



## Rebuttal to: Xu et al. (2022) ‘Research progress on endangered plants: A bibliometric analysis’, *Biodivers. Conserv.* vol. 31, pp 1125–1147

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Xu et al. (2022) recently published a paper in *Biodiversity and Conservation* entitled ‘Research progress on endangered plants: A bibliometric analysis’. Xu et al. stated in Data collection that “The literature data used in this study were obtained from the Web of Science Core Collection™” and “the search formula is as follows: TS = “endangered plant” or TS = “rare plant”. The retrieval date was January 7, 2021”.

Recently, Chiu and Ho (2021) presented that according to the definition of journal’s impact factor, it is recommended to search documents published in 2020 from SCI-EXPANDED after  $IF_{2020}$  were presented by the Journal Citation Reports (JCR).

The Web of Science Core Collection includes:

1. Science Citation Index Expanded (SCI-EXPANDED)—1900–present.
2. Social Sciences Citation Index (SSCI)—1900–present.
3. Arts & Humanities Citation Index (A & HCI)—1975–present.
4. Conference Proceedings Citation Index—Science (CPCI-S)—1990–present.
5. Conference Proceedings Citation Index—Social Sciences & Humanities (CPCI-SSH)—1990–present.
6. Book Citation Index—Science (BKCI-S)—2005–present.
7. Book Citation Index—Social Sciences & Humanities (BKCI-SSH)—2005–present.
8. Emerging Sources Citation Index (ESCI)—2015–present.
9. Current Chemical Reactions (CCR-EXPANDED)—1985–present.
10. Index Chemicus (IC)—1993–present.

Web of Science Core Collection is designed mainly for researchers to find published literature, not for bibliometric studies (Ho 2019a). It is not appropriate to use all different types and levels of databases in the Web of Science directly for bibliometric study (Ho 2019b). For example, ESCI complements the highly selective indexes by providing

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earlier visibility for sources under evaluation as part of the rigorous journal selection process of SCI-EXPANDED, SSCI, and A & HCI (Somoza-Fernández et al. 2018). Based on the method in the original paper (Xu et al. 2022), no potato-related articles and reviews could be found in Arts & Humanities Citation Index (A & HCI), Conference Proceedings Citation Index–Science (CPCI–S), Book Citation Index—Social Sciences & Humanities (BKCI–SSH), Current Chemical Reactions (CCR–EXPANDED), and Index Chemicus (IC).

Based on the search strategies in the original paper (Xu et al. 2022), 2337 documents were found from 1974 to 2021 in the Web of Science Core Collection. However, 110 documents (4.7% of 2337 documents) do not contain search keywords: “endangered plant” or “rare plant” in their title, abstract, or author keywords. It has been pointed out that the documents, which can only be searched out by *Keywords Plus*, were irrelevant to the searched topic (Fu and Ho 2015). Highly cited reviews entitled “Restoration biology: A population biology perspective” (Montalvo et al. 1997) and “Spatial analysis of genetic diversity as a tool for plant conservation” (Escudero et al. 2003) do not contain “endangered plant” or “rare plant” in their title, abstract, or author keywords. These publications are irrelevant to “endangered plants”. Ho’s research group was the first to propose “front page” (including the article title, the abstract, and the author keywords) as a filter to improve the bibliometric study when use the Web of Science Core Collection (Fu et al. 2012).

Using improve search strategies as the search keywords used were: “endangered plant”, “rare plant”, “endangered plants”, and “rare plants”. To have more accurate analysis results, uncommon terms: “rarest plants”, “rarest plant”, “endangering plant”, “rarely planted”, “endangered plantations”, “endangered plantain”, “rare-planting”, “endanger plants”, “endangered Plantago”, “rarely plant”, and “rarefied plant”; misspelling terms: “endanger plant”, “rarer plant”, and “rare plantes”; and some terms missed spaces in the database: “rare plantSternbergia” in the Web of Science Core Collection were also considered.

A total of 3235 documents from 1938 to 2020 in the Web of Science Core Collection were found. A significant different (98% of 1,635 publications) between 3235 documents and 1635 publications from the original paper (Xu et al. 2022) was reached. In 153 documents (4.7% of 3235 documents), the authors do not mention any search keywords in their title, abstract, or author keywords. Finally, 3082 documents were related to endangered plants.

Xu et al. (2022) used inappropriate search strategies to publish “Research progress on endangered plants: A bibliometric analysis” in *Biodiversity and Conservation* which might be misleading readers. Applying appropriate search strategies is recommended for future studies.

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**Data availability** Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

## Declarations

**Competing interests** The authors declare no competing interests.

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