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No negative impact of *Erigeron annuus* on native plant diversity: a case study from Northern Switzerland

Kein negativer Einfluss von *Erigeron annuus* auf die heimische Phytodiversität: eine Fallstudie aus der Nordschweiz

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Abstract

In Switzerland, the neophyte *Erigeron annuus* is considered to be harmful to the environment, particularly to native plant diversity and thus is listed as “invasive alien species” (IAS) in the normative sense. Since the evidence for this listing is limited and contradictory, we studied it empirically. We searched for sites in which the species occurs with high local cover values, irrespective of the vegetation type. We sampled clusters of four 1-m^2 plots in 10 different sites around Zurich, Northern Switzerland. Each cluster represented a local “invasion gradient” from no (or very low) to the maximum *Erigeron annuus* cover of the site, within the same plant community and all other factors being as similar as possible. We then applied (generalised) linear mixed-effect models to test whether plant diversity, mean ecological indicator values (temperature, light, moisture, reaction, nutrients) or CSR strategy types are influenced by the cover of *Erigeron annuus*. All response variables were calculated without *Erigeron annuus* (“resident community”) and diversity indices additionally without all neophytes (“native community”). Most of the sites belonged to grasslands of the *Arrhenatherion elatioris*, the *Erigeron annuus* cover ranged from 0% to 55% and the mean vascular plant species richness was 24.6. We found that the cover of *Erigeron annuus* did not influence native and resident species richness or Shannon evenness, nor native Shannon diversity significantly. Only on resident Shannon diversity it had a minimal positive effect. None of the tested mean ecological indicator values or CSR strategies was influenced by the cover of *Erigeron annuus*. Our results demonstrate that *Erigeron annuus* regularly invades relatively species rich grassland communities, but its effect on the resident vascular plant community in our study region remains negligible. This is consistent with our literature review according to which other studies with sound methodology either found no or even a positive effect of *Erigeron annuus* on native plant diversity. As our sample is limited in size and geographic scope, we recommend repeating such impact studies in other regions with similar methods to test for the generality of our results. Beyond *Erigeron annuus*, our results suggest that the determination of “invasive alien neophytes” should be based on solid scientific evidence to spend conservation money effectively on measures that improve the state of native biodiversity.

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Erweiterte deutsche Zusammenfassung am Ende des Artikels

1. Introduction

Increasing human traffic and trade across the globe leads to an accelerating number of species across all taxonomic groups that are transported to ranges where they are not native, and many of these then get established and spread (Seebens et al. 2017), the so-called alien species or neobiota (Kowarik 2010). Among the neobiota, the "invasive alien species" (IAS) form a subset, but two contrasting definitions of this term (Pyšek et al. 2020) have caused a lot of confusion in the literature (Colautti & MacIsaac 2004). While this term in a neutral natural scientific sense (and reflecting the etymology) simply refers to non-native species that successfully expand their range (Richardson et al. 2000, Blackburn et al. 2011), it is now often used for only those species among the former group that are known or believed to do harm to the environment or humans, thus giving "invasive" a normative connotation (IUCN 2000, FOEN 2022, Roy et al. 2023). Invasive alien species are generally considered as one of the main threats to biodiversity globally, just after land-use change, climate change and nitrogen deposition (Sala et al. 2000, World Resources Institute 2005, Rounsevell et al. 2018). While it is well-established that neozoa and neomycota (Blackburn et al. 2004, Kowarik 2010, IUCN 2025) have caused the extinction of numerous species worldwide, it is hard to find any such proof for neophytes (see IUCN 2025) – but nevertheless they are treated the same way. Switzerland for example is spending much effort and money on controlling what the authorities consider "invasive" alien plants (FOEN 2022). It has been estimated several years ago that Switzerland is spending more than 20 million Swiss Francs annually to reduce or eradicate "invasive" alien plants, with approximately half of the measures considered ineffective in reducing the neophytes (Bischoff 2012) – and no assessment available whether any of these measures benefitted native biodiversity.

Erigeron annuus (L.) Pers. is an *Asteraceae* species native to the United States and parts of Canada and now naturalised in large parts of Europe, Central and East Asia as well as Oceania (Wagenitz 1979, CABI 2025, GBIF 2025). It has been introduced to Central Europe as an ornamental plant and became regionally naturalised in the 18th century (Wagenitz 1979). In Europe, *E. annuus* is found in 1.3% of all grassland plots and thus is the second-most frequent grassland neophyte after *Onobrychis viciifolia* (Axmanová et al. 2021). *Erigeron annuus* is an annual to biennial, rarely perennial forb and typically 30–100 cm tall (Wagenitz 1979). According to its ecological indicator values (Landolt et al. 2010), it mainly grows in the colline belt with intermediate continentality in well-lit sites with fresh soils of intermediate pH (4.5–7.5). While *E. annuus* in Central Europe formerly was largely confined to a wide range of ruderal communities (Wagenitz 1979), more recently it is also spreading in grasslands, including nutrient-poor types (InfoFlora 2024).

While *E. annuus* is present and frequent throughout Europe (Axmanová et al. 2021, GBIF 2025), only three European countries consider it as an "invasive alien species" in the normative sense: Switzerland, Slovakia and Montenegro (CABI 2025). According to InfoFlora (2024) *E. annuus* is a "high risk for numerous native protected plant species" (our translation from "grosses Risiko für zahlreiche einheimische geschützte Pflanzenarten") in grassland communities, but neither this fact sheet, nor the linked references provide facts that would support this. Also, FOEN (2022) lists *E. annuus* as "known to be harmful to the environment", but without substantiating this with facts. Nevertheless, in Switzerland *E. annuus* has been listed in Appendix 2.2 of the "Freisetzungsverordnung" (Schweizerischer Bundesrat 2024), a legal act that prohibits planting and handling this species other than controlling it. It is also one of the neophyte species in Switzerland that is strongly combated by authorities, conservation NGOs, civilian servants and volunteers in several regions, including the canton of Zurich. However, there are only very few published studies that aimed at quantifying the impact of *E. annuus* on biodiversity. Künzi et al. (2015) in a regional study in the canton of Bern found that *E. annuus* cover had no effect on indices of native plant diversity. A comparative study in Hungary and Romania using paired plots found that only six out of 11 analysed neophytes had a negative impact on plant species richness, but not so *E. annuus* (Fenesi et al. 2023). Recently, Y. Liu et al. (2025) reported that in China plots with *E. annuus* had a lower species richness than those without. However, these results is questionable as (a) according to the methods description there was no pairing of plots and thus the richness difference could be due to other factors than *E. annuus* and (b) the reported richness values (4–7 in 4 m^2 with and without *E. annuus*) are unrealistically low for Palaearctic non-forest habitats (compare the values in the GrassPlot Diversity Explorer; https://edgg.org/databases/GrasslandDiversityExplore; see Biurrun et al. 2021). A few studies found allelopathic effects of *E. annuus* on crop plants, but they did not demonstrate that this translates into a loss of native plant diversity (Oh et al. 2002, J. Liu et al. 2025). By contrast, Dengler et al. (2024) demonstrated with a large systematic dataset of grassland plots across Switzerland that, after accounting for other environmental factors, *E. annuus* was even associated with increased native plant species richness (+8.5% in 10 m^2 plots). Durak et al. (2025) reported from flower strips in Polish vineyards that among the flowering plants there, *E. annuus* was among the most visited by a wide range of different insect groups that are important for pollination and pest control. In conclusion, there is a strong discrepancy between the assumption that *E. annuus* does severe harm to native (plant) diversity and the lack of evidence for this assumption.

Therefore, our short paper aims to contribute to the knowledge on the potential impact of *E. annuus* on native plant diversity in Switzerland based on field data. On the one hand, we were interested in biodiversity as such, measured with different indices both for all species (resident community, more relevant for ecological theory) and for only the native species (native community, more relevant for biodiversity conservation). On the other hand, we wanted to test whether community composition shows a systematic shift when *E. annuus* is invading a stand, which could happen even if overall diversity remains unaltered. While community shifts can be assessed in many ways, mean ecological indicator values (Diekmann 2003, Landolt et al. 2010) and CSR strategy types (Grime 1977, Landolt et al. 2010) are very widely used. For example, Widmer et al. (2025) used these methods to study changes in Swiss grasslands over 120 years and Reutimann et al. (2023) did this to compare the effect of different land uses in the same sites. Specifically, we collected small-scale plant community data along "invasion gradients" in Northern Switzerland, that is, groups of plots in the same habitat that only differed in the presence and cover of *E. annuus*. With this sampling approach we aimed to quantify: (1) whether the cover of *E. annuu*s influences diversity metrics of resident and native vascular plants (namely species richness, Shannon index and Shannon evenness) and (2) whether increasing dominance of *E. annuus* leads to systematic shifts in mean ecological indicator values and CSR strategy types.

2. Methods

2.1 Study sites

We conducted the study at ten sites in the Swiss Plateau, mostly in the canton of Zurich. One site was in the canton of Aargau and one in the canton of Schwyz (see Fig. 1; for detailed information, see Supplement E1).

We selected the sites based on distribution data of *Erigeron annuus* provided by InfoFlora (2025), the Kanton Zürich (2025) and on direct observations (our own or from municipal staff dealing with neophytes). We focused on sites that reached a high maximum cover of *E. annuus* and at the same time showed a gradient from high to low/zero *E. annuus*. The remaining conditions had to be as consistent as possible within a site (i.e. same habitat type). We did not restrict our sampling to specific habitat types but include those sites that met our conditions irrespective of habitat type. We only excluded sites that had already been mowed or in which *E. annuus* had already been weeded in 2025. The lowest plot was at 368 m a.s.l., the highest at 583 m a.s.l. (Supplement E1). The minimum distance between sites was 16 m, the maximum 45.5 km and the mean 19.9 km.

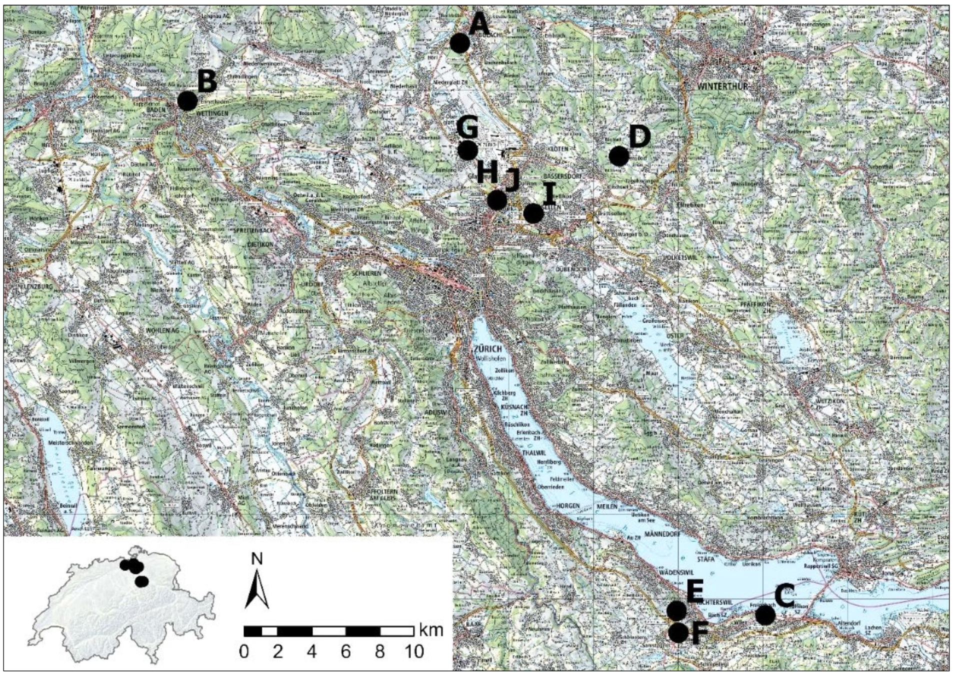

Fig. 1. Study sites in the cantons of Zurich, Aargau and Schwyz and their placement inside Switzerland. The scale bar is for the big map. Note that Site G and H are so close together that they are displayed as one dot. Map: ©swisstopo.

