0	6
Equisetum_ramosissimum	1990	Circumbor	G	7	7	6	3	7	1	0	6
Erica_arborea	1990	Stenomedit	P	6	8	4	3	2	1	0	3
Erigeron_bonariensis	1990	Naturalised	T	8	8	5	3	X	7	0	7
Erigeron_canadensis	1990	Naturalised	T	8	6	5	5	X	7	0	7
Erigeron_sumatrensis	1990	Naturalised	T	8	8	5	3	X	7	0	7
Erodium_acaule	1990	Others	H	11	8	3	3	3	3	0	6
Erodium_cicutarium	1990	Cosmopol	H	8	7	5	3	5	3	0	6
Erodium_malacoides_subsp_malacoides	1990	Stenomedit	T	11	9	4	2	5	2	0	6
Erodium_moschatum	1990	Eurimedit	T	11	9	5	2	5	2	0	7
Ervum_gracile	1990	Eurimedit	T	7	8	5	4	4	4	0	5
Eryngium_campestre	1990	Eurimedit	H	9	7	5	3	8	3	0	4
Euonymus_europaeus	1990	Eurasiat	P	6	5	5	5	8	5	0	2
Euphorbia_amygdaloides	1990	Eurasiat	Ch	4	5	4	5	7	6	0	2
Euphorbia_cuneifolia	1990	Stenomedit	T	7	7	4	6	7	4	0	5
Euphorbia_helioscopia_subsp_helioscopia	1990	Cosmopol	T	9	7	5	3	5	6	0	6
Euphorbia_peplus	1990	Circumbor	T	6	7	4	4	5	7	0	6

Euphorbia_prostrata	1990	Naturalised	T	7	8	5	2	5	4	0	7
Festuca_danthonii_subsp_danthonii	1990	Eurimedit	T	8	9	5	2	4	2	0	6
Festuca_ligustica	1990	Stenomedit	T	8	9	4	2	4	2	0	6
Festuca_myuros	1990	Cosmopol	T	8	9	5	2	6	2	0	6
Ficaria_verna_subsp_verna	1990	Eurasiat	G	4	5	5	6	7	7	0	3
Ficus_carica	1990	Eurimedit	P	7	8	6	X	5	X	0	3
Filago_germanica	1990	Eurasiat	T	8	7	5	3	4	2	0	5
Foeniculum_vulgare_subsp_piperitum	1990	Eurimedit	H	9	8	5	3	7	7	0	6
Fraxinus_angustifolia_subsp_oxycarpa	1990	Eurasiat	P	4	8	6	7	7	8	0	2
Fraxinus_ornus_subsp_ornus	1990	Eurasiat	P	5	8	6	3	8	3	0	3
Fumaria_capreolata_subsp_capreolata	1990	Eurimedit	T	7	9	5	3	5	3	0	5
Fumaria_officinalis	1990	Eurasiat	T	7	7	5	4	5	6	0	6
Galactites_tomentosus	1990	Stenomedit	H	8	8	4	3	X	7	0	6
Galatella_linosyris_subsp_linosyris	1990	Eurasiat	H	8	7	5	3	8	2	0	4
Galega_officinalis	1990	Eurasiat	H	7	8	7	6	5	6	0	6
Galium_aparine	1990	Eurasiat	T	6	X	5	4	5	5	0	4
Galium_palustre_subsp_elongatum	1990	Eurimedit	H	7	5	5	8	5	3	0	7
Gastridium_ventricosum	1990	Stenomedit	T	8	9	4	2	4	2	0	5
Gaudinia_fragilis	1990	Eurimedit	T	8	8	5	3	5	3	0	6
Geranium_columbinum	1990	Eurasiat	T	7	9	6	2	5	2	0	4
Geranium_dissectum	1990	Eurasiat	T	7	8	5	2	5	2	0	6
Geranium_molle	1990	Eurasiat	T	7	6	5	3	5	4	0	6
Geranium_purpureum	1990	Cosmopol	T	4	6	5	4	5	5	0	3
