

EDITORIAL

On the Use of Taxon Names in Community Ecology

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1 | Taxon Names in the Ecological Literature

Vegetation science and community ecology focus on ecosystems composed of multiple species and other taxonomic ranks, such as subspecies. Scientific work in these fields requires accurate identification of these taxa in the field and recording them using standardized scientific names. However, as journal editors, we frequently encounter manuscripts where authors misunderstand taxonomic nomenclature, leading to errors and making articles challenging for readers to follow. Here, we highlight some practices that we believe should be improved for the benefit of vegetation science and community ecology.

1.1 | The Redundancy of Citing Taxon Author Names

For many years, the Author Guidelines of *Applied Vegetation Science* and the *Journal of Vegetation Science* have stated: “Refer to a source for unified scientific nomenclature of plant taxa or vegetation units, e.g., standard flora, checklist, vegetation monograph, or a well-established online database ... Do not use author citation for taxon names in the text unless it is really needed for disambiguation”. Still, many authors burden the text and tables of their manuscripts with lists of taxa with author citations, sometimes with numerous typos that, unfortunately, reveal their lack of familiarity with taxonomic nomenclature.

Why do some authors continue to follow this practice, despite renowned taxonomists (Garnock-Jones and Webb 1996; Fischer 2000, 2015; Meier 2017) having long emphasized its futility? For example, Garnock-Jones and Webb (1996) argued that using author citations “places an unnecessary, and sometimes confusing, burden on botanists who are not concerned with

nomenclatural niceties, and adds no useful information to their papers”. They concluded that author citations “are only essential in certain kinds of nomenclatural discussions”.

It appears that many community ecologists and other users of scientific plant names misunderstand the purpose of author citations. Some may believe that including the author citation provides a more accurate definition of the taxon, while others may do it simply because they see their peers doing so or because they feel taxon names with author citations appear “more scientific”.

According to the International Code of Nomenclature for algae, fungi, and plants (Turland et al. 2018), the author citation is not a part of the taxon name. The code says that citing the author of the name may be desirable, particularly in publications dealing with taxonomy and nomenclature (Article 46.1). Fischer (2000, 2015) outlined in detail why citing author names with plant taxa in non-taxonomic works is redundant and unnecessary, though these arguments received limited international attention as they were published in local journals in German. Similar recommendations were made by Meier (2017) regarding animal names. Here, we summarize the key points.

An author citation is a shortened reference to the original description of a taxon and its nomenclatural type. Each taxon includes genetically and morphologically variable populations, and it is defined by boundaries to other taxa. In contrast, the nomenclatural type is a single element (a voucher specimen in the case of species and infraspecific taxa), which represents a specific (sometimes extreme) case of variation within the taxon. If the taxon circumscription (taxon concept) changes, e.g., through splitting into two taxa or merging with others, the author citation of the taxon name does not change. For example, if *Fagus sylvatica* L. is split into two species, *F. sylvatica* L. and *Fagus orientalis*

Lipsky, the species containing the nomenclatural type of *Fagus sylvatica* retains the original name, and its author citation does not change (see Jansen and Dengler 2010 for other examples). Therefore, adding the author citation does not clarify the taxon recorded in the field. Moreover, many taxa were described long ago, and their original description may be vague or confusing with respect to the current taxonomic concept. Additionally, numerous plant names with the same author citation were used not only for taxa with a different circumscription but also for completely different taxa (see Fischer 2000 for examples).

To accurately define taxa in ecological publications, it is essential to reference a modern taxonomic resource such as a flora monograph, identification key, or a checklist prepared by experienced taxonomists for the study region. These resources provide the necessary taxon concepts, either explicitly by descriptions and characters listed in the key or implicitly by listing all recognized taxa within an area. In contrast, simply citing the taxon author's name does not contribute to taxonomic clarity.

Authors of ecological publications often state that “the nomenclature has been standardised according to XY”. However, standardizing nomenclature alone is insufficient. Community ecologists should ensure that both taxon concepts and nomenclature are standardized using a reliable taxonomic manual or checklist. Additionally, they should describe the methods of taxon identification, which may include collecting specimens for identification by specialists, especially in regions with little-known biota (Simon 2018). When compiling taxon records from various publications and databases, careful attention should be given to reconciling different taxonomic concepts used in the original sources (Jansen and Dengler 2010).

Author citations are indeed important in cases of homonyms, i.e., names that are spelled identically but refer to nomenclatural types of different taxa. For example, *Koeleria cristata* (L.) Bertol. and *Koeleria cristata* Pers. refer to different species currently classified in different genera (*Rostraria* and *Koeleria*, respectively; Euro+Med 2024). However, homonyms are rare and usually resolved in modern taxonomic manuals or checklists. Therefore, referring to taxon concepts and names from these authoritative sources is also sufficient in the case of homonyms. Moreover, data in the GBIF database (<https://www.gbif.org/species/2705915>, accessed on Nov 13, 2024) indicate that many users of botanical nomenclature add author citations to the names thoughtlessly, without actually using it to resolve the homonymy issue: most specimens of *Koeleria cristata* (L.) Bertol. documented by photographs in GBIF belong to *Koeleria* (not *Rostraria*), i.e., the taxon corresponding to the other homonym.

