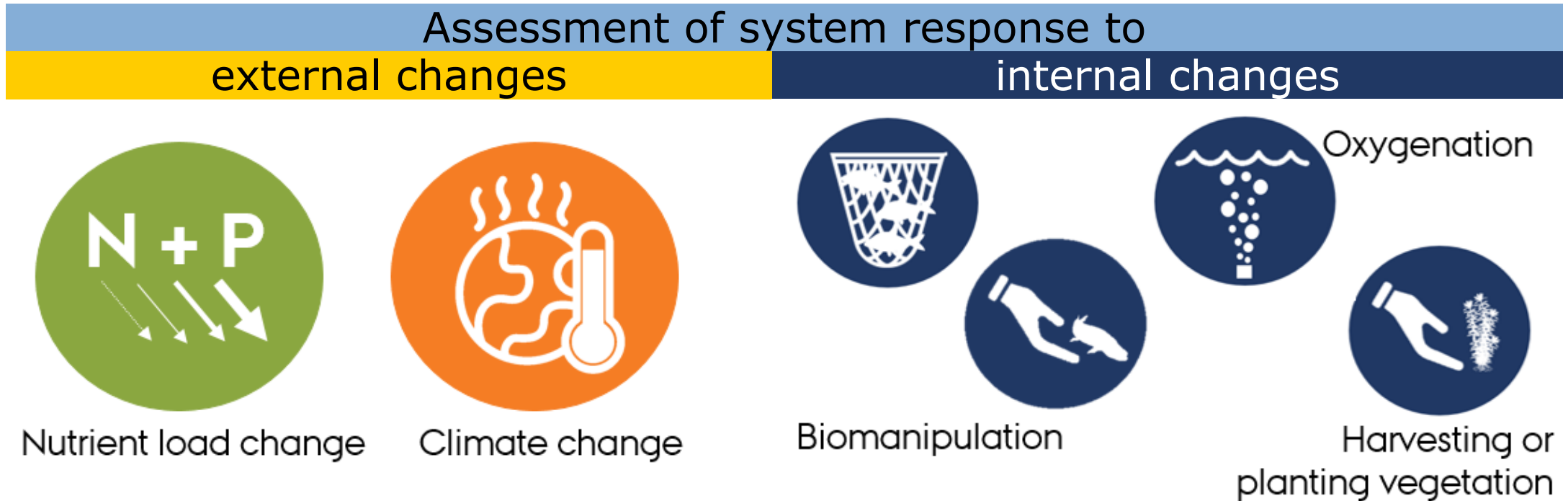




Tobias K Andersen, Xiangzhen Kong

WET outlook

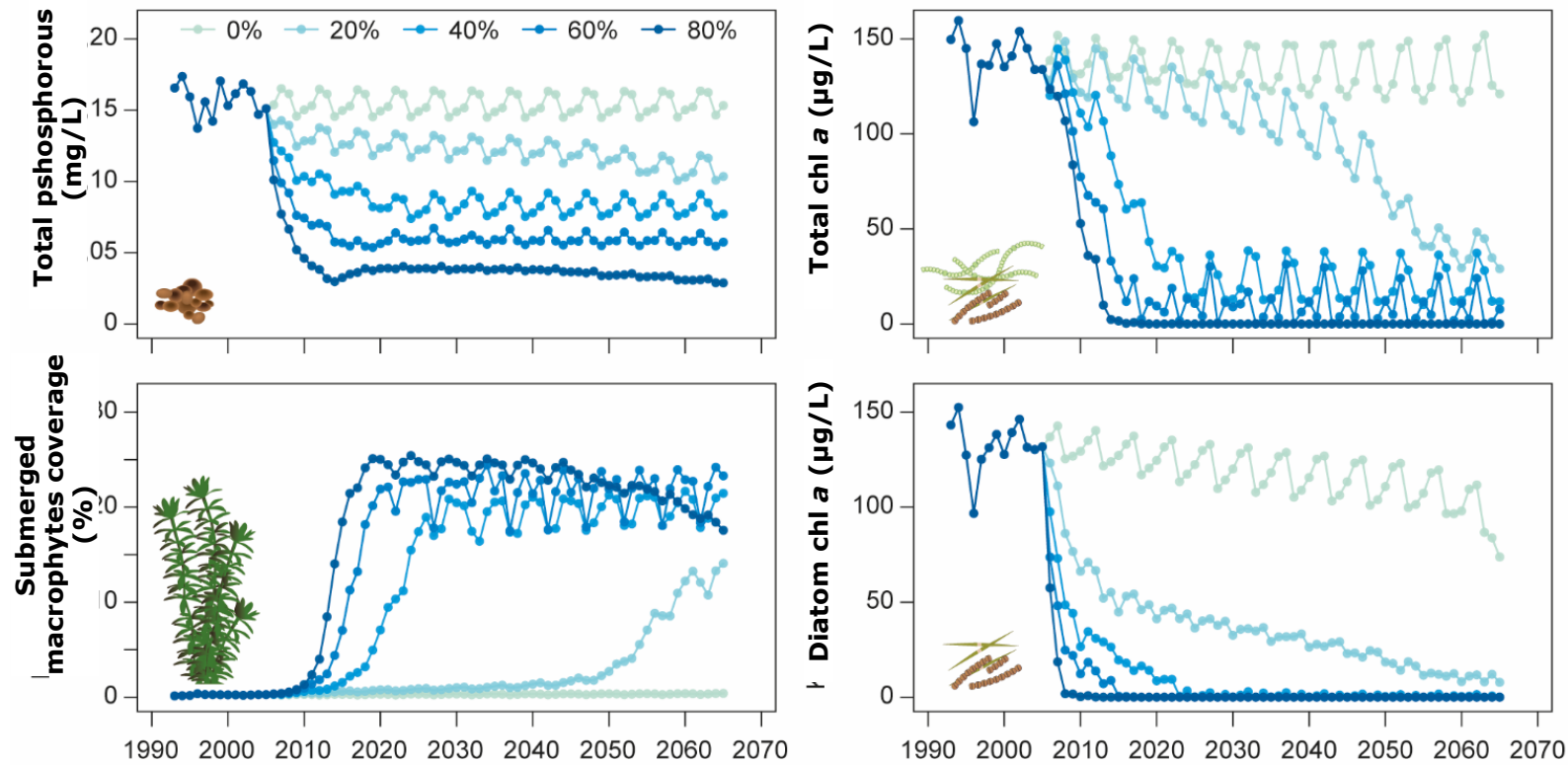
Seek the edge of possibility: Reproduce restoration methods



We need a proven track record of reproducing lake restorations
with GOTM-WET

External P load reductions

WET is able estimate time period for a lake to reach a given state and to estimate nutrient load thresholds for the transition to clear-water state.



