**ReadMe Download Historical Climate Data**

The following ReadMe provides a brief overview of how to download historical climate data from the KNMI Climate Explorer (<http://climexp.knmi.nl>). Note that the script was written to read the maximum and minimum daily temperatures and then take the mean in “Read climate data.R”. It is also possible to download average daily temperatures and modify the script in “Read climate data.R”.

1. Navigate web browser to: <http://climexp.knmi.nl/selectdailyseries.cgi?id=someone@somewhere>
2. Under GHCN-D, click “minimum temperature”
3. Enter latitude and longitude under the second bullet point of the “Select” section that starts with “10 stations near” (these can come from “Climate station data.xlsx” for insects in the manuscript or “/Extensions/Insect database.xlxs” for other insects or can be added for new populations)
4. Under “Time, distance” section, click “Get stations”
5. Select climate station (the following criteria were used in the manuscript):
   1. Select the climate station with the closest latitude (1st priority) and longitude (2nd priority) to those entered in step 3 (generally, this is the top result and is the station used in the analyses)
   2. Scan the other climate stations and select any stations with more than 15 years of data or more than 5 years of more recent data than the station in step 5a and then calculate the difference in latitude and longitude between these stations and those of the insect population
   3. The CMIP6 climate model has a resolution of 1° latitude and 1.5° longitude, so if a station in step 5b is <1° latitude and <1.5° longitude from those of the insect population, then select that station; otherwise, select the station in step 5a
   4. Click “get data” under the selected climate station
   5. Under “Time series”, view the top graph plotting temperature [Celsius] versus year. If there are significant time gaps (>5 years) between the data, then view the graphs for any stations from step 5b and select the station with the fewest gaps in the record
6. If desired, click “raw data” for the selected station, open “Climate station data.xlsx”, and add a new row with the station name (“Name”), its latitude (“Lat”) and longitude (“Lon”), elevation (“Elev”), station code (“Code”), WMO code (“WMO”), start date (“Start\_yr”, “Start\_mo”, and “Start\_day”) and end date (“End\_yr”, “End\_mo”, and “End\_day”)
7. Return to the webpage in step 5, and click on “netcdf” and then “Download netcdf file”
8. Rename the file “Historical Tmin <location>.nc” and move the file to the “Climate data” folder of the downloaded GitHub repo
9. Repeat steps 1-8 for the maximum temperature using the same climate station from step 5 for the minimum temperature. In “raw data” (step 6), confirm that the start date for the maximum temperature is after the start date from the minimum temperature; if not, use this start date in “Climate station data.xlxs”. Rename this netcdf file: “Historical Tmax <location>.nc”
10. Confirm that there are two files (“Historical Tmin <location>.nc” and “Historical Tmax <location>.nc”) in the “Climate data” folder of the downloaded GitHub repo