Abb. 1. Untersuchungsgebiete in den Kantonen Zürich, Aargau und Schwyz sowie deren Lage innerhalb der Schweiz. Der Massstabsbalken ist für die grosse Karte. Man beachte, dass die Untersuchungsgebiete G und H so nahe beieinander liegen, dass sie nicht als separate Punkte erkennbar sind. Kartengrundlage: ©swisstopo.

2.2 Sampling

At each site, like Künzi et al. (2015), we placed four square plots of 1 m × 1 m representing different cover values of *Erigeron annuus* but as close as possible to each other. Always one plot had (almost) no *E. annuus*, one had the highest possible cover at the site, and the two remaining ones were placed at different cover values between the extremes (Fig. 2). This approach minimizes potentially confounding influence from the variation in site conditions (and land use). The distances between plots within sites ranged from 1 m to 15 m, while the mean distances of the plots within a site varied only from 3.5 m to 9.7 m for the 10 sites (supplement E2).

Between the beginning of May and the beginning of June 2025, we collected the following data from each plot: presence and cover (%) of all vascular plant species present with the shoot present method (for the advantages of % cover over ordinal scales, particularly in case of biodiversity indices, see Dengler & Dembicz 2024 and Dembicz & Dengler 2025), *E. annuus* growth height, total vegetation cover as well as height and cover of the individual layers (tree, shrub, herb and moss layer), cover of litter and deadwood layer as well as mineral soil components (stones and rocks (> 63 mm), gravel (2–63 mm), fine soil (< 2 mm)) as well as aspect and slope (Dengler et al. 2016). We also measured soil depth and standard height of vegetation with a falling disc as described in Dengler et al. (2016).

2.3 Data analysis

In plots in which a species occurred in both the herb layer and the shrub or tree layer, we only included the occurrence in the herb layer in order not to distort the diversity indices. For the first part of the analyses, we used VEGEDAZ (Küchler 2024). All community-level response variables (diversity indices, mean ecological indicator values, mean CSR scores) were calculated for the "resident

Fig. 2. The four 1-m^2 plots with low to high *Erigeron annuus* cover values (from **a** to **d**) at site G.

Abb. 2. Die vier 1 m^2-Aufnahmeflächen mit niedriger bis hoher Deckung von *Erigeron annuus* (von **a** bis **d**) im Untersuchungsgebiet G.

community” except *Erigeron annuus* (Hejda et al. 2009). Among diversity indices, we selected species richness (*S*), the Shannon index (*H′*) and the Shannon evenness (*J′*) to get a comprehensive picture. We also calculated for each plot the unweighted mean (see recommendation by Ostrowski et al. 2025) of the ecological indicator values (EIVs) for soil moisture, soil reaction, soil nutrients, light and temperature as well as the competition, stress and ruderality scores (“CSR-values”) according to Grime (1977). For both, we used the indicator values system for Switzerland and the Alps by Landolt et al. (2010), where EIVs range from 1 to 5 and CSR scores from 0 to 3. For the three diversity indices we additionally calculated them for the “native community”, i.e. excluding not only *E. annuus* but all neophytes. This allows assessing the impact on native biodiversity, which is typically in the focus of biodiversity conservation.

In addition, we analysed the habitat type according to Delarze et al. (2015) for each plot including *E. annuus* with the supervised classification proposed by Eggenberg & Bornand (2023). Note that Delarze et al. (2015) is a habitat typology (often referred to as “TypoCH”) but its habitat names often resemble the names of phytosociological alliances.

We used R 4.5.0 (R Core Team, 2024) to analyse the effect of *E. annuus* cover on the diversity indices, mean EIVs and the CSR scores. We applied (generalized) linear mixed models (GLMMs) with the *E. annuus* cover as fixed factor and the site as random factor. After visually inspecting the linear relationship between the response variables and the *E. annuus* cover for each site separately, we decided to combine random intercept and random slope in our (G)LMM. We fitted the model using the function glmmTMB from the package glmmTMB (Brooks et al. 2017, McGillycuddy et al. 2025). For the model validation we used the function ‘simulateResiduals’ from the package ‘DHARMa’ (Hartig 2024). When the model summary indicated a statistically significant relationship ($p < 0.05$), we used the function ‘r2’ from the package ‘performance’ (Lüdecke et al. 2021) to assess the proportion of variance explained by the model. If there was a convergence problem in the model with random slope and random intercept, one model with random intercept only and one model with random slope only were fitted, and the one of these with the lower AICc was chosen. In consequence, native species richness, resident species richness, resident Shannon index and resident Shannon evenness were fitted with a random intercept only. Model validation showed satisfactory results for most of the dependent variables, except for EIVs for light and temperature. Since there also transformations did not improve the residual distribution, we stuck with the original models, but caution that significance values might be too optimistic.

3. Results

In total, we recorded 150 vascular plant taxa in the 40 plots surveyed. The complete vegetation plot data are provided in Supplement E3, while the derived community data are in Supplement E4. Species richness ranged from 15 to 38, with a mean of 24.6 vascular plant species in 1 m^2 (Supplement E4). The cover of *Erigeron annuus* varied between 0% and 55% (Supplement E4). The Shannon index ranged from 1.36 to 2.96 and the Shannon evenness from 0.48 to 0.88 (Supplement E4). Also, the mean EIVs and mean CSR scores varied considerably between the sites while they were similar among the plots of each site (Supplement E4).

Thirteen of the tested fourteen analysed community characteristics (response variables) showed no significant relationship with the cover of *E. annuus* (Table 1). Depending on the site, resident species richness increased, decreased or remained constant in relation to the cover of *E. annuus*, resulting in an overall non-significant relationship ($p = 0.297$; Fig. 3). Only the resident Shannon index increased significantly, but minimally with increasing *E. annuus* cover ($p = 0.025$, slope = 0.008; Fig. 4). However, only 6.3% of the variance was attributable to the *E. annuus* cover as the fixed effect (conditional R^2). The results for resident and native diversity indices were very similar (see the intercepts and slopes in Table 1), except that the relationship for native Shannon index was not significant.

Table 1. Final models for the 14 tested response variables in relation to *Erigeron annuus* cover. The variables are grouped from top to bottom into biodiversity metrics, mean ecological indicator values (EIVs; range 1–5) and mean CSR strategy scores (range 0–3). All response variables were calculated for the "resident community" (all species except *Erigeron annuus*), and the diversity indices additionally for the "native community" (all species except neophytes). Marginal R^2 was calculated as the proportion of variance explained by the fixed factor alone and conditional R^2 as the proportion of variance explained by fixed and random factors combined. The only significant *p*-value is shown in bold.

Tabelle 1. Finale statistische Modelle für die 14 getesteten Antwortvariablen in Beziehung zur Deckung von *Erigeron annuus*. Die Variablen sind von oben nach unten in die folgenden Gruppen eingeteilt: Biodiversitätsmasse, mittlere ökologische Zeigerwerte (EIV, Wertebereich 1–5) und mittlere CSR-Strategietypen (Wertebereich 0–3). Alle Antwortvariablen wurden für sämtliche Arten ausser *Erigeron annuus* berechnet («resident»), die Biodiversitätsmasse zusätzlich auch auf die einheimischen Arten (einschliesslich Archäophyten) beschränkt («native»). Das marginale R^2 («Marginal R^2») wurde als Anteil der durch den fixen Effekt erklärten Varianz, das bedingte R^2 («Conditional R^2») als erklärte Varianz durch fixe und zufällige Effekte zusammen berechnet. Der einzige signifikante *p*-Wert ist fett hervorgehoben.

Response variable	*p*-value	Intercept	Slope	Conditional R^2	Marginal R^2
Species richness (resident)	0.297	23.942	0.050		
Shannon index (resident)	0.025	2.211	0.008	0.558	0.063
Shannon evenness (resident)	0.056	0.854	0.009		
Species richness (native)	0.363	23.307	0.062		
Shannon index (native)	0.133	2.159	0.009		
Shannon evenness (native)	0.251	0.830	0.009		
EIV moisture	0.737	2.737	0.000		
EIV reaction	0.458	3.314	0.001		
EIV nutrients	0.225	3.256	0.002		
EIV temperature	0.677	3.522	-0.001		
EIV light	0.344	3.606	0.001		
Competition score	0.492	1.124	0.001		
Ruderality score	0.390	1.053	0.002		
Stress score	0.846	0.822	0.000		

The supervised classification assigned 36 of the 40 plots to the *Arrhenatherion* in the first rank. Within four sites, one plot was classified differently. In the second rank, the plots were distributed over a total of twelve different habitat types with *Cynosurion*, *Agropyro-Rumicion* and *Polygono-Trisetion* being the most common (for details see Supplement E5).

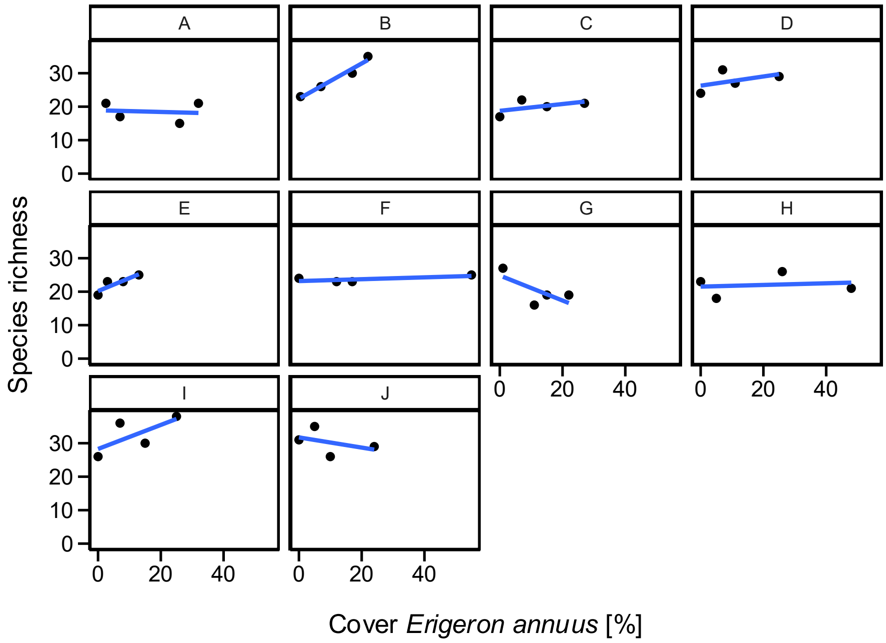

Fig. 3. Linear relationships between *Erigeron annuus* cover and resident species richness, shown separately for each site. The overall relationship was non-significant ($p = 0.297$).

