Plant life history strategies predicted by satellite-detected drought

J Grey Author[1,2], Brian Gill[3], & Brian Gill[4]

[1] Graduate Degree Program in Ecology, Colorado State University

[2] College of Agriculture, Colorado State University

[3] Department of Ecology and Evolutionary Biology

[4] Biology Department, Penn State University

Author Note

Add complete departmental affiliations for each author here. Each new line herein must be indented, like this line.

Correspondence concerning this article should be addressed to J Grey Author, 307 University Ave, Fort Collins, CO 80523. E-mail: monroejg@colostate.edu

12 Abstract

13

14 *Keywords:* drought, life history, remote sensing, phylogeography

15 Word count:

Plant life history strategies predicted by satellite-detected drought

#Introduction

Life history Annual vs perennial Hypotheses Summary

Methods

Data

Life history.

Phyologeny.

Herbarium Specimens. We downloaded 8670 records from GBIF. (Fig. @ref(tab:raw_GBIF).)

Drought.

Analyses

Phylogeny.

Drought frequency.

Contrast. We used R (Version 3.5.1; R Core Team, 2018) and the R-packages *dplyr* (Version 0.7.8; Wickham et al., 2018), *forcats* (Version 0.3.0; Wickham, 2018a), *ggplot2* (Version 3.1.0; Wickham, 2016), *papaja* (Version 0.1.0.9842; Aust & Barth, 2018), *purrr* (Version 0.2.5; Henry & Wickham, 2018), *raster* (Version 2.8.4; Hijmans, 2018), *readr* (Version 1.1.1; Wickham et al., 2017), *sp* (Version 1.3.1; Pebesma & Bivand, 2005), *stringr* (Version 1.3.1; Wickham, 2018b), *tibble* (Version 1.4.2; Müller & Wickham, 2018), *tidyr*

(Version 0.8.2; Wickham & Henry, 2018), and *tidyverse* (Version 1.2.1; Wickham, 2017) for all our analyses.