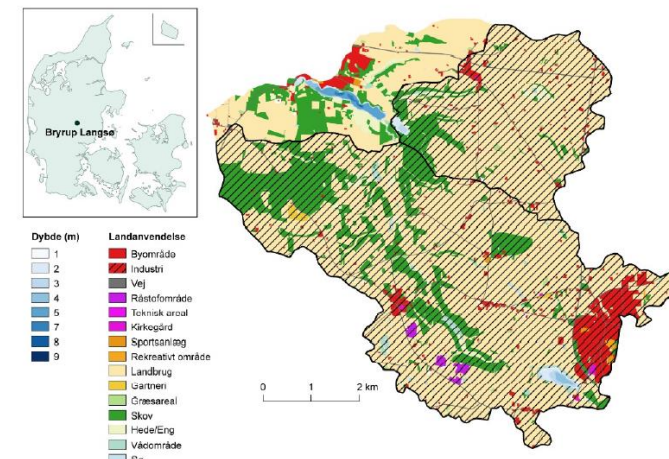
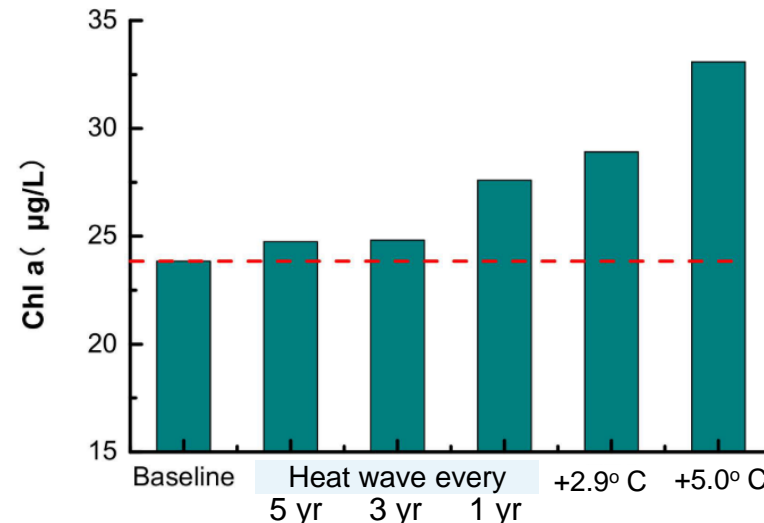
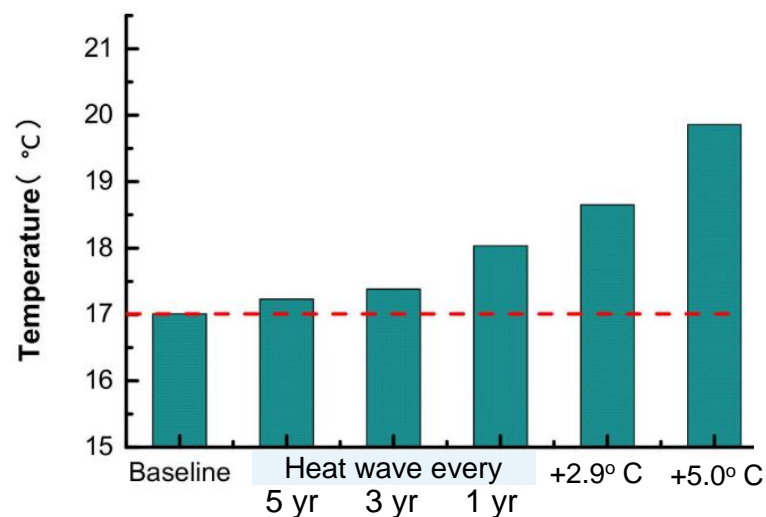
Andersen et al, 2020, *Ecol. Appl.* (redrawn)



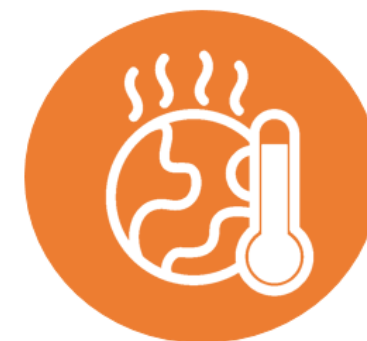
Nutrient load change

Lake Bryrup: Case study for climate change impact

Summer means



- The average concentration of cyanobacteria is around 40% higher, and at peak values are around 60% higher, during a heat wave year.
- The Chlorophyll *a* to phosphorus ratio increases in a heat wave year.

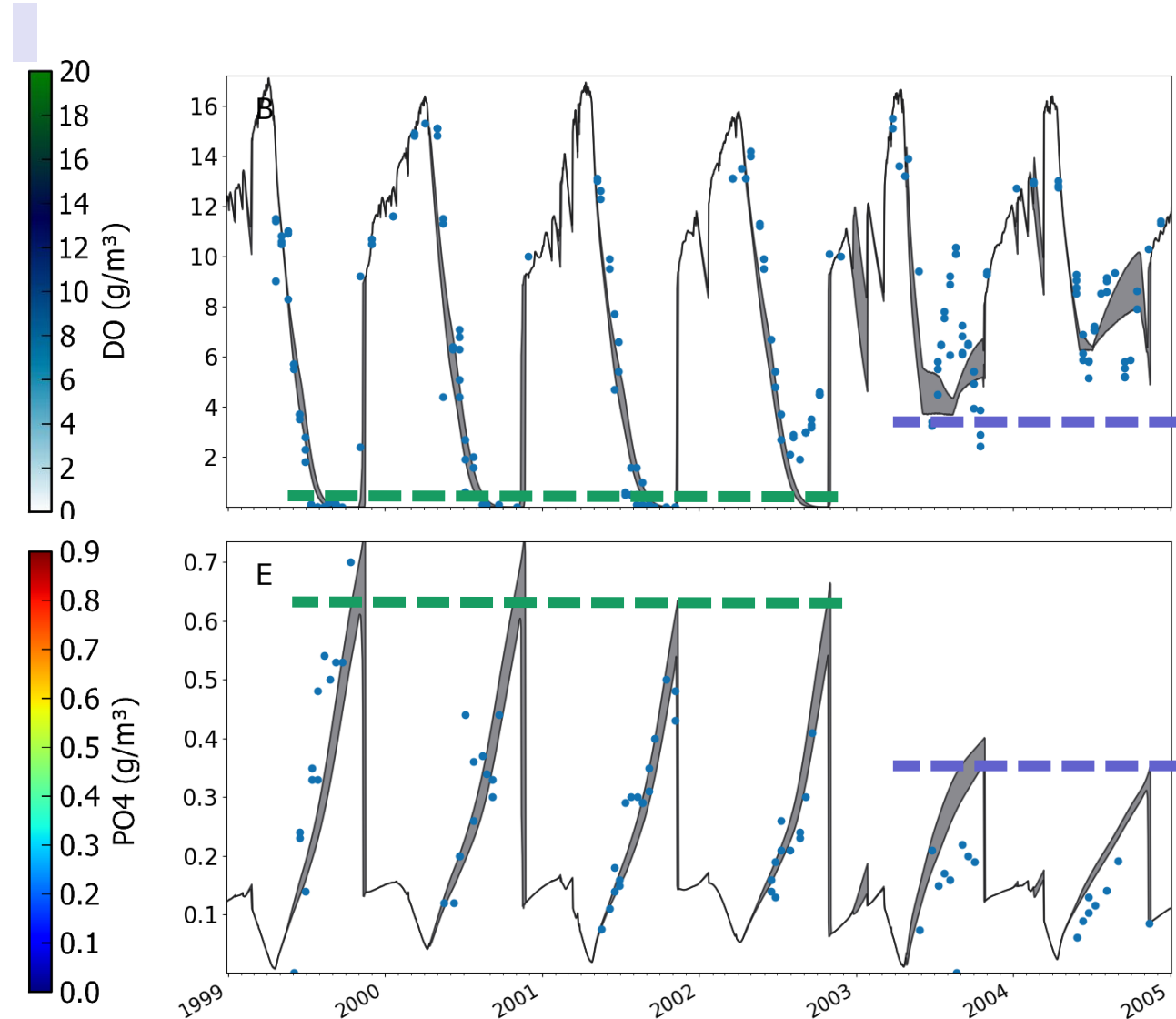
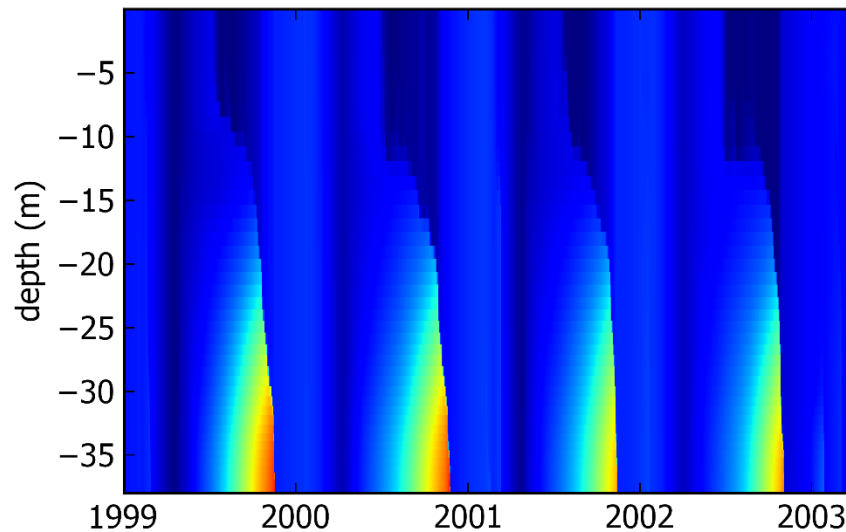
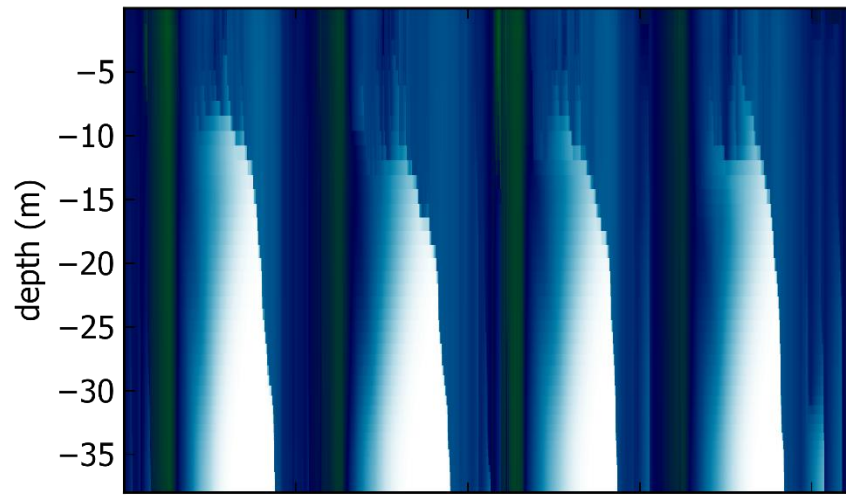