Abb. 3. Lineare Beziehungen zwischen der Deckung von *Erigeron annuus* und dem Artenreichtum der Untersuchungsfläche (ohne *Erigeron annuus*), separate für die 10 Untersuchungsgebiete. Die Gesamtbeziehung war nicht signifikant ($p = 0{,}297$).

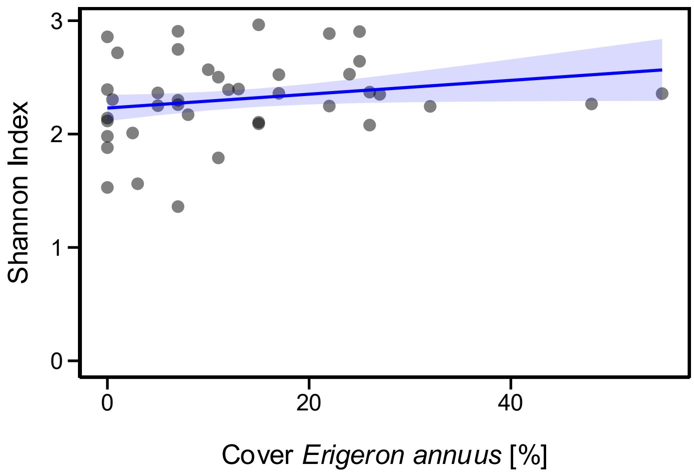

Fig. 4. Predicted effect of *Erigeron annuus* cover on the resident Shannon index ($p = 0.025$ in the mixed-effect model) with 95% confidence interval.

Abb. 4. Vorhergesagter Effekt der Deckung von *Erigeron annuus* auf den Shannon-Index der Aufnahmefläche (ohne *Erigeron annuus*) ($p = 0{,}025$ im gemischten Modell) mit 95 %-Konfidenzintervall.

4. Discussion

In our study of local invasion gradients in Northern Switzerland, we found that *Erigeron annuus* does not affect resident or native plant diversity negatively, but in the case of Shannon diversity even minimally positively. Given that other neophytes were rare in the stands invaded by *E. annuus*, it is not surprising that the results for the diversity of resident and native species were very similar. In a study with similar sampling design in the canton of Bern, Künzi et al. (2015) equally did not find any impact of *E. annuus* cover on species richness or Shannon evenness of either the resident or the native community. However, they found a weak negative effect of this neophyte species on Shannon diversity of the resident community, while in our sample the effect was minimally positive. This divergence for Shannon diversity of the resident community should not be overinterpreted as the p-values were not much below 0.05 and the effect sizes small. For Hungary and Romania, Fenesi et al. (2023) with a paired-plot design did not find any effect of *E. annuus* on either species richness or Shannon diversity of the resident community. Dengler et al. (2024), using a large representative dataset of 10-m^2 grassland plots across Switzerland even found that when accounting for other major drivers of plant species richness, such as nutrients and land use intensity, stand with presence of *E. annuus* had a significantly higher native species richness than expected (+ 8.5%). Thus, all studies from Europe that analysed the impact of *E. annuus* on native or resident plant species richness so far, found either no or positive effects, which contrasts with the current perception of the species in Switzerland (FOEN 2022, InfoFlora 2024, Schweizerischer Bundesrat 2024). To shed light on this contradiction, we searched the Web of Science and SCOPUS for further studies on the effect of *E. annuus* on native plant diversity. This yielded only one additional paper, Y. Liu et al. (2025), from China. These authors report significantly less species in 4 m^2 plots with *E. annuus* than without, but their study is (a) in quite different ecological setting (different continent, different habitat) and (b) methodologically flawed as they did not use a pairing of invaded and uninvaded plots nor did they include other major drivers of plant diversity in their model so that they were unable to account for confounding factors.

The potential impact of a neophyte on native plant diversity essentially can be determined in four main ways: **(1) Experimental studies** with addition or removal of the target neophyte. If such a study is properly replicated and randomised, it allows the direct causal attribution of any changes in the residential plant community to the presence or cover of the neophyte. However, such experimental settings have two major drawbacks: (a) it is not easy to define a proper control as, for example, the treatment with neophyte presence would need to experience the same disturbance as the removal plots, just without removing this species. (b) since experiments are time-consuming and spatially constrained, the generality of the results is usually low. **(2) Local invasion gradients** (as in our study, Hejda et al. 2009, Künzi et al. 2015 or Fenesi et al. 2023). Here pairs or clusters of plots in several to many different sites are sampled, with the idea that the plots within each pair/cluster should be spatially close and ecologically very similar and differ mainly in the cover of the neophyte. Such studies can easily be conducted in many different places and due to the replication and keeping all other factors as similar as possible, the attribution of detected differences to the presence/cover of the neophyte in mixed-effect models despite the observational character is almost as good as in manipulative experiments but the generality is much higher. **(3) Time series data from permanent plots**. In datasets of monitoring plots in which the cover of neophytes is changing with time, this change could be connected to other changes in the community. However, here the question of cause and effect is open, i.e. whether the appearance of the neophyte changed the community, or the community changed through other factors, and this facilitated the establishment of the neophyte. **(4) Analyses of large vegetation-plot datasets without spatial or temporal pairing**. Such observational studies (e.g. Dengler et al. 2024) are possible and make sense when reasonable efforts are made to remove the effects of other influential drivers, which could be done, for example, by adding mean ecological indicator values to the model. The causality in this case cannot be proven, just made plausible, but on the positive side such an approach allows the broadest geographic and ecological generality. It is evident that the sequence of these four approaches reflects a decreasing attributability of effects to the neophyte but increasing generality. All have their merits and best they are used in combination. We acknowledge that in an observational study as ours there could theoretically be confounding effects, which only could be excluded in experiments (but with the shortcomings listed above). However, given that the plots of each of our invasion gradients were on the same parcel of land, thus subject to the same land use, and only very few metres apart, suggest that such confounding effects are very unlikely. Moreover, our analyses of EIVs did not show any differences in site conditions.

Despite our search criteria for sites only were a high local cover of *E. annuus* and homogenous site conditions within the site, nearly all plots belonged to the habitat type *Arrhenatherion*. This underlines that this neophyte is now mainly distributed in managed mesic grasslands and more rarely in other open habitats, in agreement with the assessment in InfoFlora (2024). The few assignments to forest and shrubland habitats are due to the known limitations of the supervised classification algorithm by Eggenberg & Bornand (2023), particularly, the non-hierarchical approach, which easily can lead to assignments in the wrong main habitat group (see Dengler et al. 2019). In fact, all our plots were outside forests and shrublands.

With a mean species richness of 24.6 vascular plants in 1 m^2, our plots were quite species rich compared to typical values of mesic grasslands in the Palaearctic in general (mean: 16.6) or in Switzerland specifically (15.8) (values from the GrassPlotDiversity Explorer v.2.10; https://edgg.org/databases/GrasslandDiversityExplorer; see Biurrun et al. 2021). Such occurrences in species-rich grassland have apparently strongly increased in recent decades while *E. annuus* formerly was largely restricted to ruderal habitats (InfoFlora 2024). Seeing a neophyte becoming more frequent and reaching relatively high cover in habitats with conservation value might have prompted the expectation that there should be negative consequences on native species (InfoFlora 2024). Our study demonstrates that *E. annuus* does not only have no influence on species richness but also does not affect major aspects of community composition – as we did not find any change in mean ecological indicator values or CSR strategy types in the resident community (i.e. excluding *E. annuus* from the calculation). Similarly, Fenesi et al. (2023) found no impact of *E. annuus* on the functional composition (expressed as community weighted means of specific leaf area, seed mass and clonal spread) and functional richness of the resident community. Looking closer into the biology and morphology of the species might explain why this species is not as negative as often assumed: Compared to other neophytes, such as *Impatiens glandulifera*, *Solidago canadensis* and *Reynoutria* spp., *Erigeron annuus* is significantly smaller and does normally not reach that high cover values above 50% or even close to 100%. Accordingly, its ability to suppress native species via light competition is limited. Rather can species rich communities accept additional species without any negative impact.

5. Conclusions and outlook

The study at hand as the previous empirical studies on the topic all agree that *Erigeron annuus* has no negative impact on native plant diversity in Europe, thus could be considered a harmless guest in our flora. Thus, the question arises why Swiss authorities and institutions (FOEN 2022, InfoFlora 2024) concluded that *E. annuus* is particularly harmful to the environment, in contrast to the assessments in all surrounding countries (CABI 2025). While we did not test for potential other negative effects of *E. annuus*, for example on other taxonomic groups, ecosystem functions or human health, we are not aware of any source that claimed such effects. Thus, likely the efforts and money spent to control *E. annuus* could be better used for other conservation measures with clearer benefit.

Generally, invasion biology would benefit from more empirical studies (see also O'Loughlin et al. 2019). We thus call to conduct similar studies on the impact of *E. annuus* on native biodiversity in other regions as well – and expand it to the full range of available methods from controlled addition/removal experiments though multiple local invasion gradients to the analysis of data in large vegetation datasets while controlling for other factors. However, inside Switzerland, the "Freisetzungsverordnung" (Schweizerischer Bundesrat 2024) makes such experiments almost impossible. This call for empirical studies goes also for all other neophytes (for an exemplary study, see Fenesi et al. 2023). This is particularly true as Dengler et al. (2024) indicated that some other species considered as "invasive" (i.e. harmful to biodiversity) did not have a negative or even a positive impact on native plant diversity, while some of those considered as "harmless" (and thus outside the focus of conservation biologists), such as *Lolium multiflorum*, actually were associated with reduced native species richness when accounting for all other major environmental drivers.

Erweiterte deutsche Zusammenfassung

Einleitung – Neobiota gelten neben Landnutzungswandel, Klimawandel und Eutrophierung als einer der Hauptgründe des Biodiversitätsverlustes weltweit (Sala et al. 2000, Rounsevell et al. 2018). Während der Begriff «invasive Neobiota» («invasive alien species») im ursprünglichen naturwissenschaftlichen Sinne Neobiota bezeichnet, die eine dynamische Ausbreitungstendenz zeigen (Richardson et al. 2000, Blackburn et al. 2011), wird er im Naturschutzkontext heutzutage oft im normativen Sinne nur noch für jene Arten verwendet, denen zusätzlich ein negativer Einfluss auf Schutzgüter zugeschrieben wird (IUCN 2000, FOEN 2022), eine Doppeldeutigkeit, die regelmässig zu Missverständnissen führt. *Erigeron annuus* ist in Nordamerika heimisch und seit langem in Europa eingeführt, breitet sich in jüngerer Zeit aber vermehrt in halbnatürlichen Grasländern aus (InfoFlora 2024). Drei europäische Länder, darunter die Schweiz, stufen die Art im normativen Sinne als «invasiv» ein (CABI 2025) mit Verweis auf vermutete negative Einflüsse auf die heimische Pflanzenartenvielfalt (InfoFlora 2024), obwohl konkrete Nachweise dafür fehlen. Deshalb haben wir in dieser Studie untersucht, wie sich zunehmende Deckung von *E. annuus* auf die Artendiversität und Artenzusammensetzung der invadierten Pflanzengesellschaften auswirkt.

