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Plant phenological dataset collated by the Finnish Society of Sciences and Letters

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Abstract: Long records of phenological observations constitute data for ecological, climate and global change studies. Here we provide an extraordinary dataset of plant phenological observations made in Boreal Europe between 1750 and 1965 from locations situated across historical and modern Finland, mostly between 70° and 60°N and 30° and 20°E. This dataset has been initially generated by the efforts of several generations of volunteers representing naturalists whose field observations and notes have initially made the continuous collection of the data possible. Meanwhile, the data was collated by the Finnish Economic Society and the Finnish Society of Sciences and Letters and published irregularly in the form of several monographs and periodicals by contemporary academic enthusiasts. Each phenological

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observation contains 11 features including: site name, site latitude, site longitude, scientific species name, phenological stage and (if any) its substage, year, date (month and day) and the day since summer solstice, the original literature source, and outlier estimate. Species names given originally either in Latin, Finnish, German and/or Swedish were transformed into scientific species names. Moreover, outdated taxonomic names were updated as appropriate. Phenological stages given originally either in German, Finnish and/or Swedish were transformed into English and standardized by excluding synonyms. Site names were adopted at county level, with corresponding latitude and longitude generated herein. The digitized dataset represents 265478 observations of 985 taxa (assigned to variety/subspecies/species/hybrid/genus) for their 16 different phenological stages made in 371 locations across the region. We provide this dataset to support comparative studies and modeling projects seeking to improve understanding of terrestrial ecosystem dynamics and their responses to a changing environment from local to global scale. Use of this dataset for academic or educational purposes is encouraged as long as the data source is properly cited with attribution given to this presentation of the data. Users are free to use and analyze the data; additionally, we would like to hear from other researchers who use these data sets in teaching or for their own research.

Key words/phrases: boreal ecosystems, citizen science, climate change, ecology, Finland, global change, historical ecology, phenology, plants

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Open Research statement: Data are provided as Supporting Information to this article and are also available from the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) at <https://www.ncei.noaa.gov/access/paleo-search/study/37058>.