Geranium_rotundifolium	1990	Eurasiat	T	7	8	5	3	6	3	0	6
Glaucium_flavum	1990	Eurimedit	H	11	9	5	1	4	1	1	3
Hedera_helix_subsp_helix	1990	Eurimedit	P	4	5	4	5	X	X	0	1
Hedypnois_rhagadioloides	1990	Stenomedit	T	9	10	4	2	2	1	0	5
Heliotropium_europaeum	1990	Eurimedit	T	11	8	5	3	7	2	1	7
Helminthotheca_echioides	1990	Eurimedit	T	11	8	5	2	X	2	0	6
Helosciadium_nodiflorum_subsp_nodiflorum	1990	Eurimedit	H	7	8	5	10	X	6	0	8
Herniaria_hirsuta	1990	Eurasiat	T	9	6	5	4	2	2	0	6
Holcus_lanatus_subsp_lanatus	1990	Circumbor	H	7	5	4	6	X	4	0	6
Hordeum_bulbosum	1990	Cosmopol	H	8	10	5	4	5	4	0	6
Hordeum_murinum_subsp_leporinum	1990	Eurimedit	T	9	9	5	3	5	3	0	7
Hydrocotile_ranunculoides	1990	Cosmopol	G	9	8	X	9	4	3	0	
Hymenocarpos_circinnatus	1990	Stenomedit	H	11	9	4	2	2	2	0	5
Hyoseris_radiata	1990	Stenomedit	H	11	8	4	2	7	1	0	3
Hypericum_australe	1990	Stenomedit	H	7	8	4	7	6	4	0	4
Hypericum_perforatum_subsp_veronense	1990	Eurasiat	H	7	8	6	X	X	X	0	5
Hypericum_tetrapterum	1990	Eurasiat	H	7	7	6	4	4	4	0	6
Hypochoeris_achyrophorus	1990	Stenomedit	T	11	9	4	2	X	2	0	5
Hypochoeris_radicata	1990	Eurasiat	H	9	8	4	2	X	1	0	6
Isoetes_duriei	1990	Stenomedit	G	7	9	4	10	1	1	0	8
Isoetes_histrix	1990	Stenomedit	G	7	10	4	10	1	1	0	7
Jacobaea_erratica	1990	Eurasiat	H	7	6	4	4	7	4	0	6
Juncus_articulatus_subsp_articulatus	1990	Circumbor	G	8	7	4	8	6	5	0	6
Juncus_bufonius	1990	Cosmopol	T	4	7	5	6	4	1	0	7
Juncus_capitatus	1990	Eurimedit	T	8	10	2	8	4	1	1	7
Juncus_conglomeratus	1990	Circumbor	H	7	7	4	8	6	5	0	6
Juncus_effusus_subsp_effusus	1990	Cosmopol	H	7	7	5	9	6	5	0	6
Juncus_gerardi_subsp_gerardi	1990	Circumbor	G	8	6	4	5	7	5	2	4
Juncus_heterophyllus	1990	Atlant	I	7	7	3	10	4	3	0	3
Juncus_hybridus	1990	Eurimedit	T	8	8	3	8	6	3	0	7
Juncus_inflexus_subsp_inflexus	1990	Stenomedit	H	6	8	3	9	6	5	0	2
Juncus_subnodulosus	1990	Eurasiat	G	8	6	4	9	6	5	0	6
Kickxia_commutata_subsp_commutata	1990	Stenomedit	H	8	7	4	4	5	4	0	6
Kickxia_elatine_subsp_elatine	1990	Eurimedit	T	8	7	5	4	5	4	0	6
Knautia_integrifolia_subsp_integrifolia	1990	Eurimedit	T	7	8	5	3	3	2	0	6
Lagurus_ovatus_subsp_ovatus	1990	Eurimedit	T	8	9	5	3	X	2	1	5
Lamium_amplexicaule	1990	Eurasiat	T	7	7	5	4	5	7	0	7
Lamium_purpureum	1990	Eurasiat	T	7	7	5	4	5	5	0	7