Material und Methoden – Untersuchungsgebiet: Nordschweiz, hauptsächlich Kanton Zürich (Abb. 1). Wir untersuchten 10 lokale Invasionsgradienten, die jeweils aus vier 1 m^2 grossen Vegetationsaufnahmen bestanden, die im Abstand von wenigen Metern so angeordnet wurden, dass sie möglichst das ganze Spektrum an Deckungsgraden von *Erigeron annuus* im jeweiligen Gebiet abdeckten, von (fast) fehlend bis zum lokalen Maximum (Abb. 2). In den Aufnahmeflächen wurde alle Gefässpflanzenarten mit prozentualer Deckung aufgenommen (zur Begründung, siehe Dengler & Dembicz 2023, Dembicz & Dengler 2025). Anschliessend berechneten wir drei Diversitätsmasse (Artenreichtum, Shannon-Index, Shannon-Evenness) jeweils für die Artengemeinschaft ohne *E. annuus* («resident community») sowie für die Artengemeinschaft ohne alle Neophyten («native community»). Ferner berechneten wir die mittleren ökologischen Zeigerwerte (Wertebereich jeweils 1–5) und CSR-Strategietypen (Wertebereich jeweils 0–3), beides basierend auf Landolt et al. (2010) und ohne Deckungsgewichtung (siehe Ostrowski et al. 2025). Für die 14 abhängigen Variablen wurden abschliessend gemischte Modelle mit dem Untersuchungsgebiet als zufälligem Effekt und der Deckung von *E. annuus* als fixem Effekt gerechnet. Die Lebensräume der Vegetationsaufnahmen wurden gemäss Eggenberg & Bornand (2023) bestimmt.

Ergebnisse – Fast alle Bestände mit höherer Deckung von *Erigeron annuus*, die wir fanden, gehörten zum Verband *Arrhenatherion elatioris*. Für 13 der 14 untersuchten Antwortvariablen zeigte sich kein signifikanter Einfluss der Deckung von *E. annuus* (Tab. 1). Wie Abbildung 3 für den Artenreichtum der «resident community» zeigt, rührt die fehlende Signifikanz daher, dass abhängig vom Gebiet der lokale Zusammenhang mal positiv, mal negativ, mal neutral war. Einzig für den Shannon-Index der «resident community» war das Modell signifikant – mit einem geringen positiven Einfluss der *E. annuus*-Deckung auf die Diversität (Abb. 4).

Diskussion – Während unsere Auswahlkriterien der Untersuchungsflächen keine Einschränkung auf bestimmte Habitate enthielt, bestätigt das Vorherrschen des *Arrhenatherion* die Einschätzung von InfoFlora (2024), dass *Erigeron annuus* heute hauptsächlich in Grasländern vorkommt, die in unserem Fall sogar überdurchschnittlich artenreich waren. Entgegen der vorherrschenden Ansicht in der Schweiz (InfoFlora 2024, Schweizerischer Bundesrat 2024) fanden wir dagegen keinerlei negativen Einfluss dieses Neohyten auf die Biodiversität, egal ob man die «resident community» oder die «native community» betrachtet, und auch keine systematische Veränderung der Artenzusammensetzung. Dies deckt sich mit den wenigen anderen existierenden empirischen Untersuchungen dieser Art aus Europa: Künzi et al. (2015; Schweiz) und Fenesi et al. (2023; Ungarn und Rumänien) fanden mit einem ähnlichen Ansatz auch keinen negativen Effekt und Dengler et al. (2024; Schweiz) mit einem datenbankbasierten Ansatz sogar einen leicht positiven Effekt. Wir raten daher dazu, dass Einstufungen von Neophyten als «invasiv» im Sinne von «negativer Einfluss auf die heimische Diversität» nur auf empirischer Grundlage vorgenommen werden sollten. Generell wären wesentlich mehr Untersuchungen wie die vorliegende sinnvoll, um den Umgang mit Neophyten auf eine stärker evidenzbasierte Grundlage zu stellen.

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Author contributions

The idea of the study was conceived by J.D., K.G. conducted the field sampling and prepared the data, while S.W. and K.G. conducted the statistical analyses. The Methods and Results sections were drafted by K.G. and the rest by J.D. while all authors revised and approved the manuscript.

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Supplements

Additional supporting information may be found in the online version of this article.

Zusätzliche unterstützende Information ist in der Online-Version dieses Artikels zu finden.

Supplement E1. Detailed information on the location of the sites and plots.
Anhang E1. Detaillierte Information zur Lage der Untersuchungsgebiete und Aufnahmeflächen.

Supplement E2. Calculated distances of the plots within sites.
Anhang E2. Berechnete Entfernungen zwischen den Aufnahmeflächen innerhalb von Untersuchungsgebieten.

Supplement E3. Header and species data of the 40 1-m^2 plots in spreadsheet format.
Anhang E3. Kopf- und Artdaten der vierzig 1 m^2 grossen Vegetationsaufnahmen im Tabellenformat.

Supplement E4. *Erigeron annuus* cover, diversity indices, mean ecological indicator values (EIVs) and mean CSR scores per plot as well as overall minima, maxima, means and medians.
Anhang E4. Deckung von *Erigeron annuus*, Diversitätsmasse, mittlere ökologische Zeigerwerte (EIVs) und mittlere CSR-Werte in den Aufnahmeflächen sowie deren Minima, Maxima, Mittelwerte und Mediane.

Supplement E5. Supervised habitat classification of the 40 plots according to Eggenberg & Bornand (2023).
Anhang E5. Überwachte Habitatklassifikation der 40 Vegetationsaufnahmen mit dem Algorithmus von Eggenberg & Bornand (2023).

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Supplement E1. Detailed information on the location of the sites and plots. The coordinates are given as x and y values of the Swiss coordinate system (in m). The complete header data are provided in Appendix E3.

Anhang E1. Detaillierte Information zur Lage der Untersuchungsgebiete und Aufnahmeflächen. Die Koordinaten sind als x- und y-Werte (in m) im Schweizer Koordinatensystem angegeben. Die vollständigen Kopfdaten befinden sich in Anhang E3.

Site	Canton	Municipality	Plot	*Erigeron* cover [%]	x	y	Elevation [m a.s.l.]	GPS precision [m]
A	Zürich	Bülach	A1	2.5	2’682’130	1’262’767	420	3
			A2	7	2’682’130	1’262’770	420	3
			A3	26	2’682’135	1’262’773	421	3
			A4	32	2’682’135	1’262’771	420	3
B	Aargau	Ennetbaden	B1	0.5	2’666’089	1’259’363	368	2
			B2	7	2’666’094	1’259’362	370	3
			B3	17	2’666’090	1’259’367	369	2
			B4	22	2’666’089	1’259’365	368	1
C	Schwyz	Freienbach	C1	0	2’700’132	1’229’036	408	3
			C2	7	2’700’130	1’229’037	409	3
			C3	15	2’700’124	1’229’044	411	2
			C4	27	2’700’130	1’229’036	409	2
D	Zürich	Nürensdorf	D1	0	2’691’521	1’256’108	520	2
			D2	7	2’691’515	1’256’110	519	3
			D3	11	2’691’519	1’256’108	520	3
			D4	25	2’691’518	1’256’110	520	2
E	Zürich	Richterswil	E1	0	2’694’910	1’229’300	530	3
			E2	3	2’694’903	1’229’300	532	3.22
			E3	8	2’694’910	1’229’304	531	4.29
			E4	13	2’694’914	1’229’306	531	6
F	Zürich	Richterswil	F1	0	2’695’007	1’228’002	583	3.22
			F2	12	2’695’020	1’227’993	576	6
			F3	17	2’695’007	1’227’992	583	3.22
			F4	55	2’695’010	1’227’995	582	4
G	Zürich	Rümlang	G1	1	2’682’593	1’256’453	427	3
			G2	11	2’682’591	1’256’455	428	2
			G3	15	2’682’593	1’256’455	428	3
			G4	22	2’682’587	1’256’456	428	1
H	Zürich	Rümlang	H1	0	2’682’605	1’256’443	427	2
			H2	5	2’682’609	1’256’453	427	3.22
			H3	26	2’682’608	1’256’452	427	2
			H4	48	2’682’608	1’256’450	427	2
I	Zürich	Wallisellen	I1	0	2’686’461	1’252’722	452	3
			I2	7	2’686’463	1’252’721	452	2
			I3	15	2’686’462	1’252’720	451	3
			I4	25	2’686’466	1’252’726	452	3.22
J	Zürich	Zürich	J1	0	2’684’340	1’253’510	441	3.22
			J2	5	2’684’335	1’253’503	440	3.22
			J3	10	2’684’331	1’253’514	441	4.29
			J4	24	2’684’330	1’253’516	441	3.22

Supplement E2. Calculated distances of the plots within sites. Note that the GPS precision varied between 1 m and 6 m (see Appendix E1).

Anhang E2. Berechnete Entfernungen zwischen den Aufnahmeflächen innerhalb von Untersuchungsgebieten. Die GPS-Genauigkeit variierte zwischen 1 m and 6 m (siehe Anhang E1).

Site	Min [m]	Max [m]	Mean [m]
A	2.2	8.7	5.4
B	2.0	5.9	4.0
C	1.0	11.2	5.8
D	1.6	6.2	3.5
E	3.9	12.0	7.0
F	4.3	15.1	9.7
G	1.9	6.3	3.9
H	1.1	10.1	5.5
I	1.6	7.1	4.2
J	1.9	13.7	9.5

Supplement E3a. Header data of the 40 1-m^2 plots.

