**1. Project**

**Title:** Modern Pollen Data for Climate Reconstructions, version 1 (SMPDS)

**Dates:** 2017-2019

**Funding organization**: European Research Council [ERC 694481\_GC2.0], JPI-Belmont through the UK Natural Environmental Research Council (NERC) [NE/P006752/1].

**2. Dataset**

**Title:** Modern Pollen Data for Climate Reconstructions, version 1

**Summary description:** The dataset contains percentage counts for the 247 most important European pollen taxa from individual modern samples from Europe and northern Eurasia, and supporting metadata about each sample. The dataset has been specifically designed for use for quantitative climate reconstructions.

**Publication year:** 2019

**Creator:** Sandy P. Harrison

**Organisation:** Geography and Environmental Science, University of Reading, UK

**Rights Holder:** University of Reading

**3. Terms of use**

This dataset is licensed by the rights-holder(s) under a Creative Commons Attribution 4.0 International Licence: <https://creativecommons.org/licenses/by/4.0/>.

**4. Contents**

**Abstract:** Pollen data are widely used to reconstruct past climate changes, using relationships between modern pollen abundance in surface samples and climate at the surface sample sites. The quality of the reconstructions is strongly influenced by whether the training data set provides an adequate sampling of the climate space. We have assembled modern pollen records from 6458 terrestrial sites from Europe, northern Africa, the Middle East and Eurasia, compiled from multiple different published sources. The taxonomy was standardised using Plants of the World Online ([www.plantsoftheworldonline.org/](http://www.plantsoftheworldonline.org/)) and the Integrated Taxonomic Information System (<https://www.itis.gov/>). Obligate aquatics, insectivorous plants, cultivated plants and non-native species are not included in the data set, since their distribution is not primarily controlled by climate. Some pollen types have been combined to a higher taxonomic level because they were not routinely identified across all the sites or because they occurred in too few sites to allow the construction of robust relationships with climate. The final list consists of 247 taxa (Table 2). The pollen data were transformed from raw counts to relative abundance, based on a pollen sum that includes all the taxa in the assemblage.

**File structure:** The data is provided as a csv file. The metadata are described in Table 1. Table 2 provides a list of the taxa.

Table 1: Characteristics of the data table

|  |  |  |
| --- | --- | --- |
| **Field label** | **Definition** | **Format** |
| Entity name | Provides a unique identifier for each sample | Text |
| Latitude | Latitude of the sample, given in decimal degrees, where N is positive and S is negative | Numeric |
| Longitude | Longitude of the sample, given in decimal degrees, E is positive and W is negative | Numeric |
| Elevation | Elevation of the cave, in meters above sea level (where negative values indicate elevations below sea level) | Numeric |
| Entity Type | Gives a description of the type of sample (e.g. moss polster, pollen trap, lake surface sediment, core top), where available | Text |
| Taxon 1, 2, 3 etc | Gives percentage value of each named taxon | Numeric |

Table 2: List of pollen taxa.

