

# Greenhouse gas emissions from lakes

***Arianto Budi Santoso***

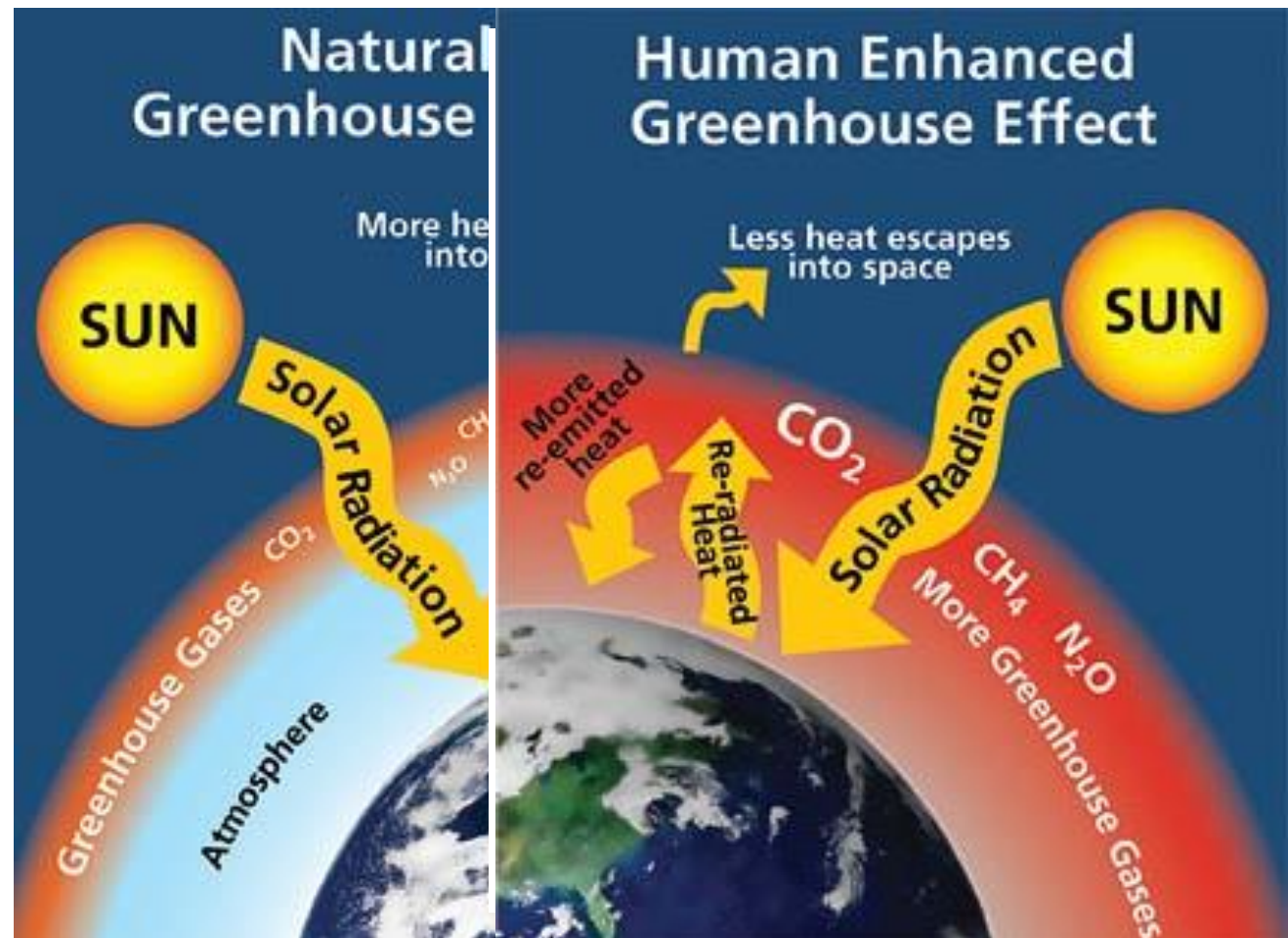
***&***

***David Hamilton***