A special case where author citations should be provided is when reporting newly described species that have not yet been included in standard taxonomic manuals or checklists. In such instances, it is helpful to cite the taxonomic work that includes the taxon description rather than just nomenclatural authorities.

We believe that these arguments will encourage community ecologists to move away from the outdated and unnecessary practice of citing authors after each taxon name. It burdens our publications without enhancing accuracy or quality. Let's leave this practice to colleagues dealing with taxonomy and

nomenclature where it makes sense (Benichou et al. 2022). What improves our science is the consistent reference to taxon names and concepts as defined in modern taxonomic works.

1.2 | Abbreviating Genus Names

Abbreviations can be useful in scientific articles, but their excessive use can increase the cognitive load, making reading more difficult and increasing the likelihood of misinterpretation. While words are easy to understand, abbreviations can be harder to decipher.

In biological literature, it is common to abbreviate species names by using the first letter of the genus name followed by the specific epithet. This approach works well in articles focused on a single species or several species from the same genus. For example, instead of repeatedly using the difficult-to-pronounce name *Escherichia coli*, microbiologists often abbreviate it as *E. coli*. However, in community ecology, where articles often include many species from many different genera, this practice can lead to confusion. Some journals require that species names be fully spelled out at first mention and then abbreviated. This leads to species lists like “*P. avium*, *P. spinosa* and *P. sylvestris*”, which can be incomprehensible even to specialists, who have hard time to recognize that the author meant “*Prunus avium*, *Prunus spinosa* and *Pinus sylvestris*” because *P. avium* could also refer to *Padus avium*, while *P. spinosa* could refer to *Pyrus spinosa*. Furthermore, the same initials might lead readers to assume that all species belong to the same genus, which is not the case here. While readers may find the genus names elsewhere in the text, they are likely to skip over this species list and continue reading without complete understanding.

We suggest that authors carefully consider whether abbreviating species names is necessary. If abbreviating is unavoidable, for example, in graphs with limited space, it may be clearer to use only the genus name (or the genus name with an abbreviation of the species epithet if multiple species of the genus are considered in the study) rather than ambiguous abbreviations such as *P. vulgaris*.

2 | Editors' Award

Every year, the editors of *Applied Vegetation Science* select one article for the Editors' Award. For the year 2024, the award was bestowed on Lina Lüttgert for the article “Linking trends of habitat types and plant species using repeated habitat mapping data” (Lüttgert et al. 2024). The ongoing changes in habitats and the abundance and distribution of species in landscapes are important research topics (Kapfer et al. 2017; Knollová et al. 2024). However, individual studies focus either on changes in habitat area (e.g., studies based on remote sensing) or on changes in habitat quality, such as the decline of characteristic or threatened species. It is usually assumed that the decline in habitat area correlates with the decline in habitat quality, but is this always the case? Lüttgert et al. (2024) used data from repeated habitat mapping and data on plant species occurrence from southwestern Germany over the last three decades and compared the changes in habitat area with changes in species occurrence.

They found that in some habitats, such as grasslands, the decline in habitat area is correlated with the decline in species characteristic of that habitat. However, this is not always the case. For example, the area of deciduous forests in southwestern Germany increased, but the abundance of the deciduous forest's characteristic species decreased. An important lesson from this study is that conclusions based on the assessment of changes in habitat quantity cannot be interpreted as changes in habitat quality.

There were other articles worthy of consideration. Rivas, Guerrero-Casado, and Navarro-Cerrillo (2024) also assessed changes in vegetation over the last three decades, but they focused on the fragmentation and functional connectivity of seasonally dry forests in Ecuador. They found that the loss of forest area was 30%, while the loss of connectivity was 75%. Based on their findings, they proposed a new reforestation plan that prioritizes areas where reforestation would improve functional connectivity.

Another interesting paper was the meta-analysis by Berto, Ritchie, and Erickson (2024), which looked at the effects of seed enhancement technologies such as acid treatment, coating, pelleting, flash flaming and priming on germination, emergence, shoot and root length, and biomass of native grasses. These technologies are critical in ecological restoration projects where native grasses are seeded. The meta-analysis based on 2320 paired comparisons from 102 different studies showed that coating, pelleting, and priming, in particular, are beneficial across multiple life stages of grasses. However, the benefits observed in the laboratory or greenhouse studies may not be observed under field conditions.

3 | Journal News

As with other journals published by Wiley, the PDF versions of *Applied Vegetation Science* articles will now appear in a new, more compact layout. The logo on the first page of the new journal design indicates that the journal is owned by the International Association for Vegetation Science (IAVS).

We would like to thank all associate editors and reviewers (see Appendix A) for their voluntary work, which maintains the high scientific standard of the journal.

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Conflicts of Interest

The authors declare no conflicts of interest.

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Appendix A

List of Referees

We thank the referees who served *Applied Vegetation Science* from December 1, 2023 to November 30, 2024. Those who reviewed more than twice are indicated by asterisks.

Emiliano Agrillo	Fabian Fassnacht	Hongyuan Li	William Platt
Didier Alard	Hannes Feilhauer	Regina Lindborg	Arnildo Pott
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David Eldridge	Jonas Lembrechts	Valério D. Pillar	Shilu Zheng
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