Beilage E3a. Kopfdaten der vierzig 1 m^2 grossen Vegetationsaufnahmen.

plot_ID	site	plot	InfoFlora_ID	name	management	site_description	total_cover	trees_height	trees_cover	shrubs_height	shrubs_cover	herbaceous_height	herbaceous_cover	moss_cover	litter_cover	deadwoodwood	rocks_cover	gravel_cover	fine-soil_cover	erigeron_heigth	erigeron_cover	aspect	slope	standard_vegetation height (disc) [cm]	soil_depth [cm]
E1	E	1	3033335	PWRG_Richterswil_ Burghalden_1	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Bahnbord, eher lückig, relativ trocken	80					110	50	70	3	0	0	12	88	0	0	NA	27	9, 17, 10, 12, 11	23, 11, 20, 19, 22
E2	E	2	3033336	PWRG_Richterswil_ Burghalden_2	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Bahnbord, eher lückig, relativ trocken	80					84	55	55	22	0	0	5	95	30	3	140	29	14, 14, 13, 8, 7	22, 7, 22, 14, 24
E3	E	3	3033337	PWRG_Richterswil_ Burghalden_3	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Bahnbord, eher lückig, relativ trocken	85					100	60	40	7,5	0	0	1	99	43	8	130	27	8, 8, 7, 16, 13	19, 12, 12, 17, 18
E4	E	4	3033338	PWRG_Richterswil_ Burghalden_4	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Bahnbord, eher lückig, relativ trocken	90					135	65	50	8	0	0	1	99	57	13	140	22	16, 13, 11, 11, 23	10, 43, 23, 17, 32
D2	D	2	3033852	PWRG_Nuerensdorf_ Spielplatz_2	Mahd & Jäten, keine detaillierteren Infos durch flächenverantwortl. Person	Bord zwischen Spielplatz (oben) und Fussballwiese (unten), Ökowiese? Relativ gut versorgt mit Nährstoffen & Wasser.	100					87	97	65	50	0	0	1	99	44	7	190	26	18, 13, 17, 18, 15	7, 16, 15, 12, 17
D4	D	4	3033853	PWRG_Nuerensdorf_ Spielplatz_4	Mahd & Jäten, keine detaillierteren Infos durch flächenverantwortl. Person	Bord zwischen Spielplatz (oben) und Fussballwiese (unten), Ökowiese? Relativ gut versorgt mit Nährstoffen & Wasser.	95					87	94	20	40	0	0	1	99	52	25	200	25	15, 10, 11, 15, 37	12, 11, 14, 16, 17
D3	D	3	3033854	PWRG_Nuerensdorf_ Spielplatz_3	Mahd & Jäten, keine detaillierteren Infos durch flächenverantwortl. Person	Bord zwischen Spielplatz (oben) und Fussballwiese (unten), Ökowiese? Relativ gut versorgt mit Nährstoffen & Wasser.	98					108	97	20	20	0	0	0,5	99,5	61	11	200	33	41, 17, 51, 14, 25	8, 8, 19, 15, 13
D1	D	1	3033855	PWRG_Nuerensdorf_ Spielplatz_1	Mahd & Jäten, keine detaillierteren Infos durch flächenverantwortl. Person	Bord zwischen Spielplatz (oben) und Fussballwiese (unten), Ökowiese? Relativ gut versorgt mit Nährstoffen & Wasser.	99					93	98	30	10	0	0	0,5	99,5	0	0	200	31	10, 17, 24, 34, 26	21, 15, 16, 8, 22
I4	I	4	3033857	PWRG_Wallisellen_ Sandgrueb_4	Mahd (1-2 x/ Jahr), Jäten (Infos durch flächenverantw. Person)	sehr wüchsig, gut mit Nährstoffen & Wasser versorgt, kommunales Schutzobjekt	98			4,5	30	144	95	8	70	0,5	0	0,1	99,9	125	25	NA	18	45, 52, 25, 26, 40	11, 9, 9, 6, 13
I3	I	3	3033858	PWRG_Wallisellen_ Sandgrueb_3	Mahd (1-2 x/ Jahr), Jäten (Infos durch flächenverantw. Person)	sehr wüchsig, gut mit Nährstoffen & Wasser versorgt, kommunales Schutzobjekt	97	6	10			151	97	2	15	0,5	0	0,2	99,8	130	15	180	18	15, 25, 27, 29, 50	11, 15, 4, 6, 7
I2	I	2	3033859	PWRG_Wallisellen_ Sandgrueb_2	Mahd (1-2 x/ Jahr), Jäten (Infos durch flächenverantw. Person)	sehr wüchsig, gut mit Nährstoffen & Wasser versorgt, kommunales Schutzobjekt	98					145	98	1	20	0	0	0	100	93	7	210	20	31, 40, 26, 15, 16	12, 7, 11, 8, 11
I1	I	1	3033860	PWRG_Wallisellen_ Sandgrueb_1	Mahd (1-2 x/ Jahr), Jäten (Infos durch flächenverantw. Person)	sehr wüchsig, gut mit Nährstoffen & Wasser versorgt, kommunales Schutzobjekt	NA					149	98	5	50	0	0	0	100	0	0	200	25	27, 32, 46, 40, 50	9, 14, 14, 15, 8
C1	C	1	3033861	PWRG_Freienbach_ Kirche_1	vermutl. Mahd & evtl. Jäten, unklar, wann jeweils (keine Infos durch flächenverantwortl. Person)	Bord oberhalb Kantonsstrasse, steil, trocken	95					137	95	1	17	0	0	10	90	0	0	230	32	18, 15, 15, 17, 20	27, 21, 24, 28, 5
C2	C	2	3033862	PWRG_Freienbach_ Kirche_2	vermutl. Mahd & evtl. Jäten, unklar, wann jeweils (keine Infos durch flächenverantwortl. Person)	Bord oberhalb Kantonsstrasse, steil, trocken	60					126	65	1	40	0	0	8	92	85	7	220	29	17, 5, 15, 24, 34	35, 11, 26, 12, 28
C3	C	3	3033863	PWRG_Freienbach_ Kirche_3	vermutl. Mahd & evtl. Jäten, unklar, wann jeweils (keine Infos durch flächenverantwortl. Person)	Bord oberhalb Kantonsstrasse, steil, trocken	75					130	75	0	35	0	0	5	95	111	15	280	34	33, 37, 35, 35, 44	22, 18, 8, 27, 19
C4	C	4	3033864	PWRG_Freienbach_ Kirche_4	vermutl. Mahd & evtl. Jäten, unklar, wann jeweils (keine Infos durch flächenverantwortl. Person)	Bord oberhalb Kantonsstrasse, steil, trocken	70					125	70	1	40	0	0	5	95	122	27	280	29	28, 44, 28, 20, 14	18, 21, 9, 25, 22
B4	B	4	3033890	PWRG_Ennetbaden_ neben Rebberg_4	Mahd ab 15. Juni, Neophyten werden gejätet, unbekannt seit wann (Info durch flächenverantwortl. Person)	Nährstoffreiche Wiese an steilem Hang, mittlere Feuchtigkeit, wüchsig, viele Poaceae	98					130	85	7	5	0	0	2	98	94	22	270	25	20, 52, 26, 17, 40	12, 12, 5, 6, 10
B3	B	3	3033891	PWRG_Ennetbaden_ neben Rebberg_3	Mahd ab 15. Juni, Neophyten werden gejätet, unbekannt seit wann (Info durch flächenverantwortl. Person)	Nährstoffreiche Wiese an steilem Hang, mittlere Feuchtigkeit, wüchsig, viele Poaceae	99			210	25	125	95	95	3	0	0	1	99	98	17	290	29	45, 50, 44, 17, 58	16, 12, 32, 17, 14
B2	B	2	3033892	PWRG_Ennetbaden_ neben Rebberg_2	Mahd ab 15. Juni, Neophyten werden gejätet, unbekannt seit wann (Info durch flächenverantwortl. Person)	Nährstoffreiche Wiese an steilem Hang, mittlere Feuchtigkeit, wüchsig, viele Poaceae	92					146	85	2	19	0	0	2	98	78	7	260	36	26, 34, 41, 57, 47	17, 18, 15, 5, 16
B1	B	1	3033893	PWRG_Ennetbaden_ neben Rebberg_1	Mahd ab 15. Juni, Neophyten werden gejätet, unbekannt seit wann (Info durch flächenverantwortl. Person)	Nährstoffreiche Wiese an steilem Hang, mittlere Feuchtigkeit, wüchsig, viele Poaceae	86					160	85	9	8	0	0	0,5	99,5	0	0,5	270	31	27, 50, 59, 48, 55	7, 6, 13, 8, 5
F1	F	1	3033894	PWRG_Richterswil_ Sternenweiher_1	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Steilhang (Damm Sternenweiher), ehemals Wald, im 2022 ausgeholzt, seither offengehalten	98					78	98	1	5	0	0	0,5	99,5	0	0	70	34	23, 23, 17, 25, 16	50, 36, 25, 31, 17
F2	F	2	3033895	PWRG_Richterswil_ Sternenweiher_2	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Steilhang (Damm Sternenweiher), ehemals Wald, im 2022 ausgeholzt, seither offengehalten	95					114	98	0,5	7	0	0	0,5	99,5	71	12	NA	32	57, 22, 32, 23, 20	18, 9, 19, 25, 16
F3	F	3	3033896	PWRG_Richterswil_ Sternenweiher_3	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Steilhang (Damm Sternenweiher), ehemals Wald, im 2022 ausgeholzt, seither offengehalten	99					100	99	1,5	30	1,5	0	0,1	99,9	77	17	110	37	41, 41, 39, 22, 29	35, 26, 11, 38, 10
F4	F	4	3033897	PWRG_Richterswil_ Sternenweiher_4	Mahd & Jäten - Jäten wird sehr genau gemacht (Info durch Neophytenverantwortliche des Naturschutzvereins Richti-Samstagern)	Steilhang (Damm Sternenweiher), ehemals Wald, im 2022 ausgeholzt, seither offengehalten	80					120	75	3	3	20	0	0,5	99,5	79	55	110	37	23, 43, 25, 5, 46	5, 19, 32, 9, 36
A4	A	4	3037464	PWRG_Buelach_ Erachfeld_4	vermutl. Mahd & Jäten, erster Jätdurchgang in 2025 Anfang Juni, erste Mahd Mitte Juni geplant (Info durch flächenverantwortl. Person)	steiles Bord zw. Strasse (o.) und Kiesweg (u.), lückige Veg., recht trocken, viel Erigeron mit geringem Deckungsgrad, da sehr schmächtig und schmal	94					83	52	87	4,5	0	0	0,5	99,5	82	32	140	33	27, 38, 7, 27, 41	5, 13, 8, 8, 11
A3	A	3	3037465	PWRG_Buelach_ Erachfeld_3	vermutl. Mahd & Jäten, erster Jätdurchgang in 2025 Anfang Juni, erste Mahd Mitte Juni geplant (Info durch flächenverantwortl. Person)	steiles Bord zw. Strasse (o.) und Kiesweg (u.), lückige Veg., recht trocken, viel Erigeron mit geringem Deckungsgrad, da sehr schmächtig und schmal	95					87	65	20	7,5	0	0	0,2	99,8	87	26	150	32	17, 13, 37, 35, 33	11, 10, 9, 4, 9
A2	A	2	3037466	PWRG_Buelach_ Erachfeld_2	vermutl. Mahd & Jäten, erster Jätdurchgang in 2025 Anfang Juni, erste Mahd Mitte Juni geplant (Info durch flächenverantwortl. Person)	steiles Bord zw. Strasse (o.) und Kiesweg (u.), lückige Veg., recht trocken, viel Erigeron mit geringem Deckungsgrad, da sehr schmächtig und schmal	97					106	62	84	8	0	0	0,4	99,6	64	7	160	37	6, 20, 18, 23, 23	13, 13, 7, 7, 10
A1	A	1	3037467	PWRG_Buelach_ Erachfeld_1	vermutl. Mahd & Jäten, erster Jätdurchgang in 2025 Anfang Juni, erste Mahd Mitte Juni geplant (Info durch flächenverantwortl. Person)	steiles Bord zw. Strasse (o.) und Kiesweg (u.), lückige Veg., recht trocken, viel Erigeron mit geringem Deckungsgrad, da sehr schmächtig und schmal	99					111	60	95	9,5	0	0	0,2	99,8	11	2,5	140	32	20, 20, 18, 10, 21	14, 9, 10, 13, 10
G1	G	1	3037488	PWRG_Ruemlang_ Bahnhof_1	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	recht trocken, leicht abschüssig, an Mauer der Bahnhofsunterführung	100					100	20	99	6,5	0	0	0,2	99,8	48	1	140	7	10, 15, 5, 14, 13	6, 6, 4, 6, 7
G4	G	4	3037489	PWRG_Ruemlang_ Bahnhof_4	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	recht trocken, leicht abschüssig, an Mauer der Bahnhofsunterführung	98					150	42	94	3,5	0	0	0,5	99,5	149	22	140	13	29, 5, 9, 49, 28	15, 23, 20, 18, 17
G3	G	3	3037490	PWRG_Ruemlang_ Bahnhof_3	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	recht trocken, leicht abschüssig, an Mauer der Bahnhofsunterführung	95					87	30	94	3	0	0	0,2	99,8	87	15	180	19	9, 34, 14, 13, 29	19, 29, 22, 27, 22
G2	G	2	3037491	PWRG_Ruemlang_ Bahnhof_2	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	recht trocken, leicht abschüssig, an Mauer der Bahnhofsunterführung	92					100	50	91	4	0	0	0,5	99,5	94	11	180	11	20, 18, 15, 10, 18	20, 16, 12, 11, 16
H1	H	1	3037492	PWRG_Ruemlang_ Holunder_1	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	wüchsig, gut mit Wasser und Nährstoffen versorgt, flach. Direkt an Gebüsch angrenzend (Holunder, Ulme, Hartriegel)	100			3,4	7	132	99	45	20	0	0	0,1	99,9	0	0	120	9	25, 24, 18, 33, 56	10, 7, 8, 8, 8
H2	H	2	3037493	PWRG_Ruemlang_ Holunder_2	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	wüchsig, gut mit Wasser und Nährstoffen versorgt, flach. Direkt an Gebüsch angrenzend (Holunder, Ulme, Hartriegel)	100			4	65	121	99	93	3	1	0	0,5	99,5	86	5	80	3	25, 22, 22, 20, 24	10, 7, 8, 6, 5
H3	H	3	3037494	PWRG_Ruemlang_ Holunder_3	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	wüchsig, gut mit Wasser und Nährstoffen versorgt, flach. Direkt an Gebüsch angrenzend (Holunder, Ulme, Hartriegel)	99	9	75	2,4	10	122	97	85	5	0,5	0	0,5	99,5	119	26	100	5	18, 25, 15, 23, 10	8, 4, 7, 5, 8
H4	H	4	3037495	PWRG_Ruemlang_ Holunder_4	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	wüchsig, gut mit Wasser und Nährstoffen versorgt, flach. Direkt an Gebüsch angrenzend (Holunder, Ulme, Hartriegel)	99	9	90			129	97	92	3	0	0	1,5	98,5	110	48	50	1	22, 34, 37, 20, 34	6, 7, 8, 7, 6
J4	J	4	3037687	PWRG_Zuerich_ Ettenfeld_4	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	relativ steil, gut mit Wasser & Nährstoffen versorgt, Bord oberhalb Tennisplatz	92					122	80	3	7	0	0,5	2	97,5	109	24	190	25	28, 44, 14, 37, 37	17, 16, 15, 19, 22
J2	J	2	3037688	PWRG_Zuerich_ Ettenfeld_2	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	relativ steil, gut mit Wasser & Nährstoffen versorgt, Bord oberhalb Tennisplatz	96					115	80	62	1,5	0	0,3	1	98,7	115	5	200	24	34, 29, 16, 36, 20	20, 18, 20, 20, 19
J3	J	3	3037689	PWRG_Zuerich_ Ettenfeld_3	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	relativ steil, gut mit Wasser & Nährstoffen versorgt, Bord oberhalb Tennisplatz	95					157	75	16	18	0	0	0,2	99,8	116	10	190	28	25, 37, 34, 34, 52	14, 19, 13, 17, 17
J1	J	1	3037690	PWRG_Zuerich_ Ettenfeld_1	wohl Mahd, Jäten unbekannt (keine Infos durch flächenverantw. Person)	relativ steil, gut mit Wasser & Nährstoffen versorgt, Bord oberhalb Tennisplatz	96					116	94	12	2	0	0	1,5	98,5	0	0	190	28	18, 32, 30, 22, 21	19, 26, 21, 24, 18