Results

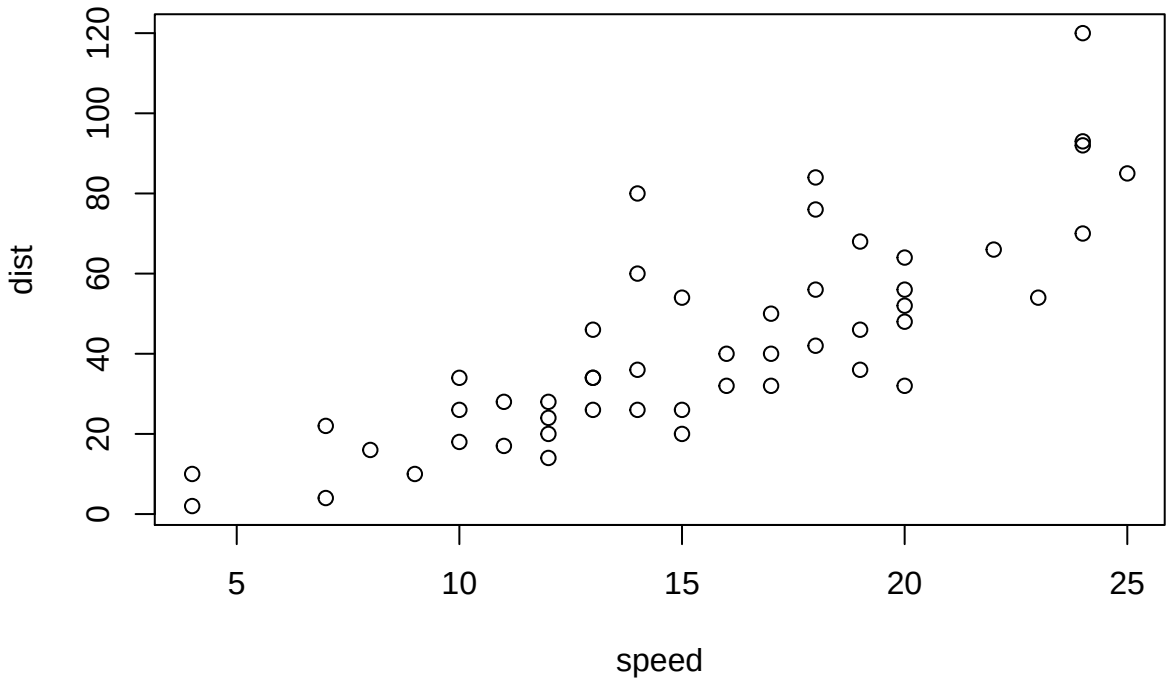

Figure 1. A scatterplot of the data `cars` using **base** R graphics.

First we did this (Fig. 1.)

Discussion

The best paper ever (Monroe et al., 2016)

There is a package installer at pandoc's download page. If you later want to uninstall the package, you can do so by downloading this script and running it with perl uninstall-pandoc.pl.There is a package installer at pandoc's download page. If you later want to uninstall the package, you can do so by downloading this script and running it with perl uninstall-pandoc.pl.There is a package installer at pandoc's download page. If you later want

to uninstall the package, you can do so by downloading this script and running it with perl uninstall-pandoc.pl.There is a package installer at pandoc's download page. If you later want to uninstall the package, you can do so by downloading this script and running it with perl uninstall-pandoc.pl.There is a package installer at pandoc's download page. If you later want to uninstall the package, you can do so by downloading this script and running it with perl uninstall-pandoc.pl.There is a package installer at pandoc's download page. If you later want to uninstall the package, you can do so by downloading this script and running it with perl uninstall-pandoc.pl.

References

Aust, F., & Barth, M. (2018). *papaja: Create APA manuscripts with R Markdown*. Retrieved from https://github.com/crsh/papaja

Henry, L., & Wickham, H. (2018). *Purrr: Functional programming tools*. Retrieved from https://CRAN.R-project.org/package=purrr

Hijmans, R. J. (2018). *Raster: Geographic data analysis and modeling*. Retrieved from https://CRAN.R-project.org/package=raster

Monroe, J. G., McGovern, C., Lasky, J. R., Grogan, K., Beck, J., & McKay, J. K. (2016). Adaptation to warmer climates by parallel functional evolution of cbf genes in arabidopsis thaliana. *Molecular Ecology*, *25*(15), 3632–3644.

Müller, K., & Wickham, H. (2018). *Tibble: Simple data frames*. Retrieved from https://CRAN.R-project.org/package=tibble

Pebesma, E. J., & Bivand, R. S. (2005). Classes and methods for spatial data in R. *R News*, *5*(2), 9–13. Retrieved from https://CRAN.R-project.org/doc/Rnews/

R Core Team. (2018). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from https://www.R-project.org/

Wickham, H. (2016). *Ggplot2: Elegant graphics for data analysis*. Springer-Verlag New York. Retrieved from http://ggplot2.org

Wickham, H. (2017). *Tidyverse: Easily install and load the 'tidyverse'*. Retrieved from https://CRAN.R-project.org/package=tidyverse

Wickham, H. (2018a). *Forcats: Tools for working with categorical variables (factors)*.

Retrieved from https://CRAN.R-project.org/package=forcats

Wickham, H. (2018b). *Stringr: Simple, consistent wrappers for common string operations.* Retrieved from https://CRAN.R-project.org/package=stringr

Wickham, H., François, R., Henry, L., & Müller, K. (2018). *Dplyr: A grammar of data manipulation.* Retrieved from https://CRAN.R-project.org/package=dplyr

Wickham, H., & Henry, L. (2018). *Tidyr: Easily tidy data with 'spread()' and 'gather()' functions.* Retrieved from https://CRAN.R-project.org/package=tidyr

Wickham, H., Hester, J., & Francois, R. (2017). *Readr: Read rectangular text data.* Retrieved from https://CRAN.R-project.org/package=readr