

Higuera, Philip E. 2015. Data and code from Higuera et al. 2015, The changing strength and nature of fire-climate relationships in the northern Rocky Mountains, U.S.A., 1902-2008. *PLoS ONE* (doi: 10.1371/journal.pone.0127563). figshare: <http://dx.doi.org/10.6084/m9.figshare.1400550>

Overview

This archive includes data and scripts needed to reproduce the analyses in Higuera et al. 2015; it includes 43 (including readMe.md and readMe.pdf) files and is 26 MB when downloaded as a .zip archive. After extracting the .zip archive, there are three folders: Code, Data, and Figures. The **Code** folder contains all the scripts and functions used in the analyses and figure creation. Scripts and functions are written for MATLAB software (.m file type; www.mathworks.com), and each is file fully commented, including dependencies. For some scripts or functions, the MATLAB statistics or curve fitting toolbox is required; all other functions required are provided in this archive. The **Data** folder contains all data used in the paper, stored in .mat (Matlab) or .xlsx (Excel) format. The **Figures** folder contains all figures from the publication, in .jpg, .TIF, and .fig (Matlab) formats.

Contact: Philip Higuera, [University of Idaho, PaleoEcology and Fire Ecology Lab](http://www.uidaho.edu/paleoecology), phiguera@uidaho.edu

Citation Information

Original Reference - please cite if you use data, code, or figures in your own work

Higuera, P. E., J. T. Abatzoglou, J. S. Littell, and P. Morgan. 2015. The changing nature of fire-climate relationships in the U.S. Northern Rockies, 1902-2008. *PLoS ONE* doi: 10.1371/journal.pone.0127563

Contents

1. Code folder
2. Data folder
3. Figure folder

1. Code folder

Files: scripts

Each script is named to indicate the figure or table that it creates. In the first lines of each file there is a thorough description, including FILE REQUIREMENTS, DEPENDENCIES, and CITATION information.

Fig_3_4_5_Table_1_script.m

Fig_6_script.m

Fig_7_script.m

Files: functions

Each function file is named called upon by one or more of the scripts listed above. In the first lines of each function there is a thorough description, including INPUTS, OUTPUTS, DEPENDENCIES, and CITATION information.

Auto.m

BlockResample.m

ClimateFireCorr_movingWindow.m

ClimateFireMLRegression_movingWindow.m

CountourCE_r2_plot.m

PlotPath.m

3. Data folder

Files: climate data

`dailyscores_wrap_19002008_21window.mat`

`dailyscores_wrap_19002008_31window.mat`

`monthllyscores_wrap_19002008_21window.mat`

`monthllyscores_wrap_19002008_31window.mat`

`NR_raw_T_data`

The files `dailyscores*` contain the variable *Outputdata* -- 107 rows x 8 columns: Time series of optimized climate variables from 1895-2008 (rows), for each metric (columns). Columns contain following metrics: ERC, BI, FM100, FM1000 DC, DMC, FFMC, SM. These values are the optimized values for correlations between fire and climate, at 21- or 31-year periods (windows).

The files `monthllyscores*` contain the variable *Outputdata* -- 107 rows x 8 columns: Time series of optimized climate variables from 1895-2008 (rows), for each metric (columns). Columns contain following metrics: T_JA, PET_JJA, PPT_JJA, SPI_Aug. These values are the optimized values for correlations between fire and climate, at 21- or 31-year periods (windows).

The file `NR_raw_T_data` contains two variables, *TMAXDATA* and *TMINDATA* -- 12 rows x 114 columns x 3 pages. Row are months (Jan-Dec), columns are years (1895-2008), and pages are for three different definitions of the study region (total study area, Northern Rockies ecoprovince, Middle Rockies ecoprovince).

Files: fire atlas data

`esp_burn_yearly.xlsx` -- Excel spreadsheet with annual area burned (ha) from 1900-2008, stratified by potential vegetation classification.

`wilderness_burn_yearly.xlsx` -- Excel spreadsheet with annual area burned (ha) from 1900-2008, stratified by wilderness classification.

`MRockAab.mat` -- Contains the variable *MRockAab*, 102 rows x 2 columns: year, annual area burned (ha), clipped to the Middle Rockies Ecoprovince.

`NRockAab.mat` -- Contains the variable *NRockAab*, 102 rows x 2 columns: year, annual area burned (ha), clipped to the Northern Rockies Ecoprovince.

`aab_overlapWithClimate_2011_12.mat` -- Contains the variable *ab*, 1 row, 114 columns: annual area burned (ha) clipped to the area from which climate data were averaged. Each column corresponds to a year, from 1895 through 2008.