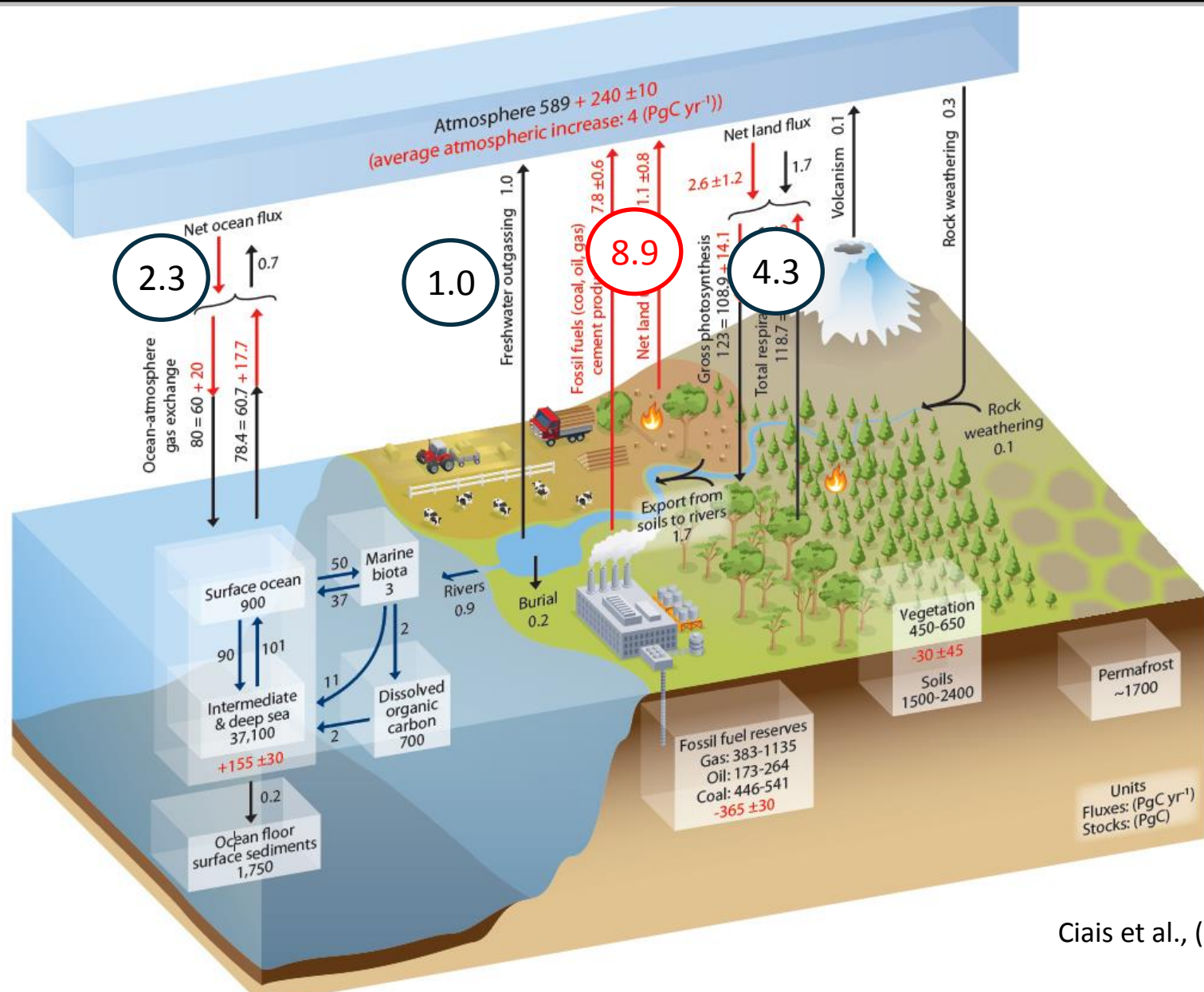


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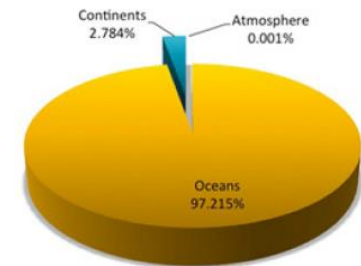
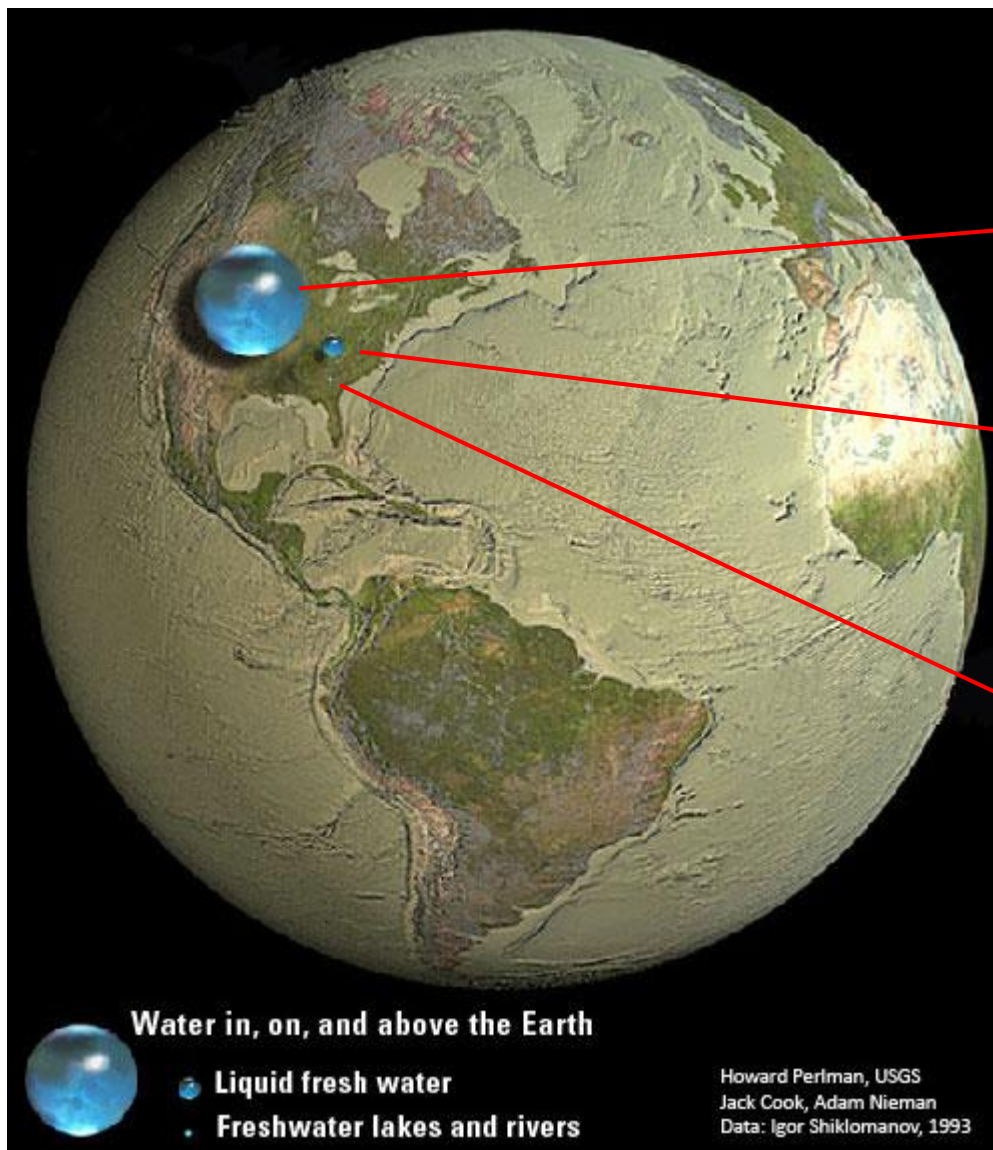
# Greenhouse gas and global warming



# Global carbon balance



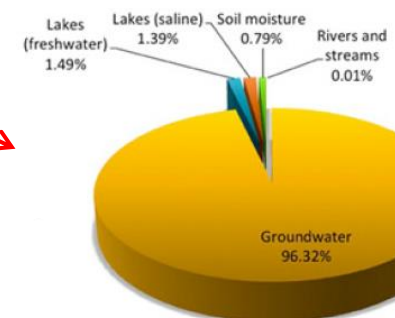
# How much our water on Earth?



