**16\_Oleksyn\_et\_al\_2020**

Link: <https://onlinelibrary.wiley.com/doi/10.1111/ele.13587>

Aim: Assesses the climate change fingerprint on the foliage of Swedish Scots pine (Pinus sylvestris L.) forests.

The excel file “Primary data for Oleksyn et al.xlsx” contains multiple sheets. This is an example of data issues you will find multiple times along your career.

You will have to convert to .csv and download the data sheet of your interest. Here is a brief breakdown of each sheet.

Trait means by site 1915-2015

Averaged site-level values across sites. Variables are self-explanatory. MAT: Mean annual temperature. MAP: Mean annual precipitation.

Needle lengths 2012-17

Needle length data collected from multiple trees in each site during the second census (2012-2017).

Age class 1 denotes needles formed in the season prior to sampling. Current-year needles were not included

Needle longevities 2012-17

Needle longevity data collected from multiple branches within trees in each site during the second census (2012-2017).

Needle longevity adjusted: Data in census 2 was collected in mid- to late summer (July or August) whereas Sylvén’s measurements (census 1) were taken on branches harvested in mid- to late winter. As the needles of the oldest cohort typically senesce annually and the majority are shed in autumn, the authors adjusted the measurements to account for the shedding of oldest cohort that would have occurred between the summertime sampling and the mid-winter sampling of Sylvén (census 1).

Radial growth 2012

Tree ring-based growth from a 20 m by 20 m plot established at each site in 2012. Wood cores were extracted from two opposite directions at breast height (DBH) from 18 trees per stand at 48 of the 50 stands using the Pressler’s borer. Tree age was determined in laboratory along with the measurements of annual increment. Width of 30 most recent annual increments was taken to calculate annual radial growth rate (mm/year).

Tree height 2012

Tree-level height data from a 20 m by 20 m plot established at each site in 2012.