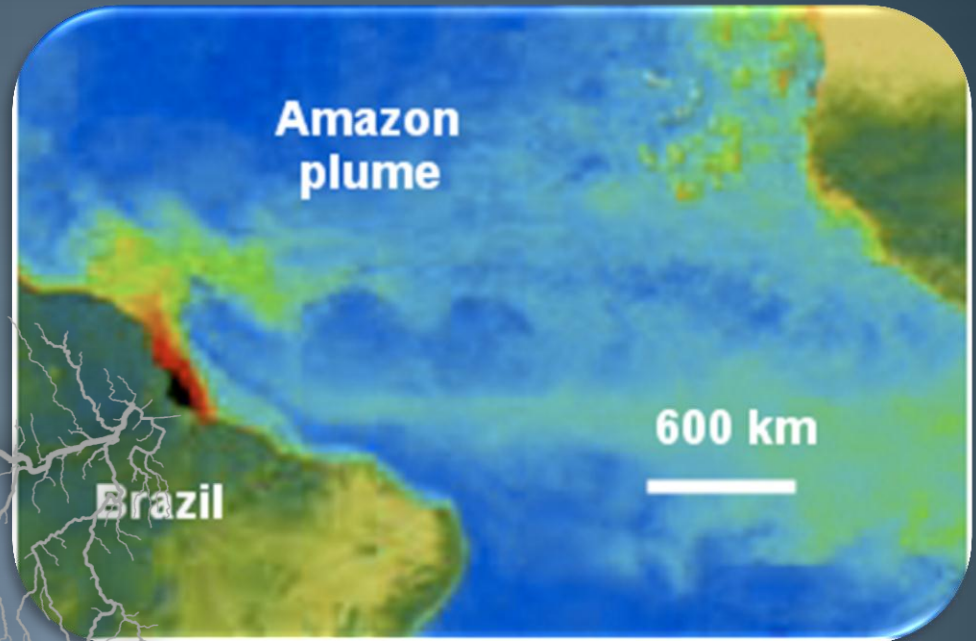


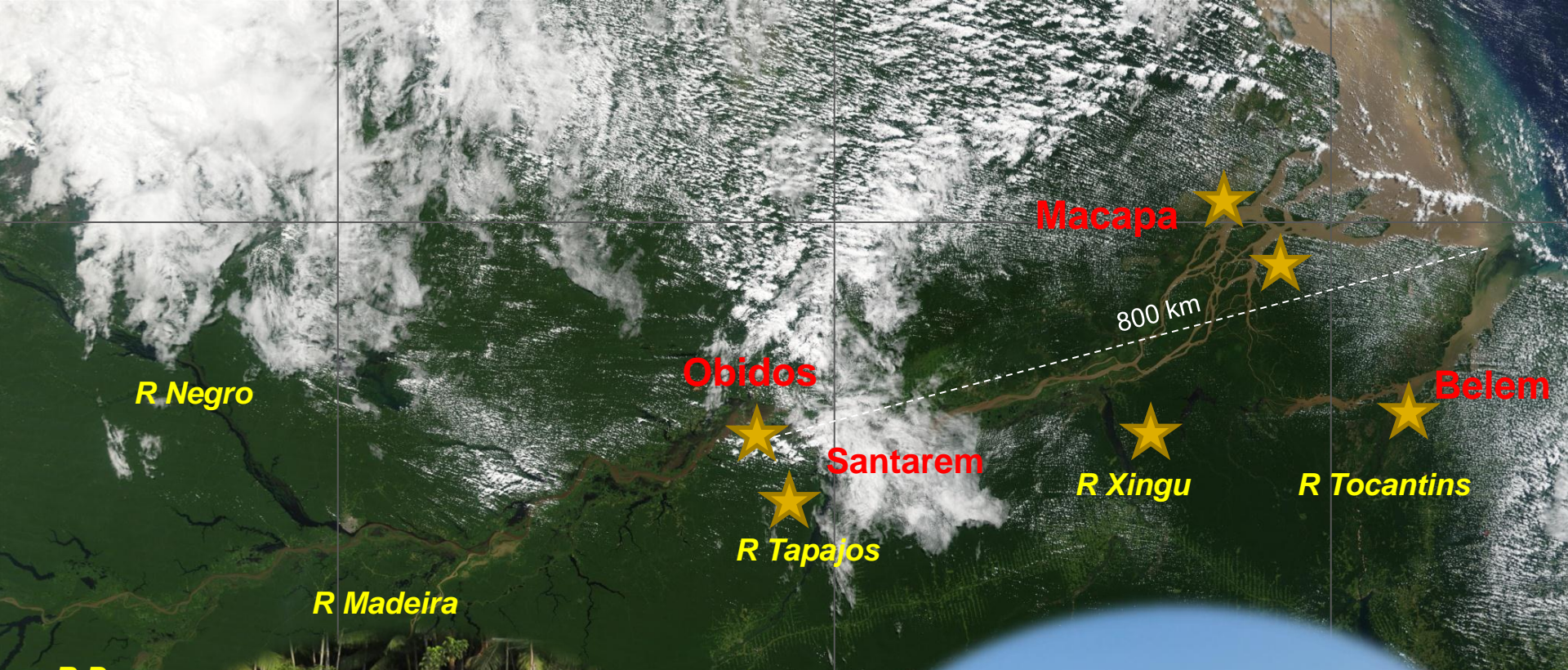
# The Hydrologic and Geochemical evolution of the lower Amazon River