All water



Continents

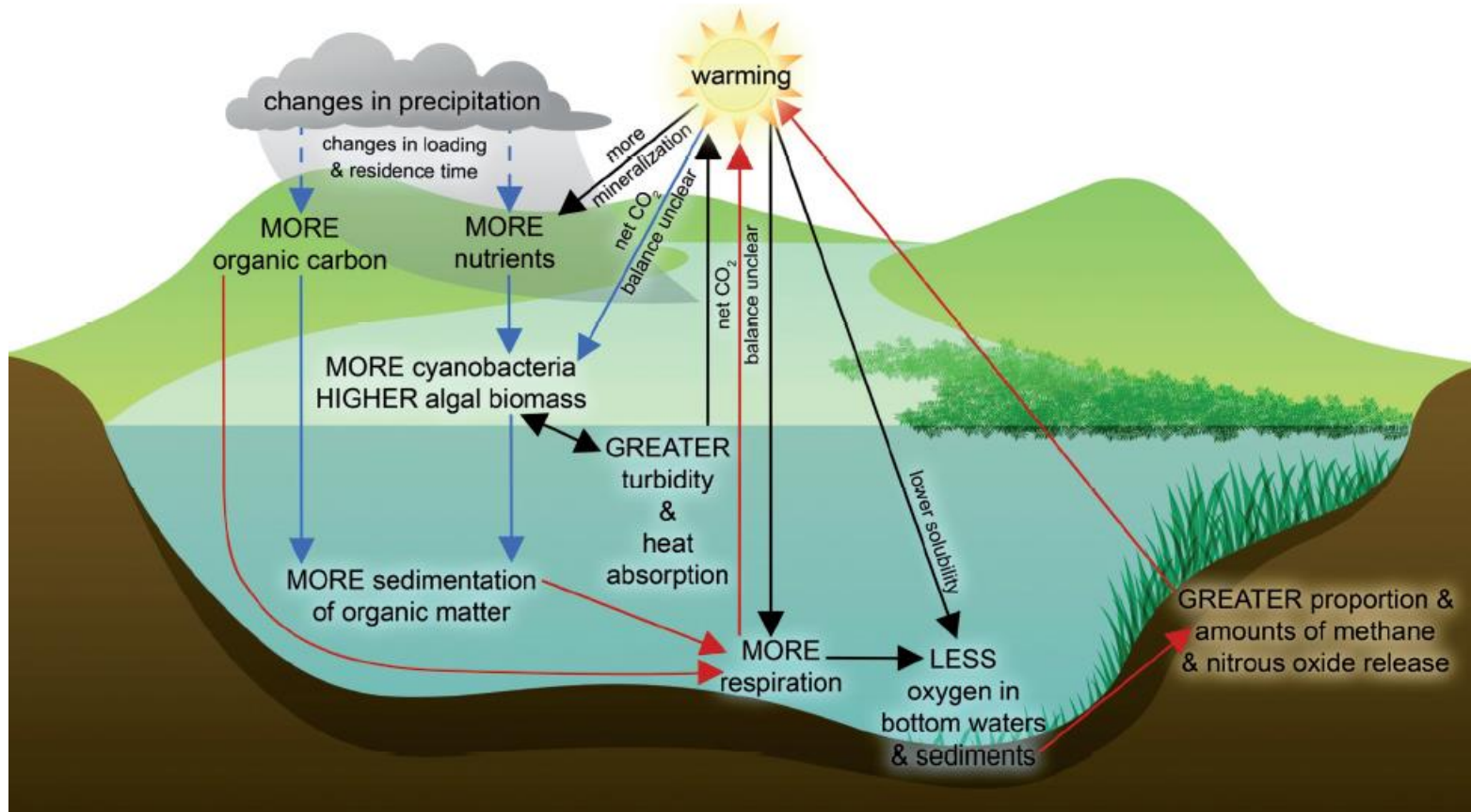


Liquid on continents

(van der Leeden (1990) in Downing, 2014)