Climate warming

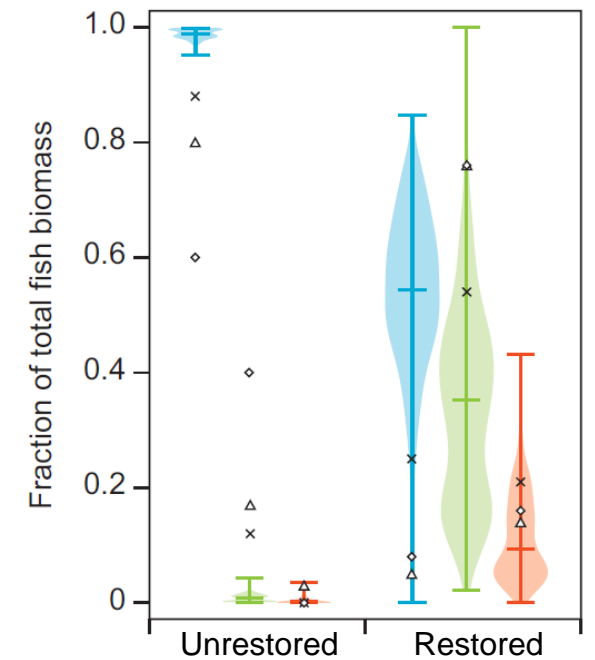
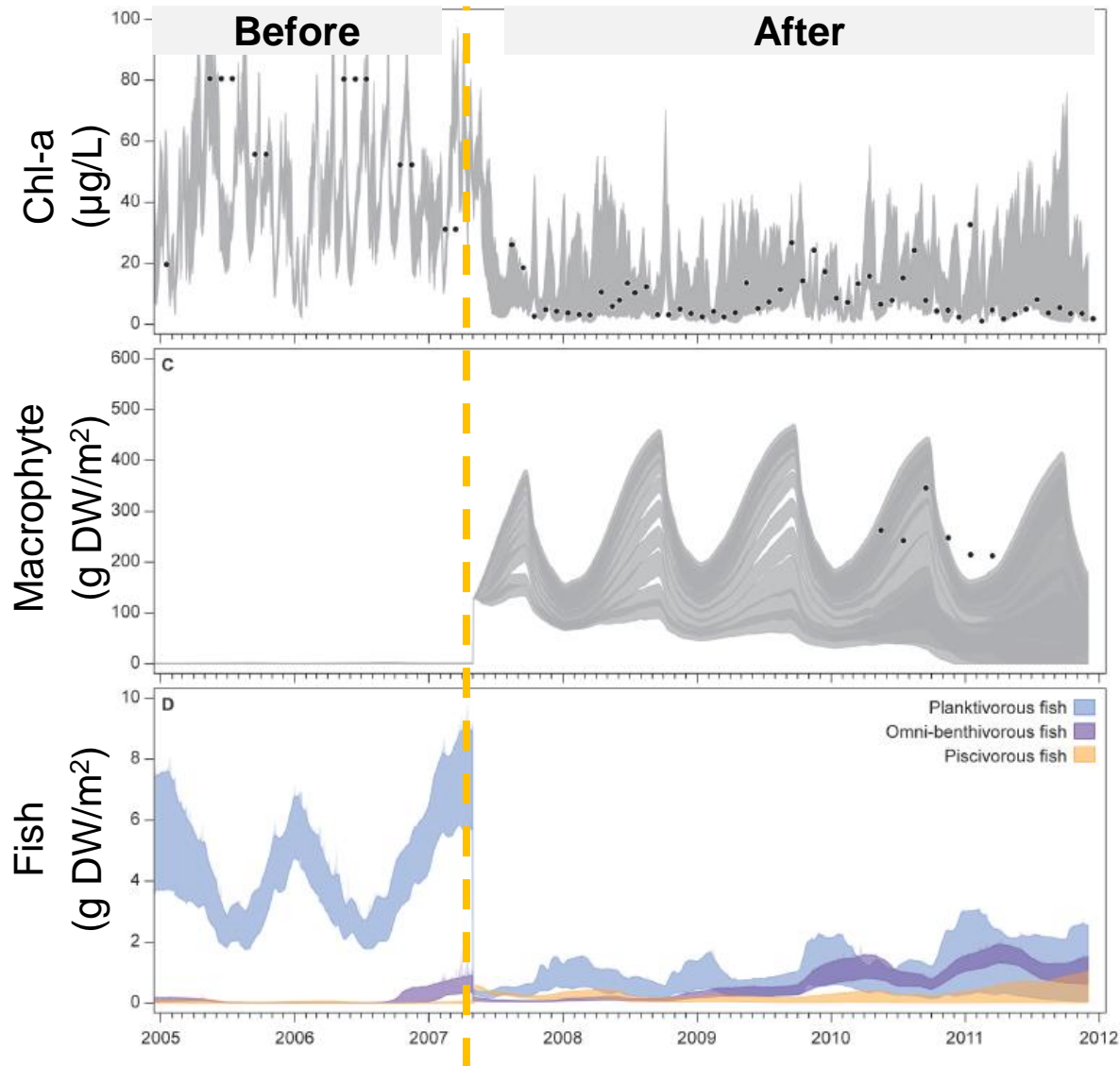
Chen et al. 2020. Water.

Seek the edge of possibility: Reproduce restoration methods, Lake Fure, DK

No oxygenation



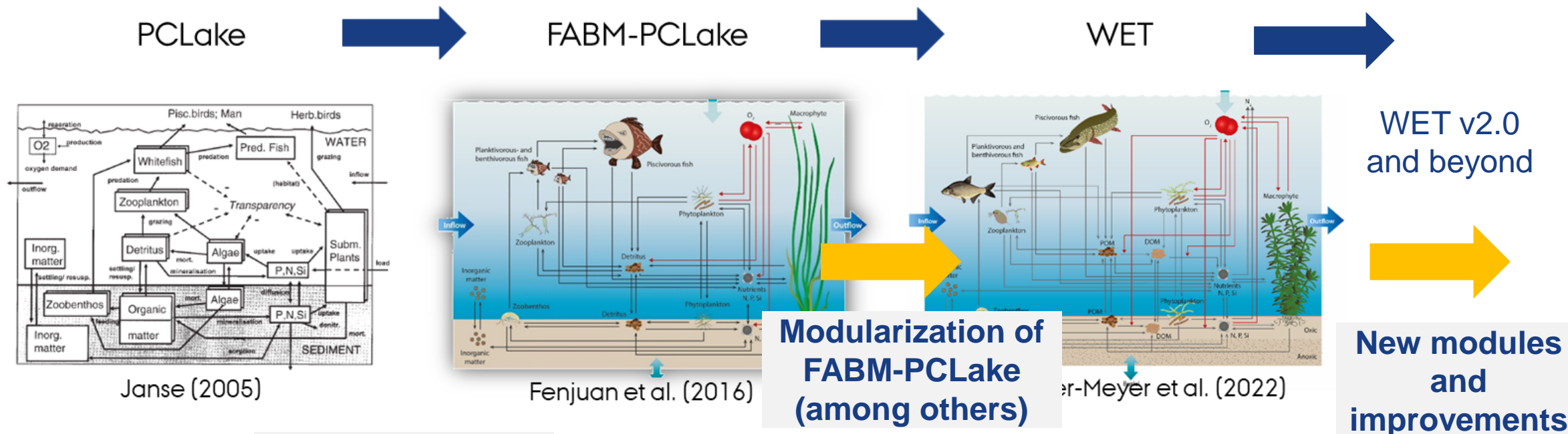
Seek the edge of possibility: Reproduce restoration methods, Huizhou West Lake