<sup>1</sup>Nick Ward

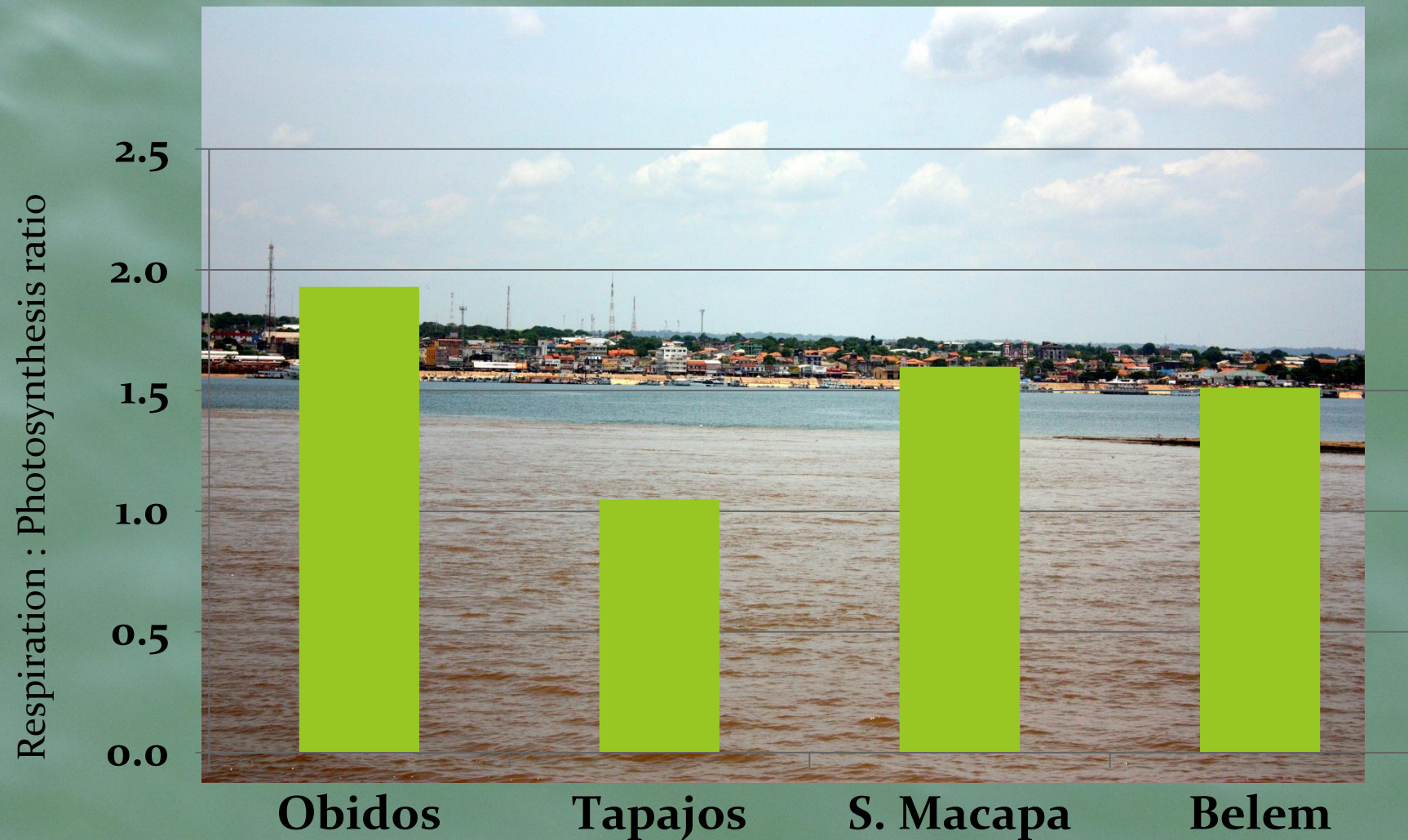
<sup>1</sup>nickward@uw.edu





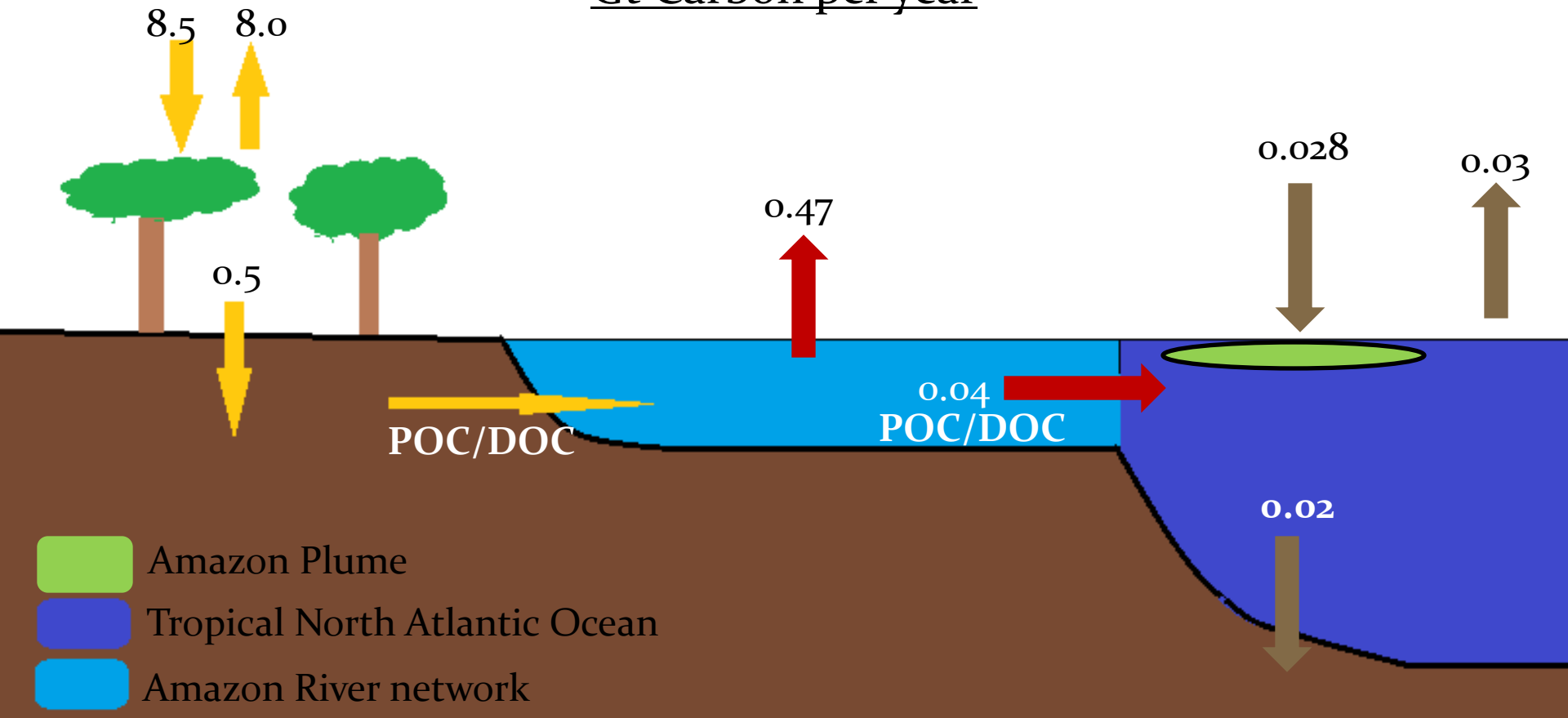


# Tapajos meets mainstream



# Carbon Budget--Amazon Basin

Gt Carbon per year

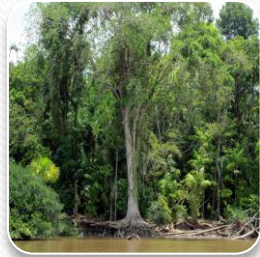
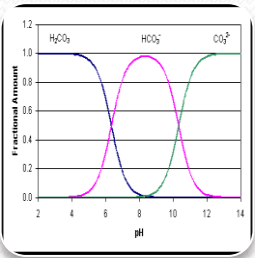