Lathyrus_annuus	1990	Eurimedit	T	8	8	5	3	5	2	0	6
Lathyrus_aphaca_subsp_aphaca	1990	Eurimedit	T	6	6	5	3	X	X	0	3
Lathyrus_ochrus	1990	Stenomedit	T	7	8	4	2	5	2	0	6
Lathyrus_sphaericus	1990	Eurimedit	T	11	9	5	2	5	2	0	4
Laurus_nobilis	1990	Stenomedit	P	2	7	4	8	4	6	0	4

Lepidium_graminifolium_subsp_graminifolium	1990	Eurimedit	H	8	8	5	3	X	3	0	7
Ligustrum_vulgare	1990	Eurasiat	NP	7	6	4	X	8	X	0	3
Limbarda_crithmoides	1990	Stenomedit	Ch	11	8	4	7	9	5	3	5
Linum_corymbulosum	1990	Stenomedit	T	11	9	4	2	5	2	0	3
Linum_strictum	1990	Stenomedit	T	11	9	4	2	5	2	0	4
Linum_usitatissimum_subsp_angustifolium	1990	Eurimedit	H	7	7	5	3	7	2	0	6
Lipandra_polysperma	1990	Circumbor	T	6	5	5	6	4	8	0	7
Lolium_arundinaceum_subsp_arundinaceum	1990	Eurasiat	H	9	8	5	6	8	6	0	6
Lolium_multiflorum	1990	Eurimedit	T	7	7	5	4	X	6	0	6
Lolium_perenne	1990	Circumbor	H	8	5	4	5	X	7	0	6
Loncomelos_narbonense	1990	Eurimedit	G	8	7	5	4	6	4	0	5
Lonicera_caprifolium	1990	Eurasiat	P	6	5	6	6	X	5	0	1
Lotus_angustissimus	1990	Eurimedit	T	11	8	5	7	7	4	0	6
Lotus_corniculatus	1990	Eurasiat	H	7	X	5	4	7	2	0	4
Lotus_ornithopodioides	1990	Stenomedit	T	11	9	4	2	1	1	0	5
Lotus_tenuis	1990	Eurasiat	H	9	7	5	6	7	7	0	6
Lupinus_angustifolius	1990	Stenomedit	T	11	9	4	2	2	2	0	6
Luzula_forsteri	1990	Eurimedit	H	4	7	5	4	4	5	0	2
Lychnis_flos-cuculi	1990	Circumbor	H	7	5	4	6	X	6	0	3
Lysimachia_arvensis	1990	Eurimedit	T	6	6	5	5	X	6	0	6
Lysimachia_nardii	1990	Stenomedit	T	7	8	4	5	2	1	0	6
Lythrum_junceum	1990	Stenomedit	H	7	8	4	7	3	4	0	7
Lythrum_salicaria	1990	Cosmopol	H	7	5	5	8	7	X	0	7
Lythrum_tribracteatum	1990	Eurimedit	T	7	8	5	7	3	4	0	5
Malope_malacoides	1990	Stenomedit	T	9	9	5	2	5	4	0	6
Malva_punctata	1990	Stenomedit	T	8	9	4	2	5	4	0	6
Malva_sylvestris	1990	Circumbor	H	8	6	4	4	X	8	0	3
Matthiola_incana_subsp_incana	1990	Stenomedit	Ch	12	10	4	2	7	1	2	3
Medicago_arabica	1990	Eurimedit	T	9	9	5	2	X	2	0	7
Medicago_lupulina	1990	Eurasiat	T	7	5	X	4	8	7	0	6
Medicago_murex	1990	Stenomedit	T	11	9	4	2	X	2	0	6
Medicago_orbicularis	1990	Eurimedit	T	7	8	5	3	4	4	0	6
Medicago_polymorpha	1990	Eurimedit	T	9	9	5	2	X	2	0	6
Medicago_rigidula	1990	Eurimedit	T	11	8	5	1	X	1	2	5
