

Late Quaternary Pollen Records in South Korea: Preliminary Data Compilation and Bibliometric Analysis

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- Background
- Reconstructing past vegetation changes from fossil pollen records has many applications in Quaternary science. Applicable sediment samples are available from lakes and wetlands almost worldwide, but analysis is time-consuming and labor-intensive.
 - There are clear benefits to revisiting published regional pollen records for data synthesis studies at larger spatial scales. In recent years, improved data accessibility through open science practices and stewardship efforts has been a key factor in innovative research and new discoveries.
 - This presentation is part of our ongoing effort to develop a community-driven database to support the FAIR data sharing principles. This database primarily targets datasets published in peer-reviewed journals with author consent.
- Approches
- Bibliometric analysis:** to understand the development history and major researchers in this study field in South Korea; total 70 articles extracted from the Web of Science and SCOPUS databases by ‘korea’ AND ‘pollen’ AND (‘paleo*’ OR ‘palaeo*’) in query for title-abstract-keywords (date: 2024-09-26); using R package ‘bibliometrix’ (Aria & Cuccurullo 2017, Journal of Informetrics 11(4): 959-975).
 - Preliminary data compilation:** to prepare a comprehensive list of study sites and sediment core metadata based on published papers; filtering of sediment cores with well-established chronology; consider proxies other than pollen to expand the scope of database.

- Outcomes
- Bibliometric analysis:** identified most productive researchers within the last three decades (Figure 1); (2) title and abstract keyword recognition and relationship analysis to show the conceptual structure of literature collection (Figure 2); half of the articles published in journals such as *Quat. Int.* (N=13); *Palaeogeogr. Palaeoclimatol. Palaeoecol.* (N=8), *Holocene* (N=6), *Quat. Sci. Rev.* (N=5), and *Rev. Palaeobot. Palynol.* (N=3) on relevant topics and few papers in multidisciplinary journals.
 - Sample metadata:** study sites with robust chronology (minimum two AMS ¹⁴C dates; check out PP51C-0572 “Developing prior distributions of sediment accumulation rates for Bayesian age-depth modeling: a case study of Holocene terrestrial sediments in South Korea”) are distributed mainly along the coasts and reflect various depositional environments (Figure 3); sediment-based paleo- reconstruction studies show that while multi-proxy studies have increased in recent years, the number of new pollen cores remains relatively constant (Figure 4).
 - Database website launch:** encouraged by a recent agreement of data contributions from one of the leading researchers, we started building a web platform that displays data in a custom relational database (Figure 5).

- Future work
- Connect with more researchers who are potentially willing to contribute existing data and provide related training and information sessions.
 - Promote these efforts to relevant research communities (many studies are conducted separately in geography, archaeology, and geology), as we aim to expand our data collection to Korean-language papers (e.g., archaeological excavation studies).
 - Develop and maintain clear user protocols for data use policies, standardized taxonomy, and other recommendations to facilitate research collaborations.

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