# Carbon Cycling Parameters

## --Inorganic--



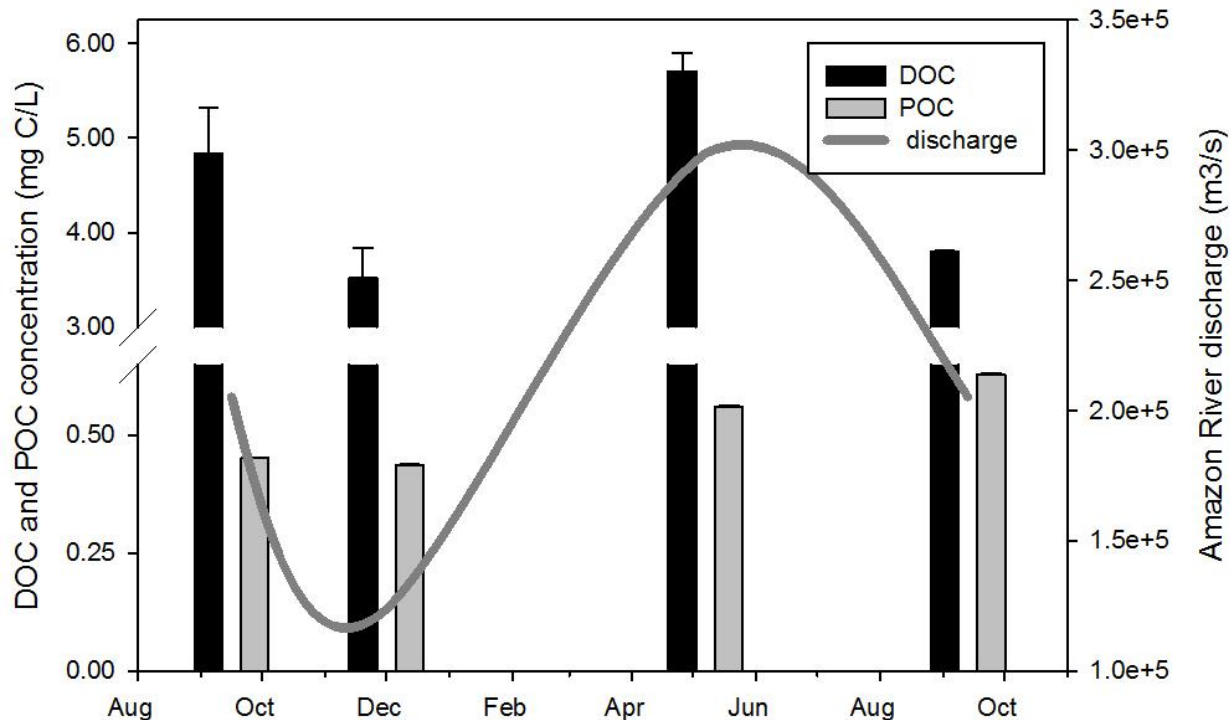
**DIC**

**$^{13}\text{C}$  and  $^{14}\text{C}$   
isotopes**

