

Q1: Are lake and terrestrial primary productivity coherent?

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This document organizes for openness and reproducibility analyses of the temporal coherence of interannual variation in lake primary productivity with terrestrial primary productivity in the landscape surrounding the lake.

Data important and formatting

```
##updated cleanAnnualts on 5/5/19

lakes_to_get<-read.csv("~/GitHub/AquaTerrSynch/AnalysisCode/lakes20yrs_chla.csv")$x

lagoslakes.raw<-makeLAGOSannualts(lakes_to_get, infovars=c("lake_area_ha", "lake_perim_meters", "nhd_ft",
                                                         "hu12_zoneid", "state_zoneid", "elevation_m"),
                                minmos=3, minobs=3, timespan=c(1989,2018))

##
## Attaching package: 'lubridate'
## The following object is masked from 'package:base':
##
##      date

lagoslakes.cln<-cleanAnnualts(lagoslakes.raw)

rm(lakes_to_get)

MNMPCLakes.raw<-makeMNMPCAannualts(dir="/Users/jonathanwalter/Box Sync/NSF EAGER Synchrony/Data/LAGOS Ex",
                                infovars=c("lake_area_ha", "lake_perim_meters", "nhd_fttype", "nhd_ftco",
                                             "state_zoneid",
                                             "elevation_m"), minmos=3, minobs=3, timespan=c(1989,2018))
MNMPCLakes.raw<-fixNamestoLAGOS(MNMPCLakes.raw, "Minnesota MPCA")
MNMPCLakes.cln<-cleanAnnualts(MNMPCLakes.raw)

WIDNRLakes.raw<-makeWIDNRannualts(dir="/Users/jonathanwalter/Box Sync/NSF EAGER Synchrony/Data/LAGOS Ex",
                                infovars=c("lake_area_ha", "lake_perim_meters", "nhd_fttype", "nhd_ftco",
                                             "state_zoneid",
                                             "elevation_m"), minmos=3, minobs=3, timespan=c(1989,2018))
WIDNRLakes.raw<-fixNamestoLAGOS(WIDNRLakes.raw, "Wisconsin DNR")
WIDNRLakes.cln<-cleanAnnualts(WIDNRLakes.raw)

#IowaALMLakes<-makeIowaALMannualts(almdat="/Users/jonathanwalter/Box Sync/NSF EAGER Synchrony/Data/Iowa ALM",
                                infovars=c("lake_area_ha", "lake_perim_meters", "nhd_fttype", "nhd_ftco",
                                             "state_zoneid",
                                             "elevation_m"), minmos=3, minobs=3, timespan=c(1989,2018))

analysislakes<-list(lakeinfo=rbind(lagoslakes.cln$lakeinfo, MNMPCLakes.cln$lakeinfo, WIDNRLakes.cln$lakeinfo,
                                IOWAALMLakes.cln$lakeinfo),
                    lakedata=c(lagoslakes.cln$lakedata, MNMPCLakes.cln$lakedata, WIDNRLakes.cln$lakedata, IOWAALMLakes.cln$lakedata))
```

```
any(duplicated(analysislakes$lakeinfo$lagoslakeid)) #no duplicates
```

```
## [1] FALSE
```