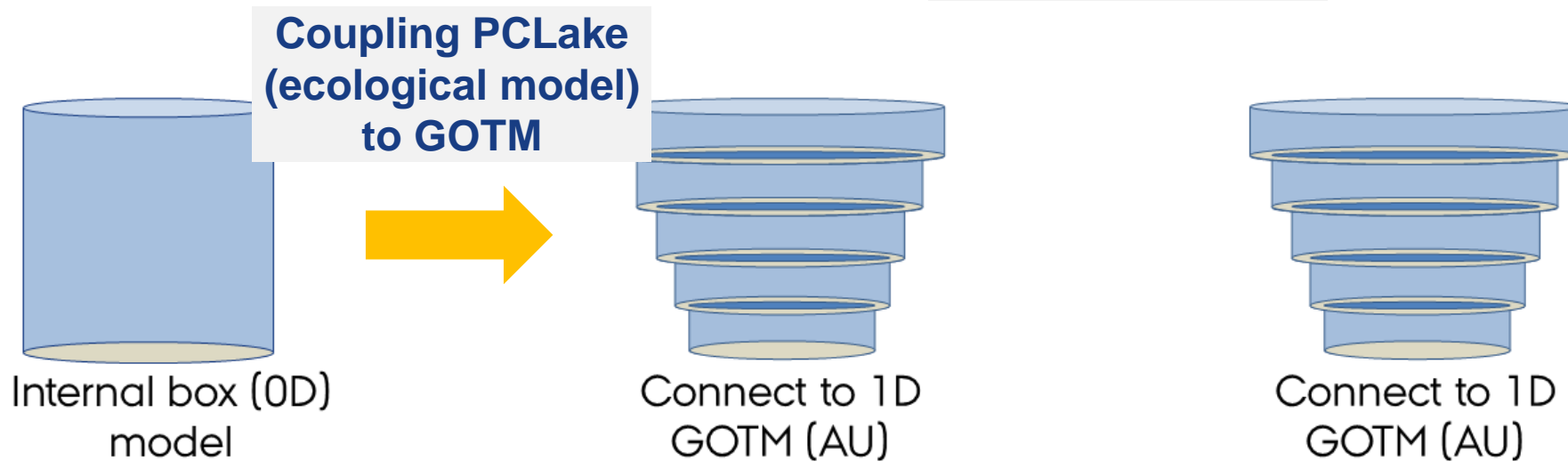
Observations from Gao et al. (2014)