**$\text{pCO}_2$**

**$\text{CO}_2$   
Outgassing  
Flux**

# Bulk Organic Carbon export

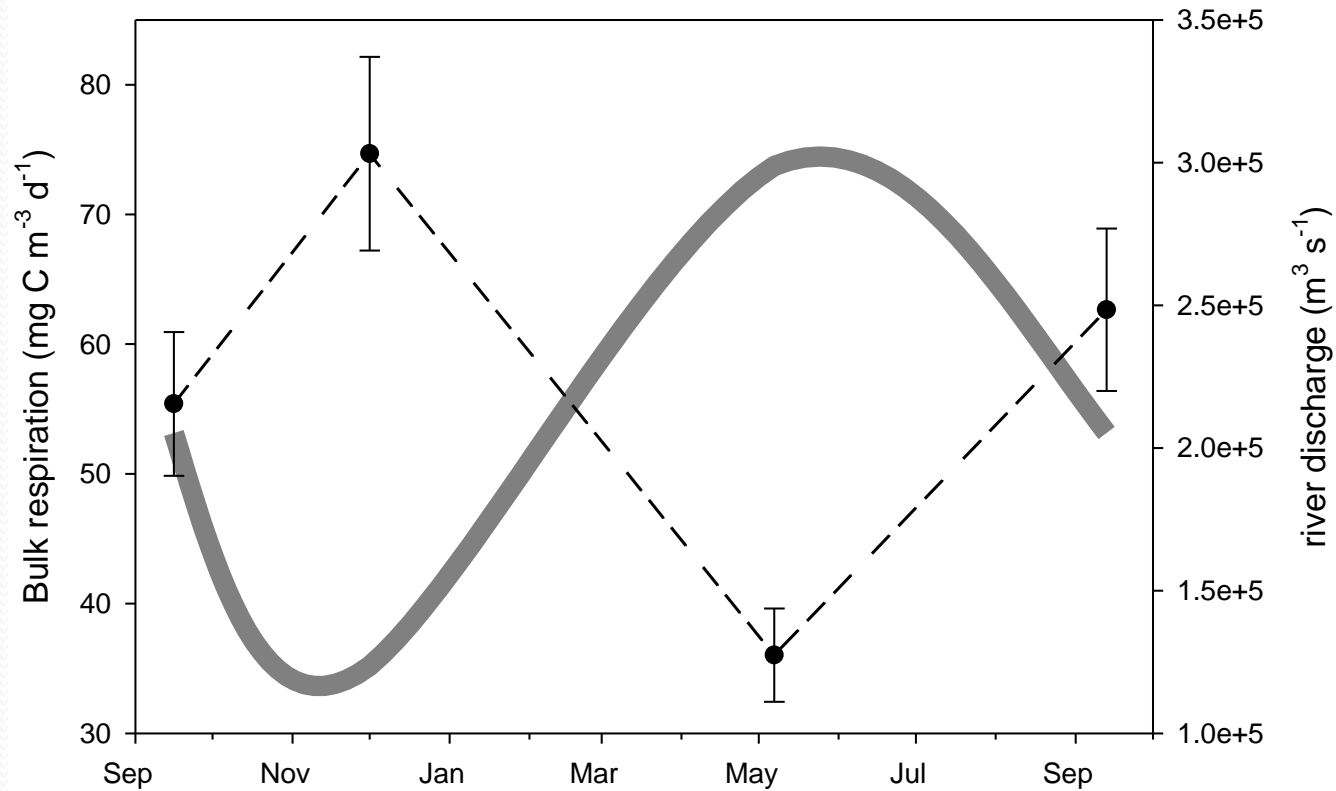


Total Annual Carbon Flux