*Date of study*

Fall 2018

*Date of Public Archiving:*

Fall 2021

*Last modified*:

8 December 2023

*Goal*

The primary aim of this study is to link spring phenology data from the Arnold Arboretum Tree Spotters, John O’Keefe’s Harvard Forest data and the Common Garden data. We will assess the differences in cue strength on budburst and duration of vegetative risk between the two sites and, at a finer scale, investigate the role of microclimates on budburst and leafout timing across species.

*Contributors*

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*General Files*

| **File** | **Where** | **What** |
| --- | --- | --- |
| Microclimate publication | <https://doi.org/10.1016/j.ecochg.2023.100071> | Variation across space, species and methods in models of spring phenology |
| microclimates\_README.txt | [Github](https://github.com/cchambe12/microclimates): microclimates\_README.txt | General breakdown of study and where data lives |
| Arboretum Hobo Logger Data | [Github](https://github.com/cchambe12/microclimates/tree/master/arb_data): arb\_data/ | Hobo logger data for the Arboretum |
| Harvard Forest Hobo Logger Data | [Github](https://github.com/cchambe12/microclimates/tree/master/hf_data): hf\_data/ | Hobo logger data for Harvard Forest |
| Phenology Data | [Github](https://github.com/cchambe12/microclimates/tree/master/phendata): phendata/ | Phenology data |
| Phylogeny Data and Tree | [Github](https://github.com/cchambe12/microclimates/tree/master/phylodata): phylodata/ | Phylogeny data |
| Additional Notes | [Github](https://github.com/cchambe12/microclimates/tree/master/notes): notes/ | Extra information on Arboretum, Harvard Forest data and breakdown of data |

*Data and Code*

**Github** [https://github.com/](https://github.com/lizzieinvancouver/buds/tree/master/analyses/data)cchambe12/microclimates/analyses

| **File** | **Where** | **What** |
| --- | --- | --- |
| General Cleaning Files | [Github](https://github.com/cchambe12/microclimates/tree/master/analyses/cleaning): analyses/cleaning/ | Cleans all Tree Spotters data and imports climate data from Weld Hill |
| Calculating Forcing and Chiling | [Github](https://github.com/cchambe12/microclimates/tree/master/analyses/calculating): analyses/calculating | Calculates GDD and chilling temperatures for budburst and duration of vegetative risk |
| Additional Cleaning of Hobo Loggers | [Github](https://github.com/cchambe12/microclimates/tree/master/analyses/cleanloggerdata): cleaningloggerdata/ | Cleans hobo logger data for both the arboretum and Harvard Forest |
| Shiny App script | [Github:](https://github.com/cchambe12/microclimates/blob/master/analyses/micro_shinyapp.R) analyses/micro\_shiny.R | Prepares and runs models and figures for Shiny app |
| Notes on hypotheses | [Github:](https://github.com/cchambe12/microclimates/blob/master/analyses/simcode_micro_notes.txt) analyses/simcode\_micro\_notes.txt | Notes about different hypotheses to be tested and assessed using simulations |
| Hypothesis: Noisy weather station data, simple | [Github:](https://github.com/cchambe12/microclimates/blob/master/analyses/hyp_noisyws_simple.R) analyses/hyp\_noisyws\_simple.R | Simulation code for hypothesis assessing noisy weather station data |
| Hypothesis: Noisy weather station data, with microclimates | [Github:](https://github.com/cchambe12/microclimates/blob/master/analyses/hyp_noisyws_micro.R) analyses/hyp\_noisyws\_micro.R | Simulation code for hypothesis assessing noisy weather station data with microclimatic effects |

**Possible extras:**