Medicago_truncatula	1990	Stenomedit	T	11	8	4	1	X	1	2	5
Melica_minuta_subsp_latifolia	1990	Stenomedit	H	8	10	4	2	5	2	0	2
Melica_uniflora	1990	Eurasiat	H	3	5	5	5	6	X	0	1
Melissa_officinalis_subsp_altissima	1990	Eurimedit	H	6	7	5	4	6	4	0	6
Mentha_aquatica_subsp_aquatica	1990	Eurasiat	H	7	5	5	9	7	4	0	7
Mentha_pulegium_subsp_pulegium	1990	Eurimedit	H	8	7	5	7	X	2	0	6
Mentha_suaveolens_subsp_suaveolens	1990	Eurimedit	H	7	8	5	8	7	6	0	6
Mercurialis_annua	1990	Eurasiat	T	7	7	5	4	7	8	0	6
Muscari_comosum	1990	Eurimedit	G	7	8	5	3	7	0	0	4
Myosotis_ramosissima_subsp_ramosissima	1990	Eurasiat	T	9	8	5	2	4	3	0	6
Myrtus_communis	1990	Stenomedit	P	8	9	4	3	5	2	0	2
Narcissus_tazetta_subsp_tazetta	1990	Stenomedit	G	8	8	4	4	5	4	0	7
Nasturtium_officinale	1990	Cosmopol	H	7	4	5	11	7	7	0	7
Nigella_damascena	1990	Eurimedit	T	8	9	5	3	4	2	0	5
Oenanthe_fistulosa	1990	Eurasiat	H	7	7	5	9	7	5	0	6
Oenanthe_pimpinelloides	1990	Eurimedit	H	5	7	3	4	5	4	0	3
Oloptum_thomasii	1990	Eurasiat	H	5	7	4	4	7	5	0	5
Ononis_spinosa_subsp_antiquorum	1990	Eurimedit	T	8	6	5	X	X	3	0	5
Ophrys_apifera	1990	Eurimedit	G	7	6	5	4	9	2	0	4
Ophrys_bombyliflora	1990	Stenomedit	G	8	9	4	3	6	3	0	
Ophrys_sphegodes_subsp_sphegodes	1990	Eurimedit	G	8	8	5	4	9	3	0	4
Ophrys_tenthredinifera	1990	Stenomedit	G	8	9	4	3	6	3	0	0
Ophrys_x_sommieri	1990	Stenomedit	G								
Ornithopus_compressus	1990	Eurimedit	T	11	9	5	2	2	1	0	6
Orobanche_hederae	1990	Eurimedit	T	6	7	5	4	5	5	0	1
Oxalis_corniculata	1990	Eurimedit	H	7	7	0	4	X	6	0	7
Oxalis_dillenii	1990	Naturalised	H	7	7	5	5	5	7	0	7
Oxybasis_urbica	1990	Circumbor	T	8	7	4	6	7	6	0	8
Paliurus_spina-christi	1990	Eurasiat	P	7	8	6	3	7	3	0	4
Pallenis_spinosa_subsp_spinosa	1990	Eurimedit	T	11	9	5	4	X	7	0	5
Pancratium_maritimum	1990	Stenomedit	G	11	10	3	1	X	1	0	2
Papaver_rhoeas_subsp_rhoeas	1990	Others	T	6	6	5	5	7	X	0	6

Parapholis_incurva	1990	Stenomedit	T	11	7	4	5	7	2	3	5
Parietaria_judaica	1990	Eurimedit	H	7	8	5	3	X	6	0	5
Paspalum_distichum	1990	Cosmopol	G	X	8	X	10	8	8	0	7
Petrorhagia_dubia	1990	Stenomedit	T	11	8	5	2	8	2	0	6
Phalaris_brachystachys	1990	Stenomedit	T	7	7	X	5	6	4	0	6
Phalaris_truncata	1990	Eurimedit	H	7	7	X	4	6	4	0	6
Phillyrea_angustifolia	1990	Stenomedit	P	11	10	4	1	X	2	0	2