|  |
| --- |
| Abies |
| Acanthaceae |
| Acer |
| Aconitum |
| Adonis |
| Adoxaceae |
| Aesculus |
| Ailanthus |
| Aizoaceae |
| Alnus |
| Alnus alnobetula |
| Amaranthaceae |
| Amaryllidaceae |
| Amygdaloideae |
| Anacardiaceae |
| Andromeda |
| Apiaceae |
| Aquilegia |
| Araceae |
| Arbutus |
| Arctostaphylos |
| Argania |
| Aristolochiaceae |
| Artemisia |
| Asclepiadaceae |
| Asparagaceae |
| Asphodelaceae |
| Asteraceae |
| Asteraceae (Liguliflorae) |
| Asteroideae |
| Carduoideae |
| Cichorioideae |
| Astragalus |
| Berberidaceae |
| Berberis |
| Betula |
| Betula (Chamaebetula) |
| Boraginaceae |
| Brassicaceae |
| Bruckenthalia |
| Buxus |
| Calluna |
| Campanulaceae |
| Capparaceae |
| Caprifoliaceae |
| Caragana |
| Carpinus betulus |
| Carpinus orientalis/Ostrya |
| Caryophyllaceae |
| Cassiope |
| Castanea |
| Cedrus |
| Celastraceae |
| Celtis |
| Ceratonia |
| Cercis |
| Chamaedaphne |
| Chamaerops |
| Chimaphila |
| Cimicifuga |
| Cistaceae |
| Cistus |
| Clematis |
| Clethra |
| Clusiaceae |
| Colchicaceae |
| Colutea |
| Consolida |
| Convolvulaceae |
| Coriaria |
| Cornus |
| Corylus |
| Cotinus |
| Cotoneaster |
| Crassulaceae |
| Crataegus |
| Cucurbitaceae |
| Cupressaceae |
| Cynomorium |
| Cyperaceae |
| Cytinaceae |
| Daphne |
| Datisca |
| Delphinium |
| Dennstaedtiaceae |
| Diapensia |
| Dryas |
| Elaeagnus |
| Empetrum |
| Ephedra |
| Equisetum |
| Erica |
| Ericaceae |
| Euonymus |
| Euphorbiaceae |
| Fabaceae |
| Fabaceae (herbs) |
| Fagus |
| Flueggea |
| Frangula |
| Fraxinus |
| Genisteae |
| Gentianaceae |
| Geraniaceae |
| Halimium |
| Hedera |
| Helianthemum |
| Helleborus |
| Hippophae |
| Huperzia |
| Hymenophyllaceae |
| Hypericaceae |
| Ilex |
| Impatiens |
| Iridaceae |
| Jasminum |
| Juglandaceae |
| Juglans |
| Juncaceae |
| Kalmia |
| Koenigia |
| Laburnum |
| Lamiaceae |
| Larix |
| Laurus |
| Lavandula |
| Ledum |
| Ligustrum |
| Liliaceae |
| Linaceae |
| Linnaea |
| Linum |
| Lonicera |
| Loranthaceae |
| Lycopodiella |
| Lycopodium |
| Lysimachia |
| Lythraceae |
| Magnoliaceae |
| Malus |
| Malvaceae |
| Melanthiaceae |
| Mercurialis |
| Moltkia |
| Montiaceae |
| Moraceae |
| Myrica |
| Myricaria |
| Myrtaceae |
| Nartheciaceae |
| Nerium |
| Nigella |
| Nitrariaceae |
| Olea |
| Oleaceae |
| Onagraceae |
| Ononis |
| Ophioglossaceae |
| Orchidaceae |
| Orobanchaceae |
| Osmundaceae |
| Oxalidaceae |
| Oxyria/Rumex |
| Paeonia |
| Paliurus |
| Papaveraceae |
| Parrotia |
| Periploca |
| Phillyrea |
| Phlomis |
| Phyllanthaceae |
| Picea |
| Picea orientalis |
| Pinus (diploxylon) |
| Pinus (haploxylon) |
| Pistacia |
| Plantaginaceae |
| Platanus |
| Plumbaginaceae |
| Poaceae |
| Polemoniaceae |
| Polygalaceae |
| Polygonaceae |
| Polygonum |
| Polypodiales |
| Populus |
| Portulacaceae |
| Potentilla |
| Primulaceae |
| Prosopis |
| Prunus |
| Pteridaceae |
| Pterocarya |
| Punica |
| Pyrus |
| Quercus deciduous |
| Quercus evergreen |
| Quercus intermediate |
| Ranunculaceae |
| Ranunculus |
| Resedaceae |
| Rhamnaceae |
| Rhamnus |
| Rhododendron |
| Rhus |
| Ribes |
| Robinia |
| Rosaceae |
| Rosmarinus |
| Rubiaceae |
| Rubus |
| Ruscus |
| Rutaceae |
| Salix |
| Salvia |
| Sambucus |
| Sanguisorba group |
| Santalaceae |
| Saxifragaceae |
| Scrophulariaceae |
| Smilax |
| Solanaceae |
| Sorbus |
| Staphyleaceae |
| Styrax |
| Suaeda |
| Syringa |
| Tamarix |
| Taxus |
| Teucrium |
| Thalictrum |
| Thymelaeaceae |
| Tilia |
| Tofieldia |
| Trollius |
| Ulmus |
| Ulmus/Zelkova |
| Urticaceae |
| Vaccinium |
| Valerianaceae |
| Verbenaceae |
| Viburnum |
| Violaceae |
| Viscum |
| Vitex |
| Ziziphus |
| Zygophyllaceae |