

DATA PAPER

Cover and density of southwestern ponderosa pine understory plants in permanent chart quadrats (2002–2020)

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Abstract

This data set consists of 101 permanent 1 m × 1 m (1-m²) quadrats located within southwestern ponderosa pine ecosystems near Flagstaff, Arizona, USA. Individual plants in these quadrats were identified and mapped annually for 19 years (2002–2020). The original chart quadrats were established between 1912 and 1927 to determine the effects of domestic livestock grazing on herbaceous plants and pine seedlings. Today these data provide opportunities to examine the effects of climate and land-use change on plant demography, population dynamics, and community processes. We provide the following data and data formats: (1) digitized maps of all plant locations in shapefile and geodatabase format, (2) shapefiles showing annual locations of each individual plant species, (3) annual maps of each quadrat in TIFF and PDF format, (4) annual basal area of each species per quadrat for species mapped as polygons, (5) tabular representation of polygon areas and centroid locations for plant species mapped as polygons, (6) tabular representation of point locations for plant species mapped as points, (7) plot-scale 20 m × 20 m overstory tree canopy cover, tree basal area, parent material, and elevation, (8) quadrat-scale information (e.g., quadrat site and number, coordinates in UTM Zone 12 and latitude/longitude, and descriptive comments for each quadrat), (9) plant species list, (10) summary of plant species observed in each quadrat, (11) summary of quadrats mapped by site and year, and (12) data formatted for use in Integral Projection Models (IPM) and plant population analyses. There are no copyright restrictions; please cite this paper and the associated data set when data are used in publications.

KEYWORDS

19-years, annual, Arizona, chart quadrat, demography, forb, GIS, graminoid, long-term studies, population dynamics, Southwest

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The complete data set is available in the Forest Service Research Data Archive at <https://doi.org/10.2737/RDS-2021-0092>. All novel code files are available as Supporting Information and permanently archived in Zenodo at <https://zenodo.org/record/5567814>.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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