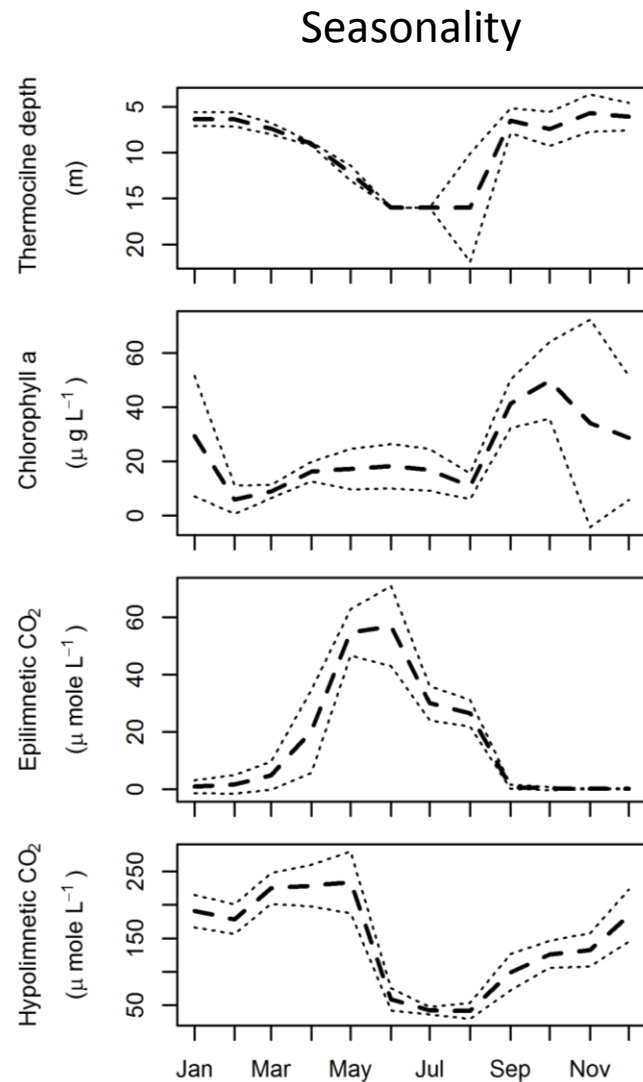
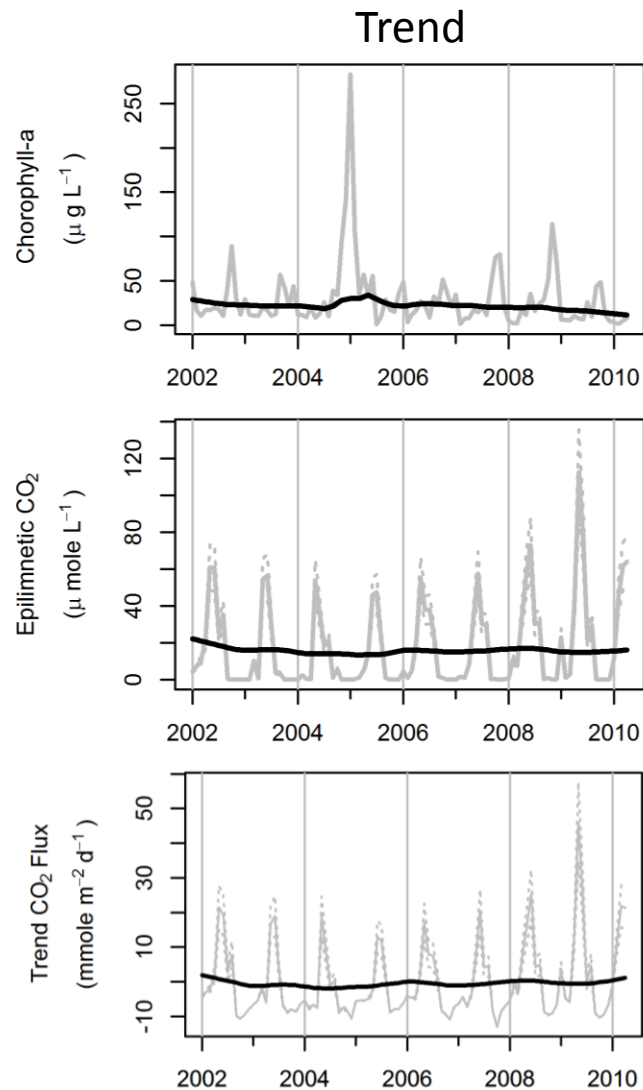
# Climate change and eutrophication in lakes