Phillyrea_latifolia	1990	Stenomedit	P	5	8	4	4	X	5	0	4
Phleum_nodosum	1990	Eurimedit	H	7	6	5	4	X	4	0	6
Phleum_pratense_subsp_pratense	1990	Circumbor	H	7	6	5	5	6	6	0	6
Phleum_subulatum_subsp_subulatum	1990	Stenomedit	T	8	3	4	5	8	7	0	4
Phragmites_australis	1990	Cosmopol	He	7	5	X	10	7	5	1	6
Picris_hieracioides	1990	Circumbor	H	8	X	5	4	8	4	0	6
Pinus_halepensis	1990	Stenomedit	P	11	10	4	2	0	2	0	1
Pinus_pinea	1990	Eurimedit	P	11	8	5	2	4	3	0	2
Pistacia_lentiscus	1990	Stenomedit	P	11	10	5	2	X	2	0	2
Pittosporum_tobira	1990	Naturalised	P	10	9	5	2	X	2	0	0
Plantago_coronopus	1990	Eurimedit	T	8	7	5	7	7	4	0	6
Plantago_crassifolia	1990	Stenomedit	H	11	8	4	3	9	4	1	3
Plantago_lanceolata	1990	Eurasiat	H	6	7	5	X	X	X	0	6
Plantago_macrorhiza	1990	Stenomedit	H	11	10	4	3	9	2	1	4
Plantago_major	1990	Eurasiat	H	8	X	X	5	X	7	0	7
Plantago_weldenii	1990	Eurimedit	T	8	7	5	7	7	4	0	4
Poa_annua	1990	Cosmopol	T	7	X	5	6	X	8	0	8
Poa_bulbosa	1990	Eurasiat	H	8	8	7	2	4	1	0	6
Poa_trivialis	1990	Eurasiat	H	6	X	5	7	X	7	0	6
Polycarpon_tetraphyllum_subsp_tetraphyllum	1990	Eurimedit	T	7	7	5	4	5	6	0	8
Polygonum_arenastrum	1990	Cosmopol	T	7	8	5	3	6	1	0	7
Polygonum_aviculare_subsp_aviculare	1990	Cosmopol	T	7	7	5	3	6	1	0	7
Polygonum_romanum	1990	Others	Ch	11	10	4	2	2	2	0	7
Polypodium_cambricum	1990	Eurimedit	H	3	8	5	3	X	5	0	2
Portulaca_oleracea	1990	Cosmopol	T	7	8	5	4	7	7	0	7
Potamogeton_nodosus	1990	Cosmopol	I	6	6	5	12	7	6	0	9
Potentilla_reptans	1990	Eurasiat	H	6	6	5	6	7	5	0	6
Poterium_sanguisorba_subsp_balearicum	1990	Eurasiat	H	7	6	5	3	8	2	0	4
Prospero_autumnale	1990	Eurimedit	G	8	8	4	2	6	3	0	5
Prunella_vulgaris_subsp_vulgaris	1990	Circumbor	H	7	6	4	6	4	X	0	3
Prunus_spinosa_subsp_spinosa	1990	Eurasiat	P	7	5	5	X	X	X	0	4
Pteridium_aquilinum_subsp_aquilinum	1990	Cosmopol	G	6	5	4	6	3	3	0	3
Pulicaria_dysenterica	1990	Eurimedit	H	8	6	5	7	X	5	0	7
Pyracantha_coccinea	1990	Stenomedit	P	5	8	4	3	5	3	0	6
Pyrus_communis_subsp_pyraster	1990	Eurasiat	P	6	5	5	6	7	7	0	5
Quercus_cerris	1990	Eurimedit	P	6	8	5	4	4	4	0	2
Quercus_ilex	1990	Stenomedit	P	2	9	4	3	X	X	0	2
Quercus_pubescens_subsp_pubescens	1990	Eurasiat	P	7	8	6	3	7	4	0	2
Quercus_robur	1990	Eurasiat	P	7	6	6	6	5	6	0	2