Development of WET

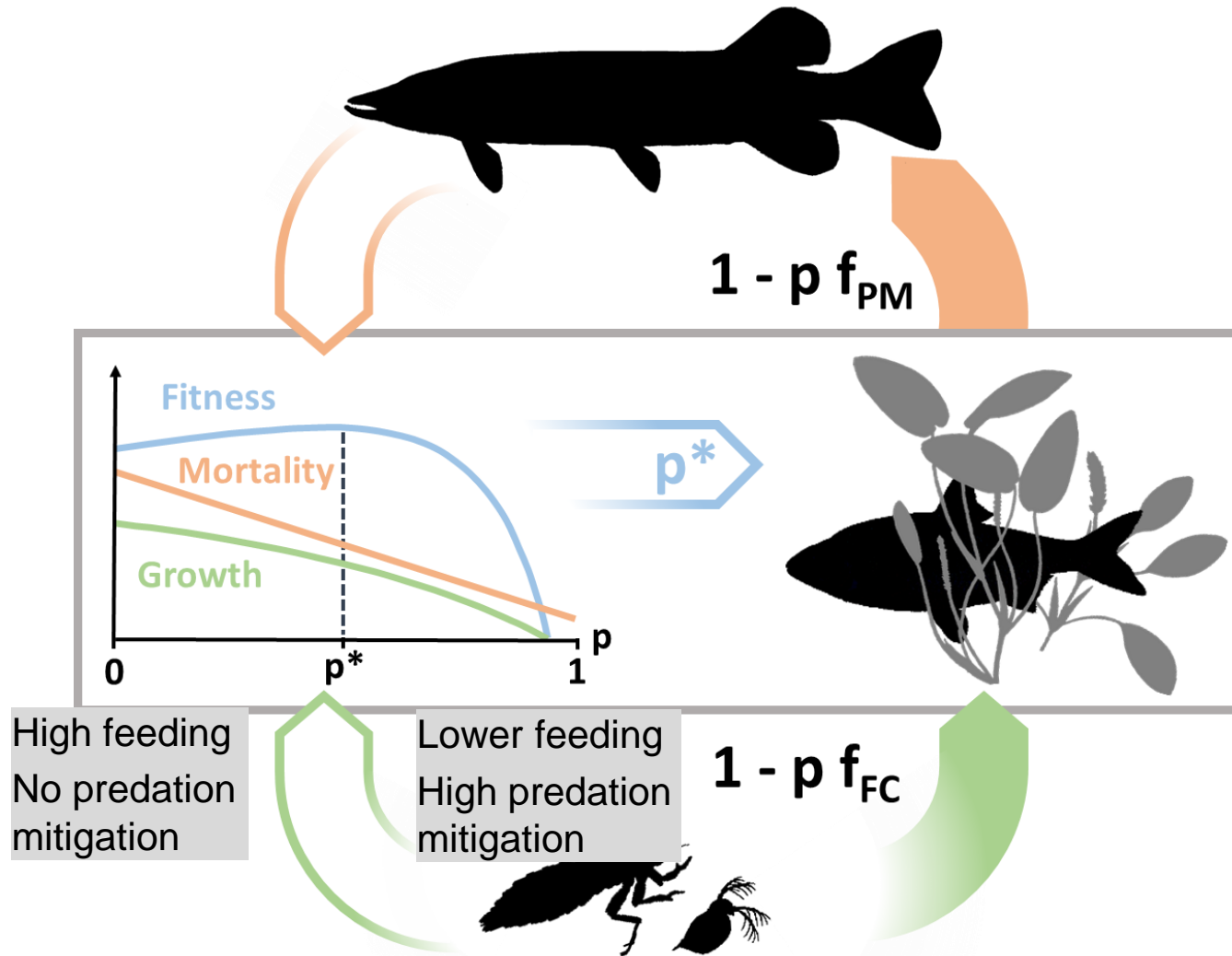
Biogeochemical



Physical

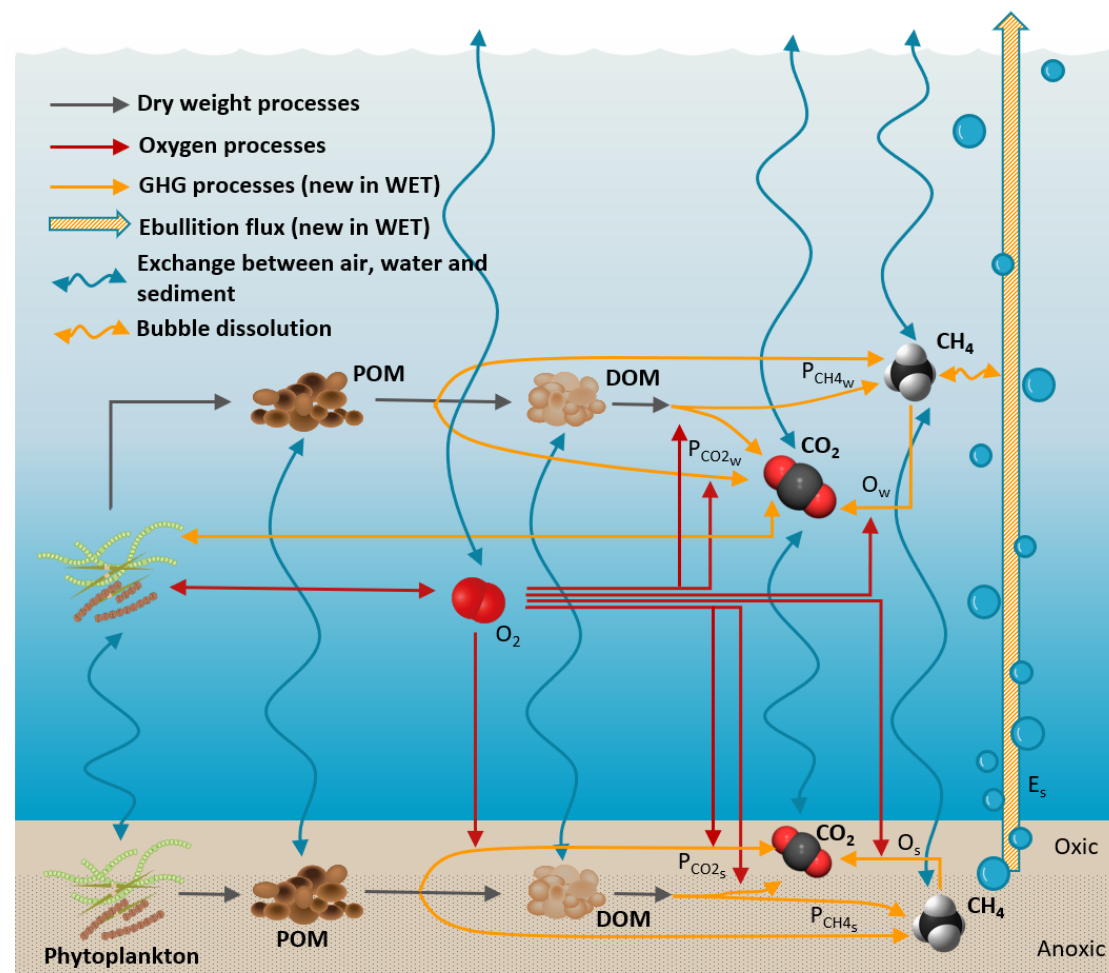
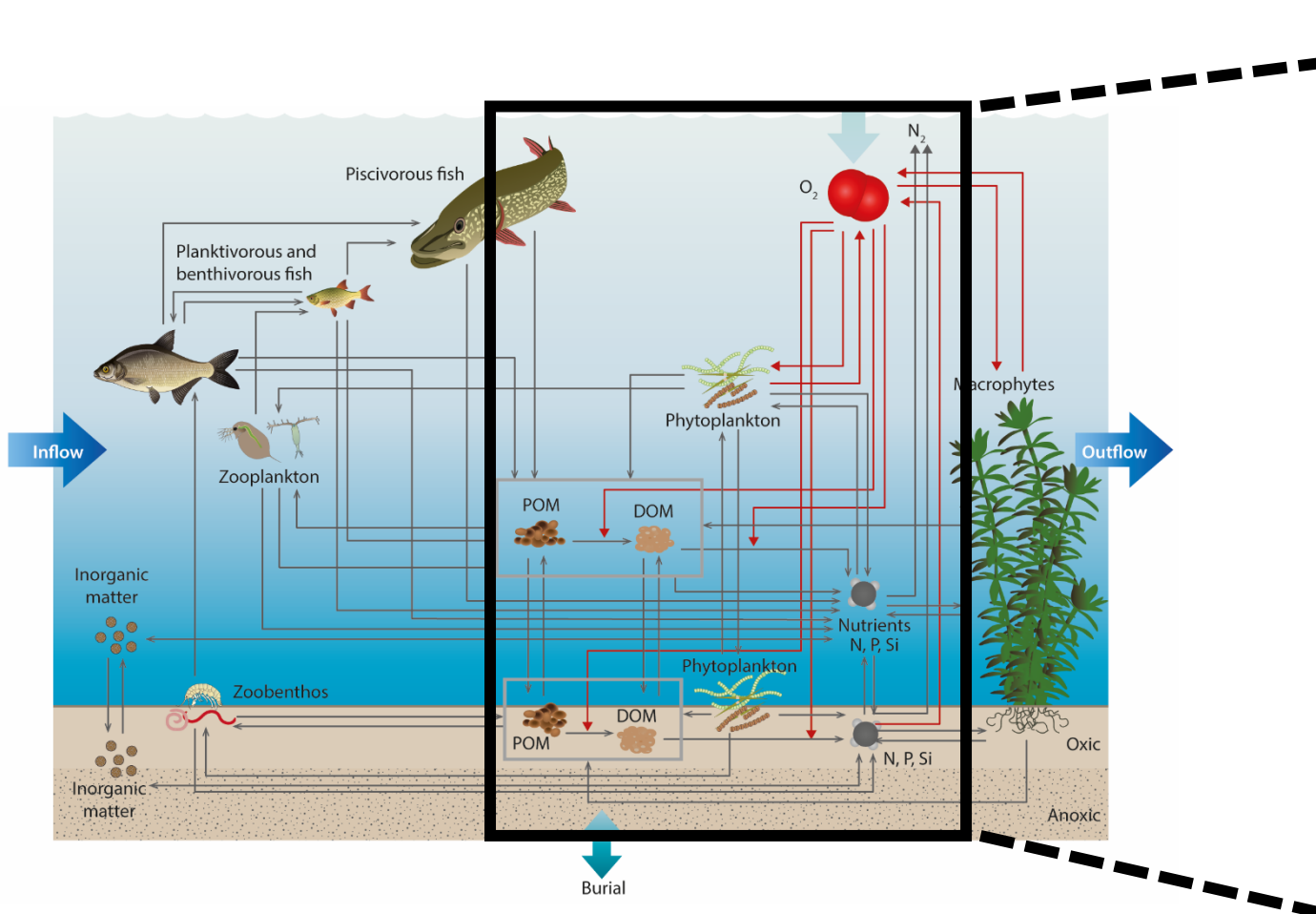


Fish Optimal Behavior Model (OBM)

