

Climate forcing/mixing *Why?* temp data exists

Goals: Identify questions, Leaders, Plan, Products

How do lakes respond to mixing?

Climatic drivers on mixing cycles across places

Spatial scale: microstratification, regional forcing, global comparisons

Temporal scale: Diel mixing, nocturnal mixing affects

Annual seasonal mixing regimes: Poly Di Mono Mero

Episodic mixing regimes:

Typhoons

Storms/strong precipitation

Strong wind events

Comparative study of diel/diurnal/nocturnal mixing across lakes of varying:

1. Geography/latitude/altitude (tropical/subtropical/temperate)
2. mixing regimes (poly di mono mero)
3. Focus on epi/mixing layer only?
4. Focus on precipitation-induced events?

Does precipitation drive mixing/stratification? Is there a regional trend?

Climate: cycles, directional stochastic seasonal

Precipitation, evaporation, Temp, wind, storms

Latitude, size, shape, catchment, hydrology

Approach survey or experiment

ATM⇒Climate⇒time scale⇒weather drivers⇒spatial pattern⇒thermal⇒lake

Response variables: DO, phyto/micro?

Stability of system versus scale (frequency, magnitude, intensity) of disturbance

Identify significant weather events (wind/precip)

How do physical processes happening at different time scales affect biological processes?

What is the regional patterns?

Polymictic-driving events?

Create a special session at a national/international meeting? (AGU/ASLO)

Thermal profile ⇒ search for discontinuity/glitch at various temporal scales (minutes, hourly, daily, monthly, annually; partial overturn, full mixis) ⇒ identify driver (weather) ⇒ search for generalities and exceptions ⇒ link to bio response (DO/phyto/micro)

Question:

1A. How does the **duration/intensity/frequency** (magnitude) of disturbance drive the rate of thermal structure change?

1B. What is the biotic response to the rate of these thermal structure changes?

MET data to find duration/intensity/frequency

THERMAL PROFILE to determine thermal glitches/mixing timing

6 month- 1 year: characterize how GLEON lakes mix/define mixing events

Leaders: unnamed post doc

Product: paper