Ranunculus_bulbosus	1990	Eurasiat	H	8	6	5	3	7	3	0	6
Ranunculus_ophioglossifolius	1990	Eurimedit	T	7	7	5	8	6	6	0	7
Ranunculus_sardous	1990	Eurimedit	T	8	7	5	8	X	7	0	7
Ranunculus_velutinus	1990	Eurimedit	H	6	8	5	5	6	5	0	6
Raphanus_raphanistrum_subsp_raphanistrum	1990	Eurimedit	T	11	5	5	X	4	5	0	6
Reichardia_picroides	1990	Stenomedit	H	7	8	4	3	6	2	0	4
Rhamnus_alaternus_subsp_alaternus	1990	Stenomedit	P	4	9	5	2	4	4	0	3
Robinia_pseudoacacia	1990	Naturalised	P	5	7	5	4	X	8	0	6
Romulea_bulbocodium	1990	Stenomedit	G	8	9	4	3	4	3	0	5
Romulea_rollii	1990	Stenomedit	G	9	9	3	3	5	2	0	4
Rosa_sempervirens	1990	Stenomedit	NP	6	8	4	3	4	6	0	2
Rostraria_cristata	1990	Cosmopol	T	7	5	5	6	8	2	0	6
Rostraria_pubescens	1990	Stenomedit	T	7	8	4	5	8	2	0	4
Rubia_peregrina	1990	Stenomedit	P	5	9	4	4	5	3	0	1
Rubus_caesius	1990	Eurasiat	NP	7	5	5	7	7	9	0	3
Rubus_ulmifolius	1990	Eurimedit	NP	5	8	5	4	5	8	0	3
Rumex_acetosella_subsp_pyrenaicus	1990	Cosmopol	H	8	5	5	5	1	2	0	6
Rumex_bucephalophorus	1990	Eurimedit	T	8	12	5	2	2	1	0	6
Rumex_conglomeratus	1990	Eurasiat	H	8	7	5	7	X	8	0	6
Rumex_crispus	1990	Cosmopol	H	7	5	5	6	X	5	0	7

Rumex_obtusifolius	1990	Eurasiat	H	7	5	6	3	X	9	0	6
Rumex_pulcher_subsp_pulcher	1990	Eurimedit	H	8	8	5	2	6	9	0	7
Rumex_sanguineus	1990	Eurasiat	H	4	5	4	8	7	7	0	4
Ruscus_aculeatus	1990	Eurimedit	G	4	8	5	4	5	5	0	1
Sabulina_tenuifolia_subsp_tenuifolia	1990	Eurasiat	T	7	7	5	3	6	2	0	6
Sagina_apetala_subsp_apetala	1990	Eurimedit	T	8	7	5	6	4	5	0	8
Sagina_maritima	1990	Stenomedit	T	8	X	X	7	X	0	0	6
Salix_alba	1990	Eurasiat	P	5	6	6	7	8	7	0	7
Salsola_kali	1990	Eurasiat	T	9	7	8	8	7	8	2	3
Salvia_clandestina	1990	Eurasiat	H	8	8	6	3	5	7	0	6
Salvia_verbenaca	1990	Stenomedit	H	8	8	4	3	5	7	0	6
Sambucus_nigra	1990	Eurasiat	P	7	5	4	5	X	9	0	5
Schoenoplectus_lacustris	1990	Cosmopol	G	8	5	5	11	7	5	0	
Scirpoides_holoschoenus	1990	Eurimedit	G	8	8	5	8	5	4	0	4
Scorpiurus_muricatus	1990	Eurimedit	T	7	8	5	2	X	2	0	4
Scorzoneroides_cichoriacea	1990	Others	H	9	6	5	3	7	2	0	4
Sedum_cepaea	1990	Eurimedit	T	2	8	2	4	2	4	0	3
Senecio_vulgaris	1990	Eurimedit	T	7	X	X	5	X	8	0	7
Serapias_lingua	1990	Stenomedit	G	11	8	4	3	4	2	0	6
Serapias_parviflora	1990	Stenomedit	G	11	10	4	2	4	2	0	5