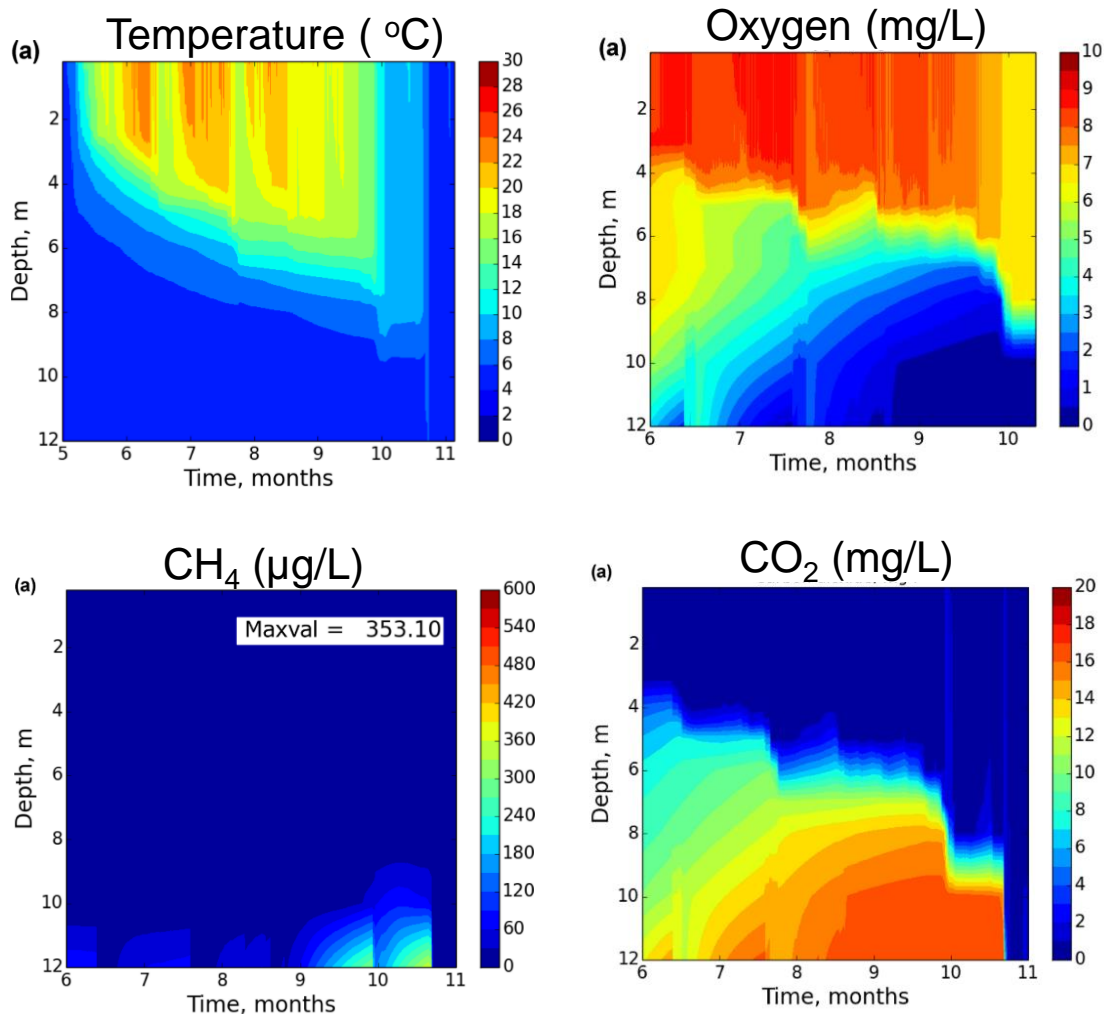


Schnedler-Meyer & Andersen (2024) Ecology and Evolution

Developing GHG module for WET

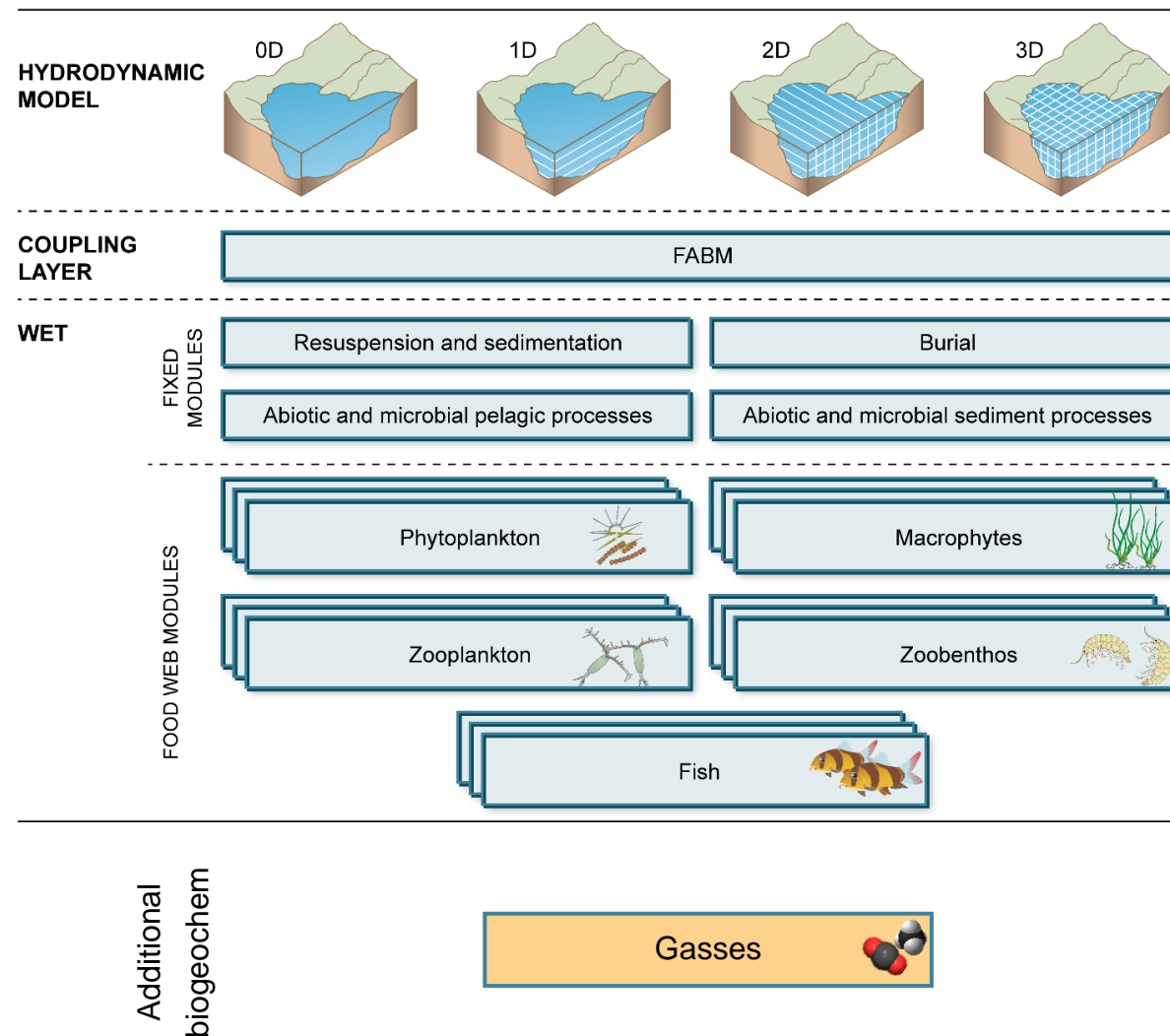


Reproducing GHG in lakes

