This file is: Noteson\_SERCChronosequencelitterLAI20210506.docx

Litterfall and Leaf Area Index (LAI) from the Smithsonian Environmental Research Center (SERC) chronosequence of forest plots summarized in two datafiles. The first file (**allplotsyrsfallleafmassLAI\_4.29.21.csv**) gives total Fall LAI, leaf litterfall and total litterfall for each plot and sampling year. The second file (**allplotsyrsspfallleafmassLAI\_4.29.21.csv**) gives total Fall LAI and leaf litterfall for each plot, sampling year and species group.

Background on the sampling

Leaf litter was collected monthly in the fall months (September- December) over several years in plots of the SERC chronosequence of tulip poplar forests in the vicinity of the Smithsonian Environmental Research Center (SERC). Brown and Parker (1994) and McMahon et al. 2010 describe the chronosequence project and provide details on how time since initiation (and ages) were estimated for the stands. The method for obtaining the species-specific factors to convert the dry weight of leaf samples to the leaf area are described in Parker et al. (1989), Brown and Parker (1994) and Parker and Tibbs (2004). The values of those factors have been updated for these datasets.

Meaning of the columns in the file **allplotsyrsfallleafmassLAI\_4.29.21.csv**

plotid standard 6-character code for plot name

cenyr year of census

spwt dry mass of leaf litter (g m-2)

splai\_new Leaf Area Index (m2 m-2)

totalfallmass dry mass of all litter, including twigs/branches, bark/lichens, fruits/flowers (but not including wood) (g m-2)

Meaning of the columns in the file **allplotsyrsfallleafmassLAI\_4.29.21.csv**

plotid standard 6-character code for plot name

cenyr year of census

species SERC numerical code (see file **specieslistforlitter.xlsx**

for the equivalent full species name)

spwt species dry mass of leaf litter (g m-2)

splai\_new species Leaf Area Index (m2 m-2)

**specieslistforlitter.xlsx**

Gives the SERC numerical species codes (first column) and the corresponding common binomial name (second column). Note these binomial names may not reflect the most current taxonomic revision.

Some references

Parker GG, O’Neill JP, Higman D. 1989. Vertical Profile and canopy organization in a mixed deciduous forest. Vegetatio 89:1-2.

Brown MJ, Parker GG. 1994. Canopy light transmittance in a chronosequence of mixed-species forests. Canadian Journal of Forest Research 24:1694-1703

Parker GG, Tibbs DJ. 2004. Structural phenology of the leaf community in the canopy of a Liriodendron tulipifera L. forest in Maryland, USA. Forest Science 50:387–397.

McMahon SM, Parker GG, Miller DR. 2010. Evidence for a recent increase in forest growth. Proceedings of the National Academy of Sciences of the United States of America. 107:3611–3615. DOI: <https://doi.org/10.1073/pnas.0912376107>