Serapias_vomeracea	1990	Eurimedit	G	11	8	5	3	4	2	0	4
Setaria_verticillata	1990	Cosmopol	T	7	8	5	4	X	8	0	7
Sherardia_arvensis	1990	Eurimedit	T	8	6	5	5	8	5	0	6
Silene_canescens	1990	Stenomedit	T	11	9	3	1	X	1	2	5
Silene_gallica	1990	Eurimedit	T	8	9	5	3	2	1	0	6
Silene_latifolia	1990	Stenomedit	H	6	9	4	3	4	2	0	3
Silene_vulgaris_subsp_tenoreana	1990	Eurasiat	H	8	X	X	4	7	2	0	5
Silybum_marianum	1990	Eurimedit	H	11	10	6	3	5	7	0	6
Sixalix_atropurpurea	1990	Stenomedit	H	6	8	4	3	X	2	0	5
Smilax_aspera	1990	Cosmopol	NP	6	10	4	2	5	3	0	1
Solanum_nigrum	1990	Cosmopol	T	7	6	5	3	5	7	0	7
Solanum_villosum	1990	Eurimedit	T	7	6	5	3	5	7	0	7
Sonchus_asper_subsp_asper	1990	Eurasiat	T	7	5	X	4	7	7	0	6
Sonchus_bulbosus_subsp_bulbosus	1990	Stenomedit	G	7	8	4	3	5	3	0	3
Sonchus_oleraceus	1990	Eurasiat	T	7	5	X	4	8	8	0	6
Sonchus_tenerrimus	1990	Stenomedit	T	7	8	4	2	5	4	0	6
Sorbus_domestica	1990	Eurimedit	P	4	7	5	3	8	3	0	1
Sorbus_torminalis	1990	Eurasiat	P	4	6	5	4	7	4	0	1
Sorghum_halepense	1990	Cosmopol	G	8	8	X	7	8	8	0	4
Spartium_junceum	1990	Eurimedit	P	7	7	5	4	7	2	0	4
Spergularia_marina	1990	Cosmopol	T	7	7	5	6	8	0	3	5
Spergularia_rubra	1990	Cosmopol	T	7	7	X	6	3	4	0	7
Spiranthes_spiralis	1990	Eurasiat	G	8	6	4	3	X	2	0	
Sporobolus_virginicus	1990	Cosmopol	G	11	11	4	1	0	1	3	3
Stachys_germanica_subsp_salviifolia	1990	Stenomedit	H	7	8	6	3	7	9	0	5
Stachys_ocymastrum	1990	Stenomedit	T	11	9	4	2	7	2	0	6
Stachys_romana	1990	Stenomedit	T	11	9	4	2	6	1	0	5
Stachys_sylvatica	1990	Circumbor	H	4	X	4	7	7	7	0	3
Stellaria_media	1990	Cosmopol	T	6	X	X	4	7	8	0	6
Stellaria_neglecta	1990	Eurasiat	T	6	7	5	4	5	8	0	4
Stellaria_pallida	1990	Eurasiat	T	8	8	5	3	5	4	0	7
Symphyotrichum_squamatum	1990	Naturalised	T	8	8	5	4	7	7	0	7
Thinopyrum_acutum	1990	Eurimedit	G	11	7	5	5	7	7	2	6
Thinopyrum_junceum	1990	Eurimedit	G	11	6	5	7	7	7	2	2
Thymelaea_passerina	1990	Eurimedit	T	8	7	5	3	7	2	0	5
Tordylium_apulum	1990	Stenomedit	T	11	9	4	2	X	2	0	6
Torilis_nodosa	1990	Eurimedit	T	7	8	6	4	7	6	0	6
Tribulus_terrestris	1990	Cosmopol	T	8	8	6	2	5	3	0	7
Trifolium_angustifolium_subsp_angustifolium	1990	Eurimedit	T	11	9	5	2	3	2	0	5
Trifolium_bocconei	1990	Stenomedit	T	7	7	4	4	7	2	0	6
Trifolium_campestre	1990	Eurasiat	T	8	5	5	4	X	3	0	6