Supplement E3b. Species data of the 40 1-m² plots.

Beilage E3b. Artdaten der vierzig 1 m² grossen Vegetationsaufnahmen.

Species	3033335	3033336	3033337	3033338	3033852	3033853	3033854	3033855	3033857	3033858	3033859	3033860	3033861	3033862	3033863	3033864	3033890	3033891	3033892	3033893	3033894	3033895	3033896	3033897	3037464	3037465	3037466	3037467	3037488	3037489	3037490	3037491	3037492	3037493	3037494	3037495	3037687	3037688	3037689	3037690
Acer campestre	0,5	0,1	0,1	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Acer platanoides	.	.	.	.	.	.	.	.	0,02	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Acer pseudoplatanus	.	.	.	.	.	.	0,2	.	0,1	.	.	.	.	0,2	1	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Achillea millefolium aggr.	.	.	.	.	.	.	.	.	0,2	0,5	0,2	.	.	.	.	.	0,5	0,2	1,5	.	.	.	.	.	.	.	.	.	0,3	.	.	.	.	3,5	24	4,5	2	0,1	5	0,5
Aegopodium podagraria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	30	18	5	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ajuga reptans	.	.	.	.	1	1	.	.	2	5	12	9	.	0,05	.	0,1	.	.	.	.	50	20	1	5	.	.	.	.	.	.	.	.	.	.	.	.	.	0,02	.	.
Allium cf. vineale	.	.	.	.	.	.	.	.	.	.	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	.	.
Alopecurus pratensis	.	.	.	.	.	.	.	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anemone nemorosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	10	1	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Anthoxanthum odoratum aggr.	.	.	.	.	10	.	1,5	12	.	.	.	.	.	.	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Anthyllis vulneraria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	9	.	.	.
Arabidopsis thaliana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,01	.	.	0,7	.	.	.	.	.	.	.	.	.	.	.	.
Arenaria serpyllifolia	0,02	0,2	1,5	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,01	1	0,2	0,5	.	.	1	0,2	.	.	.	.	.	.	.	.
Arrhenatherum elatius	8	3	13	15	2	0,5	0,5	2	15	12	12	15	5	5	2,5	4	7	6	22	27	.	.	.	.	0,3	0,2	.	.	0,7	.	0,2	.	34	.	0,5	0,5	1	1	4	1
Arum maculatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bellis perennis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	7	11	.	.	.	.
Brachypodium sylvaticum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	20	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Briza media	.	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bromus erectus	.	.	.	.	5	2	25	20	3,5	4	15	.	.	8	.	.	17	13	27	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2,5	0,7	1	2
Bromus hordeaceus	.	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,1	.	.	.
Bromus inermis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1,2	5,5	7	.	.	.	.	.	.	.	.	.	.	.	.
Bromus sterilis	.	.	.	.	.	.	.	.	1	2,5	0,5	.	.	.	.	.	.	.	0,5	1	.	.	.	.	.	.	.	.	.	.	.	.	.	5,5	0,7	0,1	.	.	.	.
Calystegia sepium	.	.	.	.	.	.	.	.	1	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cardamine hirsuta	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cardamine pratensis aggr.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Carex cf. spicata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Carex hirta	.	.	.	.	.	.	.	.	5	2	16	10	.	1	3,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Carex spec.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.
Carex spicata	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1,5	.	.	.	.	.	.	.	.	6,5	.	.	.	.	.	.	.	.	.	.	0,01	0,01	.	0,2
Carex sylvatica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	6	2	0,5	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.
Carpinus betulus	0,01	0,01	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Centaurea jacea aggr.	.	.	.	.	7	1,5	8	.	1	3	1,5	.	.	.	.	.	.	.	.	22	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1
Centaurea scabiosa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.
Cerastium fontanum	.	.	.	.	1	0,5	0,1	0,5	.	0,5	.	.	0,2	0,5	0,5	0,1	.	.	.	.	0,5	.	.	0,3	0,1	0,5	0,5	.	0,2	0,3	0,1	0,2	0,1	.	.	.	0,5	1	0,5	0,5
Cerastium glomeratum	.	0,01	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.
Cirsium arvense	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	0,8	.	.	3	.	3	.	.	.	.	.	.	.	.	.	.	.	.	1	2	3	5,5
Convolvulus arvensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,7	2	1,5	1	.	.	.	.	.	0,5	0,5	.
Cornus sanguinea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2,5	.	5	6	.	.	.	.	.	.	1	.	.	.	.	.
Crepis capillaris	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,6	2	.	.	.	.	.	.	.	.	.
Crepis spec.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	.	.	0,3	.	.	.	.	.	.	.	.	.	.	.	.
Cynosurus cristatus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.
Dactylis glomerata	.	0,2	.	.	10	2	2	9	7	2	12	7	.	.	2	.	4	2,5	1	9	10	22	10	18	.	.	.	0,5	0,2	.	.	1	2	7	6	6	.	4,5	1,5	2
Daucus carota	0,5	0,5	3	2,5	.	2	2,5	.	.	.	.	.	1	6	.	0,5	1,5	4	6	5	.	.	.	.	0,01	.	.	0,01	0,1	.	.	.	.	.	0,1	.	0,2	.	2,5	.
Dianthus carthusianorum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4,5	0,2	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dyospyros kaki	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Elymus caninus	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Elymus repens	.	0,01	.	0,01	.	.	0,5	.	.	.	0,5	7	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	.	0,7	0,4	0,02	10	.	.	.	3,5	3	6	2
Epilobium parviflorum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Epilobium spec.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Equisetum arvense	.	.	.	0,1	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Equisetum spec.	.	.	.	.	.	.	.	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Erigeron annuus	.	3	8	13	7	25	11	.	25	15	7	.	.	7	15	27	22	17	7	0,5	.	12	17	55	32	26	7	2,5	1	22	15	11	.	5	26	48	24	5	10	.
Festuca arundinacea	.	.	.	.	.	.	.	.	1	.	2	2	.	.	.	.	1	.	.	1,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Festuca rubra aggr.	17	35	28	20	3	0,5	2	.	0,5	3	1	.	0,5	1,5	.	2,5	.	.	.	.	.	.	.	.	0,1	1	.	0,5	3,5	0,7	.	.	1,5	.	.	0,2	.	0,4	.	.
Fragaria vesca	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	1,5	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Galium mollugo aggr.	2	1	0,1	14	0,5	.	.	1	2	4	.	0,2	7	22	25	14	5	5,5	15	3,5	.	.	.	.	1,5	0,5	0,2	1	2,2	5	.	.	2	8	4	22	5	5	14	3,5
Galium spurium	.	.	0,01	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Galium verum	.	.	.	.	.	.	4	1	.	.	.	.	.	.	.	.	0,5	.	.	0,3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Geranium cf. pyrenaicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Geranium pyrenaicum	.	.	.	.	12	1	2,5	7	.	.	.	.	.	.	.	.	0,2	0,5	5	0,5	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.
Geranium robertianum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	.	.	.	.	.	.	.	.	.	3	1,5	0,5	.	.	.	.
Geum urbanum	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	0,05	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,3	28	16	1	.	.	.	1
Glechoma hederacea	.	.	.	.	30	5	1,5	0,5	1	1	3	2	.	0,5	4	.	.	.	0,5	.	1	0,5	1	1	.	.	.	.	.	.	.	.	0,5	5,5	0,5	3	1	.	.	.
Hedera helix	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,3	.	2	1	.	.	.	.	.	.	.	.	.	12	0,5	.	.	.	.	.
Helictotrichon pubescens	.	.	.	.	15	2	5	3	.	.	.	.	.	.	.	.	2,5	1	.	0,5	.	.	.	.	.	.	.	.	3	.	0,3	.	.	.	.	.	.	.	.	.
Heracleum sphondylium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	15	13	.	.	.	.	.	.	.	.	2,5	.	.	.	.	.	.	.
Hieracium murorum aggr.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hieracium pilosella	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	0,6	.	.	.	.	.	.	.	.	.	.	.
Holcus lanatus	3	1,5	3	5	.	.	.	1	0,5	2,5	1	6	5	.	7	0,1	.	0,02	.	.	0,01	.	.	.	.	.	.	.	.	.	.	.	1,5	.	.	.	0,01	0,5	0,5	1,5
Hypericum maculatum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,7	.	.	.	.	0,1	0,1	.	.	.	.	.	.	.	.	.	.
Hypericum perforatum	.	.	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypochaeris radicata	0,2	1	1,5	.	.	4	.	.	.	.	.	.	.	1	0,1	.	.	.	.	.	.	0,5	.	.	0,3	.	0,2	2	2	5	2,5	6,5	.	.	.	.	.	.	.	2,5
Juglans regia	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,7	.	.	.	.	.