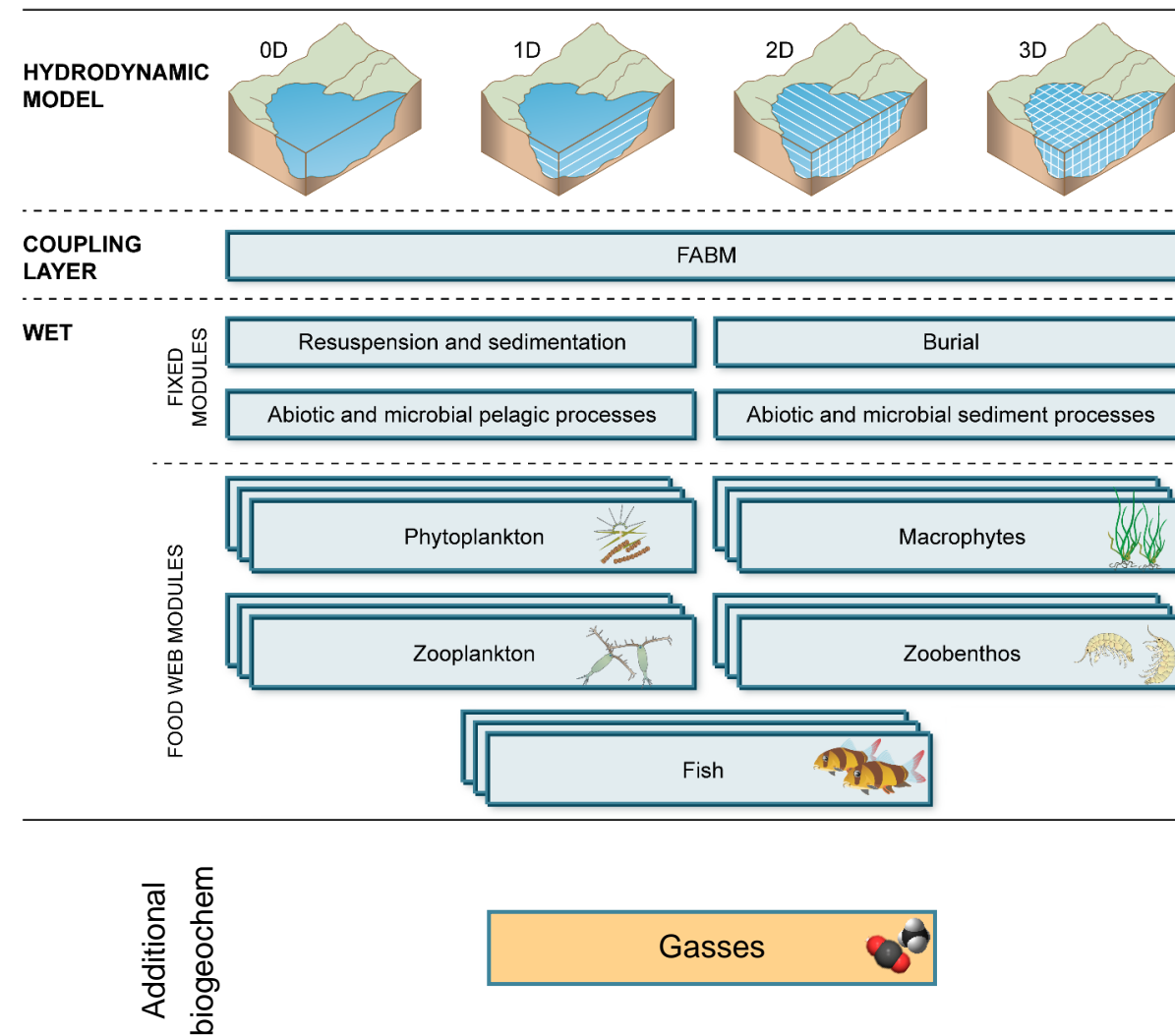
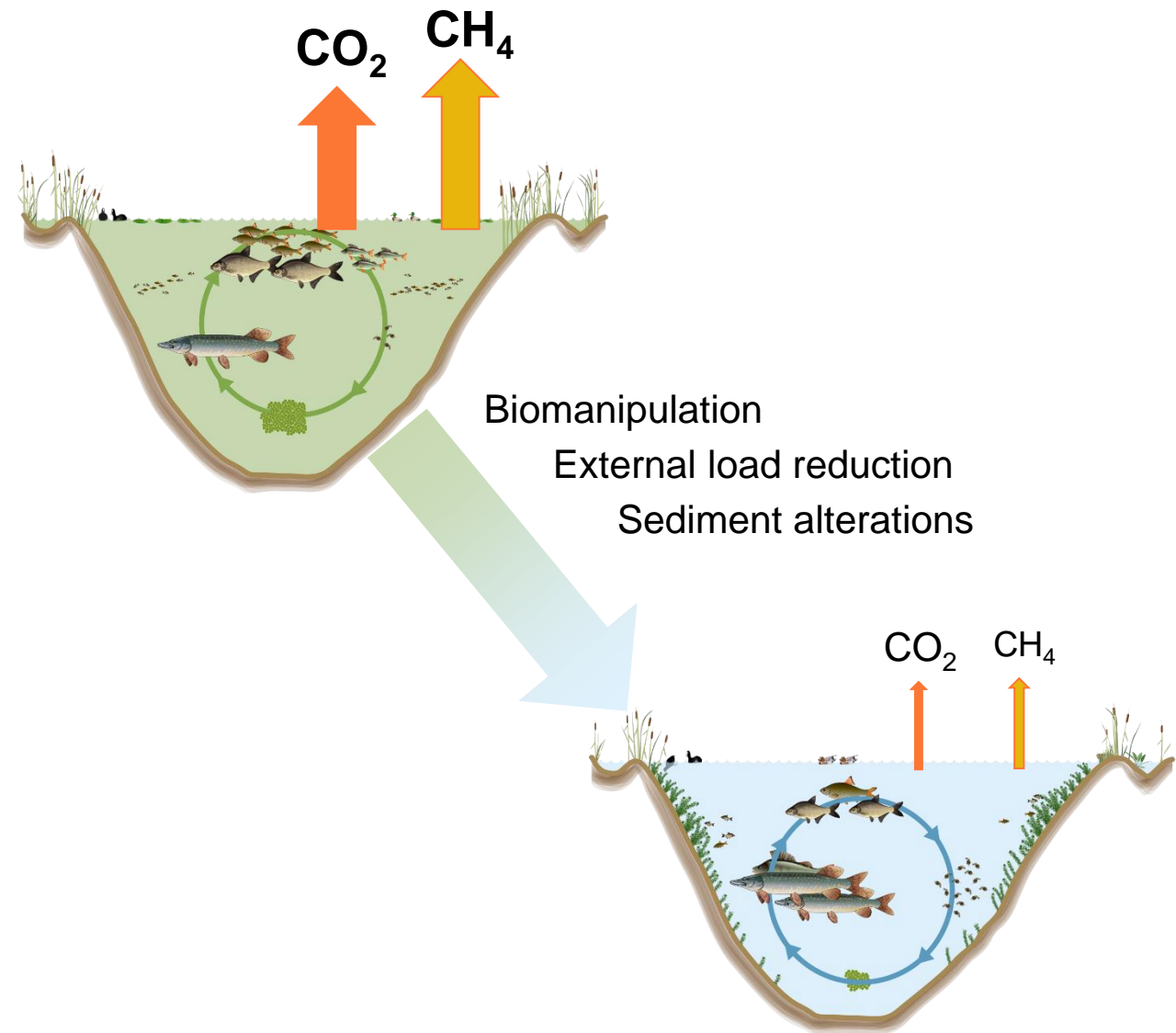


Model results from Lake Kuivajärvi

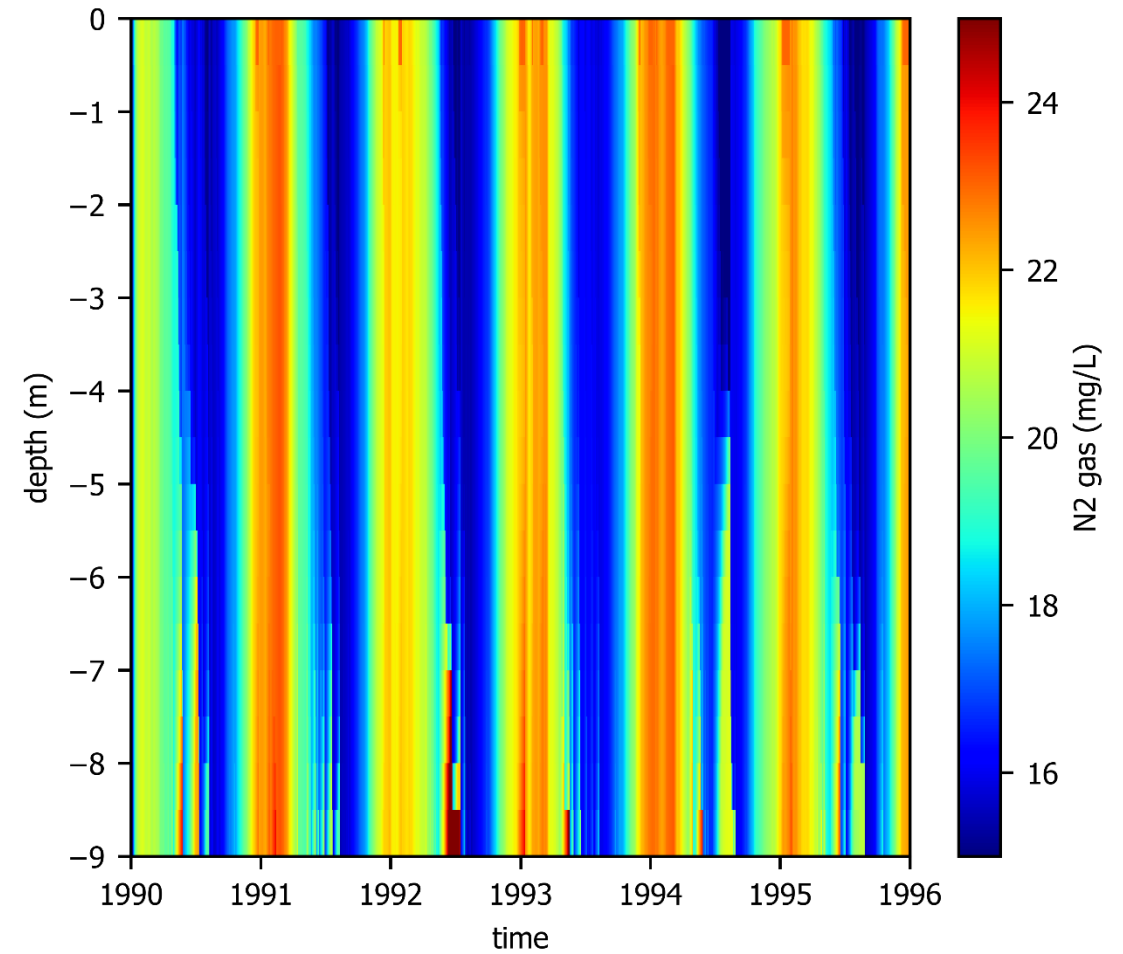
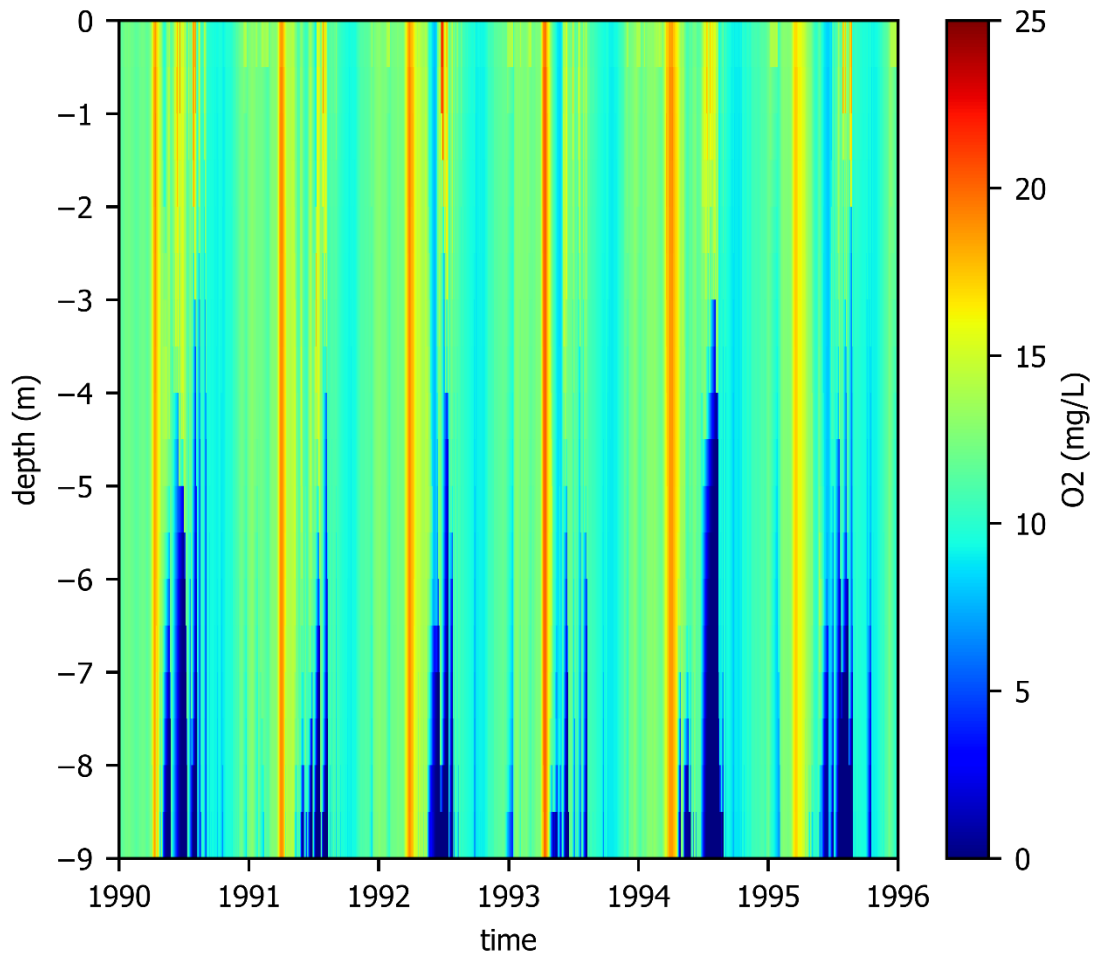
Stepanenکو et al. 2016