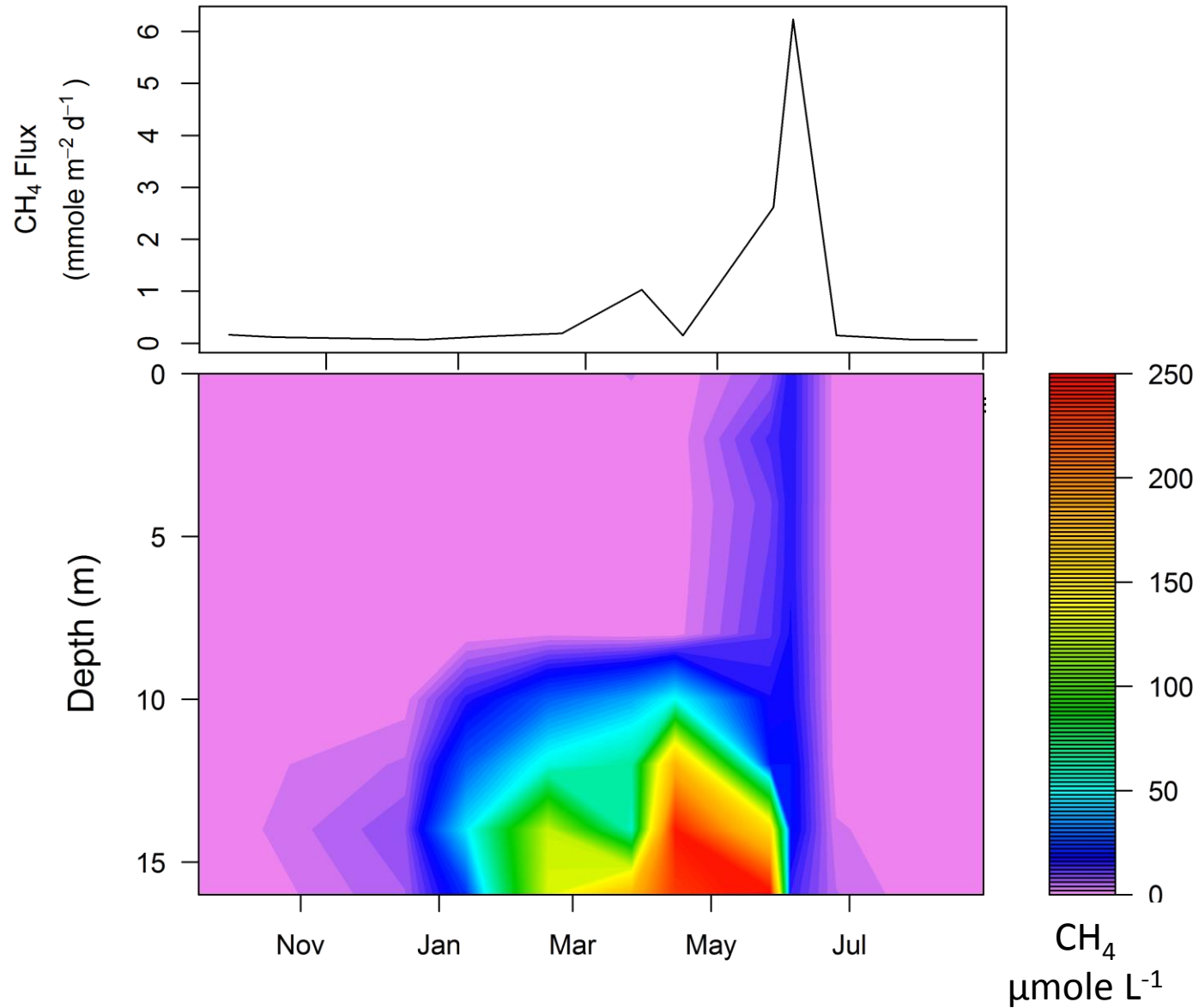
“People tend to focus on CO<sub>2</sub> emissions...but the reality is that for an agricultural country like NZ CH<sub>4</sub> and N<sub>2</sub>O emissions are much more important”  
-Dr Joseph Lane (UoW)

Moss et al. (2011)