Knautia arvensis	.	.	.	.	8	25	20	8	15	.	12	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lamium galeobdolon	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lapsana communis	.	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lathyrus pratensis	0,01	0,05	.	0,1	.	.	.	.	.	10	1,5	2	.	.	.	.	.	.	.	.	.	.	.	0,8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lepidium campestre	.	.	.	.	.	.	.	.	0,2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Leucanthemum vulgare aggr.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	.	0,2	1
Lolium multiflorum	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lolium perenne	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	0,1	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	0,5	0,5	.	.	.	.	.
Lotus corniculatus	0,7	3	5	3	.	.	.	.	5	.	.	0,2	1	.	.	.	4,5	4	0,05	.	.	.	.	.	.	.	.	.	1	.	0,5	1,5	.	.	0,2	.	1	9	10	3
Luzula cf. campestris	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,7	.	.	.	.	.	.	.	.	.	.	.
Medicago lupulina	0,5	2	7	5	1	2	4	1	0,5	0,5	5	1	1,5	.	0,01	1	2,5	1	0,5	3	.	.	.	.	1	.	0,1	.	2,5	5	0,01	4	.	.	.	1	.	2	0,5	0,1
Medicago sativa	.	.	.	.	5	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Muscari spec.	.	.	.	.	.	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Myosotis arvensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,3	0,3	0,1	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Myosotis spec.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	1	0,1	0,02	.	.	.	.	.	.	.	.	.	.	.	.
Oenothera spec.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,7	2,5	.	1
Onobrychis viciifolia	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	17	35	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,3	2	.	4
Origanum vulgare	.	.	.	0,3	0,5	5	.	.	.	2	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	10	10	42	25	.	0,2	.	.	.	.	.	.	.	.	.	.
Oxalis corniculata	.	.	.	.	.	.	.	.	.	.	.	.	.	0,3	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Paris quadrifolia	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pastinaca sativa	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.
Plantago lanceolata	.	.	.	.	20	5	7	25	1,5	3	2	8	2	6	.	8	3,5	1	.	.	2	1	.	.	2,5	7	4	5,5	6	7	8	13	0,5	4	1,5	3	6	11	6	18
Plantago major	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Poa pratensis aggr.	1	0,3	3	5	.	1	0,5	2	3	.	0,05	.	3	1	0,5	4	2	3	7	3	.	.	0,5	.	1	1	3	18	0,5	0,5	0,5	0,01	.	1,5	1	3	0,3	0,1	.	.
Poa trivialis	.	.	.	.	3	1	.	.	.	3,5	0,05	2	.	.	.	.	.	.	.	.	0,1	.	0,5	1	.	.	.	.	.	.	.	.	70	2	.	.	.	.	.	.
Polygonatum multiflorum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Potentilla erecta	.	.	.	.	.	.	.	.	.	.	3	4	2,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Potentilla recta	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	2,5	2,5	2,5	.	.	.	.	.	.	.	.	.	.	.	.
Potentilla reptans	1	0,3	3	4	.	.	.	.	5	2	.	.	.	6	.	8	2,5	10	10	2,5	.	.	.	.	.	.	.	.	.	.	.	16	1,5	.	.	.	18	38	10,5	52
Potentilla sterilis	.	.	.	2,5	0,5	.	2,5	33	.	.	.	.	.	.	.	.	.	.	.	.	1	1	10	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Primula cf. elatior	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Prunella vulgaris	.	.	.	.	0,2	1,5	1,5	.	3	8	1	.	.	.	2	.	5	5	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,05	.	.	.	.	.
Prunus avium	.	.	.	.	.	.	.	.	30	10	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ranunculus acris	.	.	.	0,01	5	1,5	1	1	3	2	1,5	5	.	.	1,5	.	1	1	0,2	.	.	2,5	.	0,1	.	.	.	.	0,5	0,2	.	.	4,5	.	.	.	0,1	.	.	.
Ranunculus repens	.	.	.	0,1	2	.	.	0,5	0,5	.	1	.	.	.	.	.	.	.	.	.	5	.	.	0,8	.	.	.	.	.	.	0,3	.	.	.	.	.	.	1	.	0,5
Rhinanthus alectorolophus	.	.	.	.	.	.	.	.	4	20	7	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rosa spec.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	9	.	.	.	.	.	.	.	.	.	.	.	0,3	1	.
Rubus caesius	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	.	.	.	.	.	.	.	.	.	.	.	.	24	5	3	.	.	.	.
Rubus fruticosus aggr.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	0,6	1	0,5
Rumex acetosa	.	0,05	0,01	.	.	.	.	.	3	.	1,5	.	.	.	0,2	.	.	.	.	.	.	.	.	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rumex obtusifolius	.	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	4
Salvia pratensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Sambucus nigra	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	25	.	.	.	.	.
Sanguisorba minor	0,3	0,3	0,5	1	.	.	.	.	.	.	1,5	.	0,7	0,8	3	2,5	2	.	0,2	.	.	.	.	.	.	.	.	.	3	0,02	0,01	1	.	.	.	0,2	.	.	.	.
Sedum sexangulare	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Silene cf. flos-cuculi	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Silene dioica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Silene nutans	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
Silene vulgaris subsp. vulgaris	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	0,7	.	1	.	.	.	.	.	.	.	.	.	.	0,7	.	.
Solidago canadensis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sonchus oleraceus	.	.	0,1	.	.	.	.	.	.	0,5	.	.	0,1	0,1	0,1	.	.	.	.	.	1	.	.	0,2	.	.	0,2	0,3	.	.	.	.	.	.	.	.	0,2	0,01	0,2	.
Stachys officinalis	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Taraxacum officinale aggr.	.	.	0,3	.	.	.	.	.	.	.	.	.	.	.	.	0,1	.	.	5	3	3	15	2	2	0,5	.	.	0,3	0,1	0,02	0,1	.	25	4	1,5	1	2	0,5	.	0,5
Thymus pulegioides	20	1	1,5	.	.	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Thymus serpyllum aggr.	.	.	.	.	.	.	.	.	.	.	.	.	70	10	10	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium campestre	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,01	.	.	.	.	0,1	.	.	.	.	.	.	.	.
Trifolium dubium	.	.	.	.	.	0,01	0,1	0,5	0,1	2,5	2	1	2,5	0,5	.	1	1	0,5	0,2	.	.	.	.	.	1	.	0,5	.	0,3	1	0,3	0,2	.	.	0,3	0,5	0,1	0,2	.	0,5
Trifolium pratense	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trifolium pratense subsp. pratense	.	.	.	2	2	1,5	3	3	4	4	15	12	.	.	.	.	9	.	.	1,5	17	1	1	4	.	.	.	.	0,5	2	.	2	1,5	.	0,5	4	1	0,2	1	.
Trifolium repens	0,5	3	5	10	0,2	.	.	.	2	.	.	.	.	.	.	1,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	5	.	8	0,5	.	4,5
Trisetum flavescens	5	2	3	10	5	2	1	2	12	2	1	6	.	.	0,03	.	4	6	9	3	.	.	.	.	.	.	.	.	0,8	.	.	.	.	.	.	.	.	.	.	.
Ulmus glabra	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7	69	77	93	.	.	.	.
Urtica dioica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Valerianella locusta aggr.	.	.	.	.	0,5	1	0,5	.	.	.	.	.	.	.	.	.	0,2	0,3	0,5	4,5	.	.	.	.	.	0,3	0,01	2,2	0,01	1	0,5	0,01	.	.	.	.	.	.	.	.
Verbascum nigrum	.	.	.	.	.	.	.	.	.	.	.	.	.	0,1	.	1,5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Verbena officinalis	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	0,1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Veronica arvensis	.	.	.	.	1,5	0,01	1	0,5	.	.	.	.	.	.	.	.	0,2	0,01	0,2	0,02	.	.	.	.	.	.	.	0,1	.	.	.	.	.	.	.	0,01	.	.	0,01	0,3
Veronica chamaedrys	0,3	0,5	.	.	.	.	.	.	.	2	3	4	.	.	.	.	.	.	.	.	5	.	.	0,2	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Veronica filiformis	.	.	.	.	.	0,5	.	.	0,01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Veronica hederifolia	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,01	.	.	0,01	.	.
Veronica persica	.	.	.	.	0,2	0,5	0,01	.	.	.	.	0,2	.	.	.	.	0,02	.	.	.	.	.	.	.	.	.	.	.	.	0,1	1	.	.	0,02	.	0,1	.	0,1	0,01	0,05
Veronica serpyllifolia	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,5
Vicia cf. tetrasperma	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0,2	0,2	0,05	0,2
Vicia sativa	.	.	.	.	0,2	.	.	.	.	.	.	.	7,5	0,3	.	2	.	.	0,7	1,5	.	.	.	.	.	.	.	.	.	.	0,3	.	.	.	.	.	.	.	0,1	0,05
Vicia sepium	.	.	.	0,01	.	.	.	.	7	.	0,5	0,5	.	.	.	.	2	0,8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1,5	.	.	.	.	.	.	.
Viola cf. riviniana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Viola odorata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Supplement E4. *Erigeron annuus* cover, diversity indices, mean ecological indicator values (EIVs) and mean CSR scores per plot as well as overall minima, maxima, means and medians. Diversity indices, mean EIVs and mean CSR scores were calculated excluding *Erigeron annuus*.

Anhang E4. Deckung von *Erigeron annuus*, Diversitätsmasse, mittlere ökologische Zeigerwerte (EIVs) und mittlere CSR-Werte in den Aufnahmeflächen sowie deren Minima, Maxima, Mittelwerte und Mediane. Diversitätsmasse, mittlere Zeigerwerte und mittlere CSR-Werte wurden unter Ausschluss von *Erigeron annuus* berechnet.

