Read Me File

The R scripts and data were used to assemble the dataset and compute Table S1 and Figure S4 presented in S.I. *Estimating Thermocline Depth from Lake Area, DOC and P Load* in the manuscript

Carpenter, S.R., Pace M.L., and Wilkinson G.M. 2022. Organic color and resilience of phytoplankton to enrichment.

The R script Merge_Hummingbird+OtherLakes_2022-01-01.R combines data for Hummingbird Lake (Hummingbird_v1.csv) with the multilake dataset AllData+G440index.Rdata. The Hummingbird file was assembled by M.L. Pace from data in the Environmental Data Initiative repositories:

Carpenter, S., J. Kitchell, J. Cole, and M. Pace. 2017. Cascade Project at North Temperate Lakes LTER Core Data Carbon 1984 - 2016 ver 6. Environmental Data Initiative. https://doi.org/10.6073/pasta/8d71e8d3fdec619807e5c05fa1b3eb13 (Accessed 2022-02-22).

Carpenter, S., J. Kitchell, J. Cole, and M. Pace. 2017. Cascade Project at North Temperate Lakes LTER Core Data Physical and Chemical Limnology 1984 - 2016 ver 3. Environmental Data Initiative. https://doi.org/10.6073/pasta/e92243f8bc840d583fdb1d5910691c46 (Accessed 2022-02-22).

The multilake dataset AllData+G440index.Rdata was compiled from the same repositories by Carpenter and Pace 2018.

The combined dataset with all lakes, AllData+Hbird.Rdata, is input to fit the regression model that predicts mixing depth Zmix from DOC, phosphorus load rate, and the square root of lake area (mean fetch). The regression model is fit by R script

Zmix=f(DOC_etc)_LakeYears_Hbird_2022-02-01.R

This R script generates Table S1, Figure S4, and the regression model used in S.I. *Model of phytoplankton response to DOC and enrichment*. It also generates input for the .csv file of data organized by lake-years.

Reference

Carpenter, S. R., & Pace, M. L. (2018). Synthesis of a 33-yr series of whole-lake experiments: Effects of nutrients, grazers, and precipitation-driven water color on chlorophyll. Limnology and Oceanography Letters, 3(6), 419-427. doi:doi:10.1002/lol2.10094