Trifolium_fragiferum_subsp_fragiferum	1990	Eurasiat	H	8	6	5	7	8	7	0	6
Trifolium_glomeratum	1990	Eurimedit	T	7	7	5	3	2	2	0	6
Trifolium_ligusticum	1990	Stenomedit	T	8	9	4	2	2	1	0	6
Trifolium_nigrescens_subsp_nigrescens	1990	Eurimedit	T	8	6	5	5	5	6	0	6
Trifolium_pallidum	1990	Eurimedit	T	7	8	5	4	2	2	0	6

Trifolium_pratense_subsp_pratense	1990	Circumbor	H	7	X	4	X	X	X	0	6
Trifolium_repens	1990	Eurasiat	H	8	X	X	X	X	7	0	7
Trifolium_scabrum	1990	Eurimedit	T	11	8	5	2	9	1	0	5
Trifolium_stellatum	1990	Eurimedit	T	11	9	5	2	X	2	0	4
Trifolium_subterraneum	1990	Eurimedit	T	11	9	5	2	2	2	0	6
Triglochin_laxiflora	1990	Stenomedit	G	8	8	4	8	7	7	0	0
Triticum_vagans	1990	Stenomedit	T	11	10	X	5	5	4	0	4
Tuberaria_guttata	1990	Eurimedit	T	11	9	5	2	1	1	0	6
Typha_angustifolia	1990	Circumbor	G	8	7	5	10	X	7	0	6
Typha_latifolia	1990	Cosmopol	G	8	6	5	10	X	8	0	6
Ulmus_minor	1990	Eurasiat	P	5	7	5	X	8	X	0	4
Urospermum_dalechampii	1990	Eurimedit	H	8	8	5	3	X	3	0	4
Urtica_dioica	1990	Cosmopol	H	X	X	X	6	X	8	0	7
Urtica_membranacea	1990	Stenomedit	T	7	8	5	3	6	3	0	6
Valerianella_eriocarpa	1990	Stenomedit	T	11	9	4	2	5	1	0	6
Verbascum_blattaria	1990	Eurasiat	H	8	6	7	3	7	6	0	6
Verbascum_sinuatum	1990	Eurimedit	H	9	8	5	3	7	7	0	6
Verbena_officinalis	1990	Eurasiat	H	9	5	5	4	X	6	0	6
Veronica_arvensis	1990	Eurasiat	T	5	5	5	5	6	X	0	7
Veronica_beccabunga_subsp_beccabunga	1990	Eurasiat	H	7	X	5	10	7	6	0	7
Veronica_persica	1990	Naturalised	T	8	7	5	5	5	6	0	7
Veronica_serpyllifolia	1990	Eurasiat	H	X	X	5	3	5	X	0	3
Viburnum_tinus_subsp_tinus	1990	Stenomedit	P	5	9	4	4	5	3	0	2
Vicia_angustifolia	1990	Eurimedit	T	5	5	6	X	X	X	0	6
Vicia_benghalensis	1990	Stenomedit	T	11	9	4	2	5	2	0	7
Vicia_bithynica	1990	Eurimedit	T	7	7	5	3	5	5	0	5
Vicia_dasycarpa	1990	Eurimedit	T	7	6	5	4	4	5	0	6
Vicia_hybrida	1990	Eurimedit	T	7	8	5	3	5	5	0	6
Vicia_pseudocracca	1990	Eurimedit	T	7	6	5	4	4	5	0	5
Vinca_major_subsp_major	1990	Eurimedit	Ch	6	7	5	4	5	3	0	3
Viola_odorata	1990	Eurimedit	H	5	6	5	5	X	8	0	6
Viola_reichenbachiana	1990	Circumbor	H	4	5	4	5	7	6	0	2
Viola_suavis	1990	Eurasiat	H	5	8	6	5	4	4	0	2
Vitis_vinifera	1990	Cosmopol	P	6	8	5	6	8	6	0	2
Xanthium_italicum	1990	Eurimedit	T	8	8	5	5	X	1	0	6