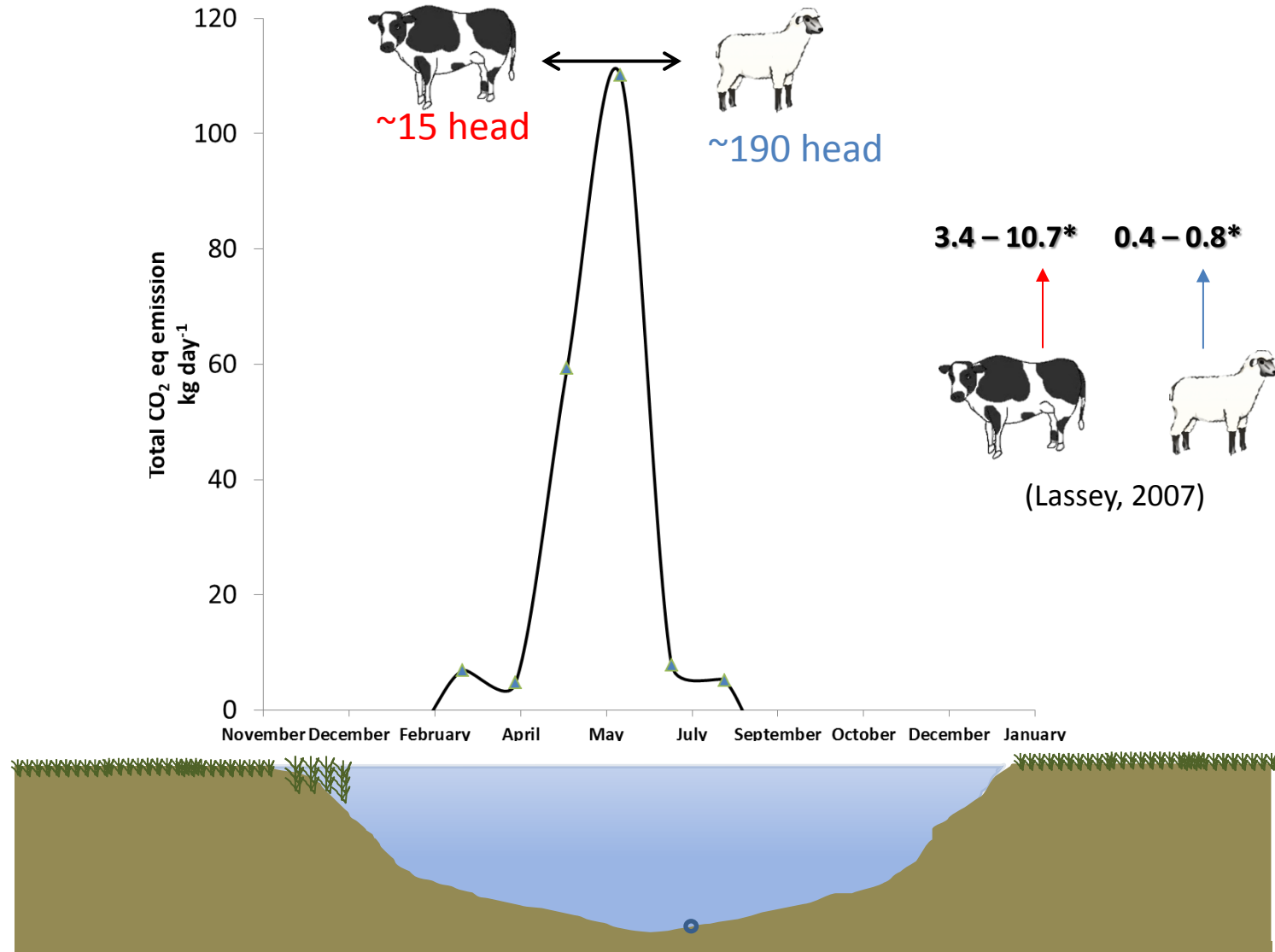
# CO<sub>2</sub> flux from Lake Okaro: Seasonality and trend



# CH<sub>4</sub> emission from Lake Okaro: Seasonality



# Greenhouse gas emission (CO<sub>2</sub>eq) from Lake Okaro





# Acknowledgement

- Joseph Butterworth