Site	**Plot**	***Erigeron* cover [%]**	**Species richness**	**Shannon index**	**Shannon evenness**	**Native species richness**	**Native Shannon index**	**Native Shannon evenness**	**EIV temperature**	**EIV light**	**EIV moisture**	**EIV reaction**	**EIV nutrients**	**Competition score**	**Ruderality score**	**Stress score**
Minimum		0	15	1.360	0.480	14	1.169	0.422	3.263	2.870	2.500	3.091	2.931	0.750	0.774	0.684
Maximum		55	38	2.964	0.877	37	2.964	0.885	3.714	3.938	3.109	3.533	3.722	1.351	1.474	1.048
Mean		13.2	24.6	2.310	0.725	23.9	2.253	0.713	3.515	3.623	2.739	3.323	3.277	1.137	1.031	0.826
Median		10.5	23.5	2.328	0.743	23.0	2.265	0.735	3.522	3.714	2.711	3.340	3.304	1.170	1.000	0.829
A	A1	2.5	21	2.009	0.660	20	1.873	0.625	3.647	3.737	2.526	3.474	3.211	0.842	1.474	0.684
	A2	7	17	1.360	0.480	16	1.169	0.422	3.714	3.750	2.531	3.533	3.125	0.875	1.375	0.750
	A3	26	15	2.079	0.768	14	2.006	0.760	3.682	3.769	2.625	3.417	3.385	1.154	1.154	0.692
	A4	32	21	2.244	0.737	20	2.138	0.714	3.588	3.789	2.556	3.389	3.158	1.053	1.105	0.842
B	B1	0.5	23	2.305	0.735	23	2.305	0.735	3.595	3.783	2.571	3.348	3.087	0.967	1.196	0.837
	B2	7	26	2.298	0.705	26	2.298	0.705	3.587	3.654	2.500	3.346	3.231	1.005	1.269	0.726
	B3	17	30	2.524	0.742	28	2.674	0.802	3.400	3.759	2.518	3.379	2.931	1.073	1.034	0.892
	B4	22	35	2.886	0.812	32	2.883	0.832	3.516	3.771	2.603	3.382	3.086	1.175	0.943	0.882
C	C1	0	17	1.529	0.540	17	1.529	0.540	3.533	3.824	2.633	3.250	3.118	1.000	1.000	1.000
	C2	7	22	2.259	0.731	21	2.204	0.724	3.700	3.727	2.750	3.333	3.227	1.227	1.000	0.773
	C3	15	20	2.104	0.702	20	2.104	0.702	3.500	3.650	2.868	3.263	3.350	1.250	0.950	0.800
	C4	27	21	2.351	0.772	21	2.351	0.772	3.528	3.810	2.667	3.350	3.286	1.048	0.905	1.048
D	D1	0	24	2.392	0.753	24	2.392	0.753	3.475	3.625	2.696	3.348	3.083	1.083	1.042	0.833
	D2	7	31	2.747	0.800	30	2.740	0.806	3.500	3.645	2.732	3.333	3.226	1.105	1.113	0.750
	D3	11	27	2.502	0.759	26	2.501	0.768	3.457	3.704	2.731	3.385	3.037	1.120	0.981	0.861
	D4	25	29	2.642	0.785	27	2.602	0.790	3.521	3.724	2.643	3.429	3.069	1.043	0.983	0.940
E	E1	0	19	1.880	0.639	19	1.880	0.639	3.500	3.632	2.588	3.421	3.211	1.263	0.789	0.947
	E2	3	23	1.562	0.498	23	1.562	0.498	3.524	3.696	2.595	3.391	3.304	1.217	0.870	0.913
	E3	8	23	2.171	0.692	23	2.171	0.692	3.591	3.739	2.595	3.435	3.304	1.130	1.000	0.870
	E4	13	25	2.397	0.745	25	2.397	0.745	3.432	3.560	2.826	3.360	3.400	1.200	0.960	0.840
F	F1	0	24	2.115	0.666	23	2.088	0.666	3.525	3.043	3.109	3.190	3.391	1.304	0.913	0.783
	F2	12	23	2.391	0.763	23	2.391	0.763	3.477	3.000	3.109	3.095	3.304	1.304	0.870	0.826
	F3	17	23	2.359	0.752	23	2.359	0.752	3.325	2.870	3.109	3.091	3.304	1.313	0.774	0.913
	F4	55	25	2.357	0.732	25	2.357	0.732	3.341	3.200	3.100	3.174	3.480	1.320	0.920	0.760
G	G1	1	27	2.716	0.824	27	2.716	0.824	3.409	3.885	2.600	3.320	3.077	1.005	1.000	0.995
	G2	11	16	1.790	0.645	16	1.790	0.645	3.679	3.938	2.531	3.467	3.250	0.750	1.313	0.938
	G3	15	19	2.091	0.710	18	1.990	0.689	3.647	3.895	2.588	3.444	3.316	0.895	1.316	0.789
	G4	22	19	2.247	0.763	18	2.233	0.772	3.412	3.737	2.737	3.389	3.368	0.895	1.211	0.895
H	H1	0	23	1.980	0.632	23	1.980	0.632	3.263	3.435	3.068	3.182	3.478	1.348	0.783	0.870
	H2	5	18	2.363	0.818	17	2.080	0.734	3.536	3.278	2.971	3.167	3.722	1.340	0.944	0.715
	H3	26	26	2.370	0.727	26	1.972	0.605	3.587	3.423	2.875	3.231	3.462	1.351	0.923	0.726
	H4	48	21	2.265	0.744	20	1.566	0.523	3.526	3.476	2.775	3.286	3.429	1.054	1.095	0.851
I	I1	0	26	2.857	0.877	25	2.850	0.885	3.348	3.500	2.920	3.269	3.346	1.269	0.962	0.731
	I2	7	36	2.906	0.811	36	2.906	0.811	3.359	3.657	2.794	3.200	3.314	1.211	0.929	0.832
	I3	15	30	2.964	0.871	30	2.964	0.871	3.420	3.600	2.793	3.310	3.400	1.179	1.083	0.738
	I4	25	38	2.904	0.798	37	2.903	0.804	3.456	3.514	2.871	3.270	3.405	1.253	0.959	0.760
J	J1	0	31	2.141	0.623	28	2.025	0.608	3.577	3.733	2.741	3.250	3.367	1.213	1.017	0.771
	J2	5	35	2.250	0.633	32	2.118	0.611	3.534	3.758	2.710	3.290	3.303	1.193	1.076	0.731
	J3	10	26	2.568	0.788	25	2.567	0.797	3.659	3.800	2.674	3.435	3.280	1.165	1.120	0.715
	J4	24	29	2.528	0.751	27	2.479	0.752	3.521	3.821	2.712	3.280	3.250	1.290	0.893	0.817

Supplement E5. Supervised habitat classification of the 40 plots according to Eggenberg & Bornand (2023). The two habitat types from TypoCH with the highest scores are listed.

Anhang E5. Überwachte Habitatklassifikation der 40 Vegetationsaufnahmen mit dem Algorithmus von Eggenberg & Bornand (2023). Die zwei Habitattypen nach TypoCH mit den höchsten Punktzahlen (Score) sind aufgeführt.

		Rank 1			Rank 2		
Site	**Plot**	**Score**	**TypoCH code**	**Habitat name**	**Score**	**TypoCH code**	**Habitat name**
A	A1	3	4.5.1.	Arrhenatherion	3	4.5.3.	Cynosurion
	A2	4	4.5.1.	Arrhenatherion	2	4.1.1.	Alysso-Sedion
	A3	5	4.5.1.	Arrhenatherion	2	4.6.1.	Convolvulo-Agropyrion
	A4	9	4.5.1.	Arrhenatherion	3	7.1.6.	Dauco-Melilotion
B	B1	14	4.5.1.	Arrhenatherion	3	4.5.2.	Polygono-Trisetion
	B2	13	4.5.1.	Arrhenatherion	3	7.1.6.	Dauco-Melilotion
	B3	12	4.2.4.	Mesobromion	11	4.5.1.	Arrhenatherion
	B4	12	4.5.1.	Arrhenatherion	11	4.2.4.	Mesobromion
C	C1	8	4.5.1.	Arrhenatherion	2	4.2.4.	Mesobromion
	C2	7	4.5.1.	Arrhenatherion	5	7.1.1.	Agropyro-Rumicion
	C3	9	4.5.1.	Arrhenatherion	4	7.1.1.	Agropyro-Rumicion
	C4	9	4.5.1.	Arrhenatherion	3	7.1.6.	Dauco-Melilotion
D	D1	13	4.5.1.	Arrhenatherion	4	4.5.2.	Polygono-Trisetion
	D2	12	4.5.1.	Arrhenatherion	3	4.5.2.	Polygono-Trisetion
	D3	12	4.5.1.	Arrhenatherion	3	7.1.6.	Dauco-Melilotion
	D4	12	4.5.1.	Arrhenatherion	7	4.5.3.	Cynosurion
E	E1	9	4.5.1.	Arrhenatherion	2	4.5.2.	Polygono-Trisetion
	E2	11	4.5.1.	Arrhenatherion	3	4.5.2.	Polygono-Trisetion
	E3	13	4.5.1.	Arrhenatherion	2	4.5.2.	Polygono-Trisetion
	E4	13	4.5.1.	Arrhenatherion	4	7.1.1.	Agropyro-Rumicion
F	F1	7	4.5.1.	Arrhenatherion	7	5.1.5.	Aegopodion, Alliarion
	F2	5	4.5.1.	Arrhenatherion	4	4.5.3.	Cynosurion
	F3	5	6.2.3.	Galio-Fagenion	5	6.3.3.	Carpinion
	F4	7	4.5.1.	Arrhenatherion	4	6.3.3.	Carpinion
G	G1	12	4.5.1.	Arrhenatherion	4	4.5.3.	Cynosurion
	G2	5	4.5.1.	Arrhenatherion	3	7.1.1.	Agropyro-Rumicion
	G3	9	4.5.1.	Arrhenatherion	6	4.5.3.	Cynosurion
	G4	6	4.5.3.	Cynosurion	5	4.5.1.	Arrhenatherion
H	H1	14	4.5.1.	Arrhenatherion	3	4.5.3.	Cynosurion
	H2	4	5.3.5.	Sambuco-Salicion	3	4.5.1.	Arrhenatherion
	H3	9	4.5.1.	Arrhenatherion	5	4.5.3.	Cynosurion
	H4	10	4.5.1.	Arrhenatherion	4	4.5.3.	Cynosurion
I	I1	19	4.5.1.	Arrhenatherion	6	7.1.1.	Agropyro-Rumicion
	I2	22	4.5.1.	Arrhenatherion	10	7.1.1.	Agropyro-Rumicion
	I3	19	4.5.1.	Arrhenatherion	6	7.1.1.	Agropyro-Rumicion
	I4	18	4.5.1.	Arrhenatherion	6	4.5.3.	Cynosurion
J	J1	10	4.5.1.	Arrhenatherion	5	8.2.1.1.	Aphanion
	J2	12	4.5.1.	Arrhenatherion	6	8.2.3.2.	Fumario-Euphorbion
	J3	9	4.5.1.	Arrhenatherion	5	8.2.1.1.	Aphanion
	J4	10	4.5.1.	Arrhenatherion	5	4.2.4.	Mesobromion