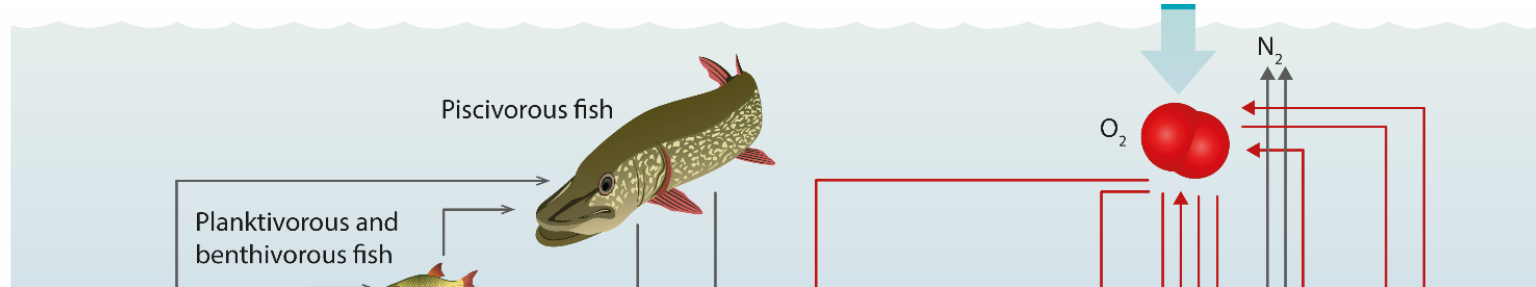
Simulating GHG under lake restorations



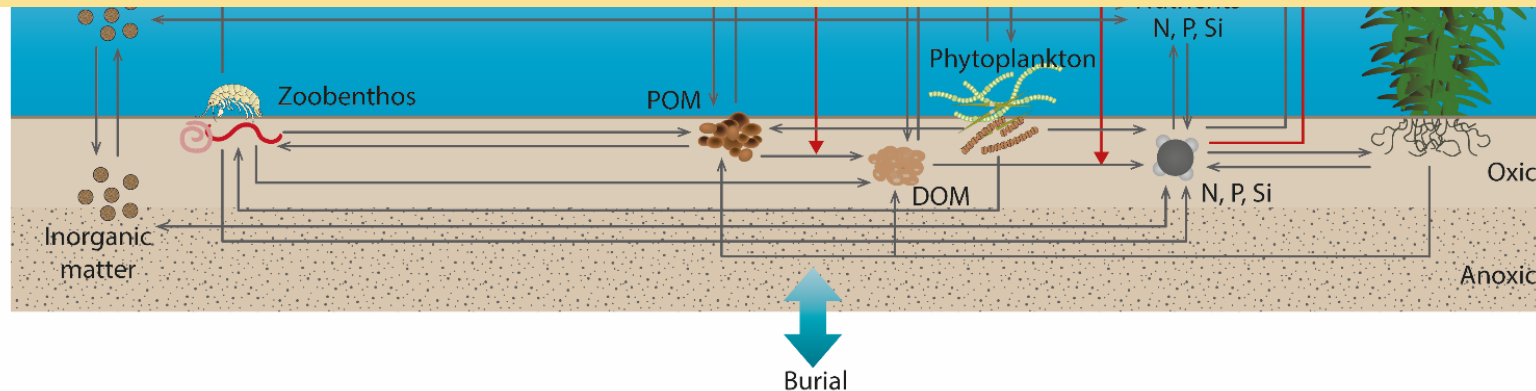
In development:



WET (Water Ecosystems Tool)

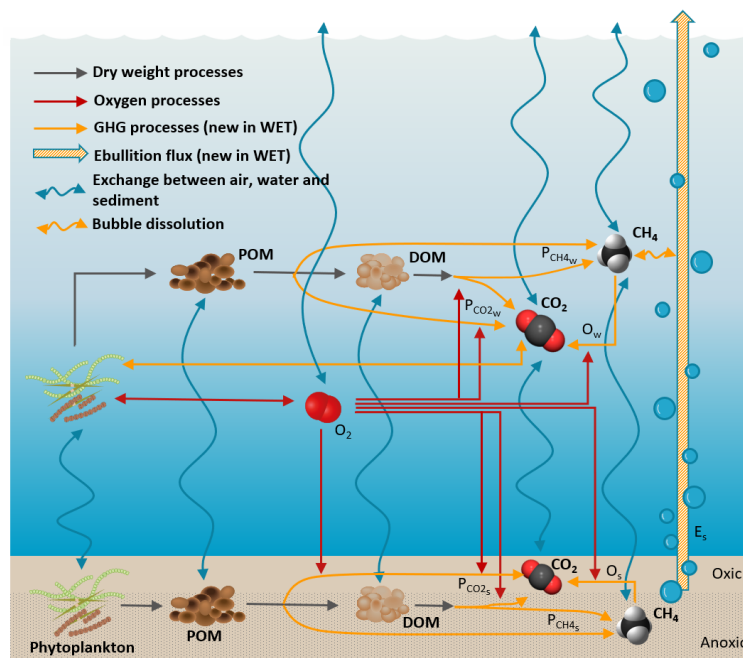


WET IS OPEN SOURCE, EVERYONE CAN
ACCES AND APPLY GOTM-WET
CONTRIBUTE TO MODEL DEVELOPMENT





Schnedler-Meyer & Andersen (2024) Ecology and Evolution



Green house gases



Mussel module