to the Ocean: 33 Tg C yr<sup>-1</sup>

**90% DOC**

**10% POC**

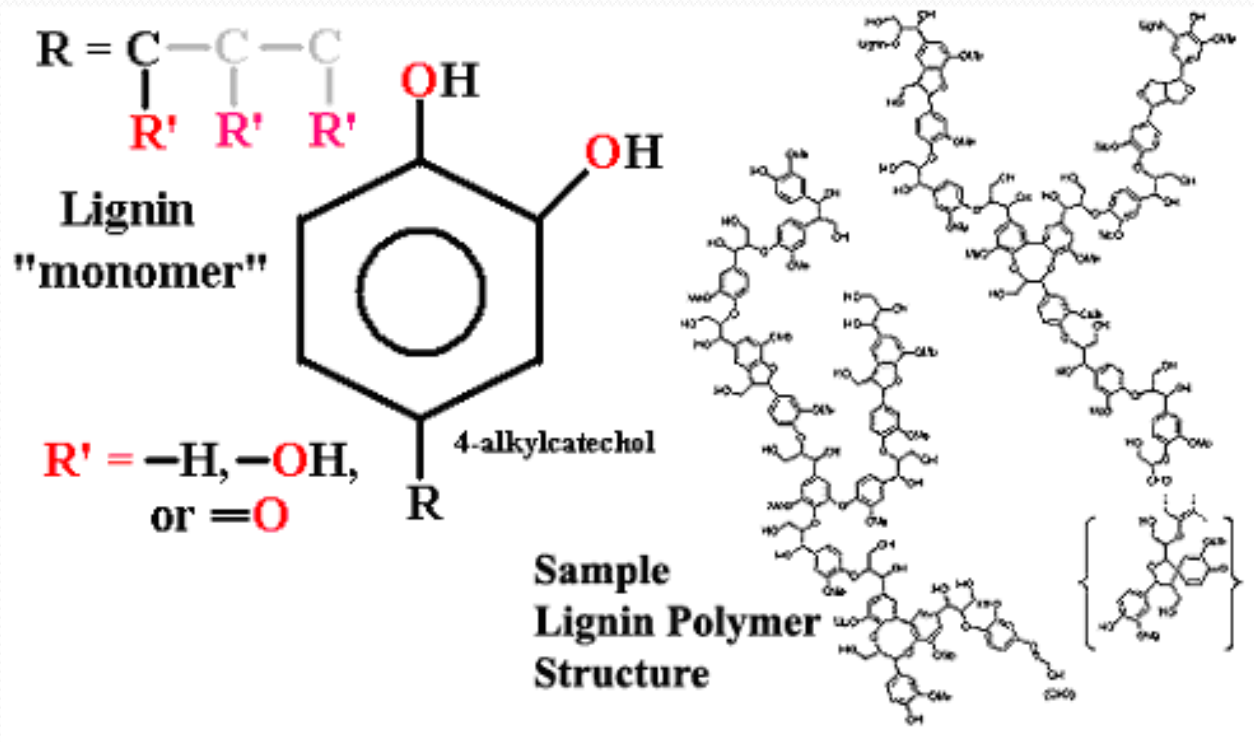
# What happens to OC as it travels downstream?



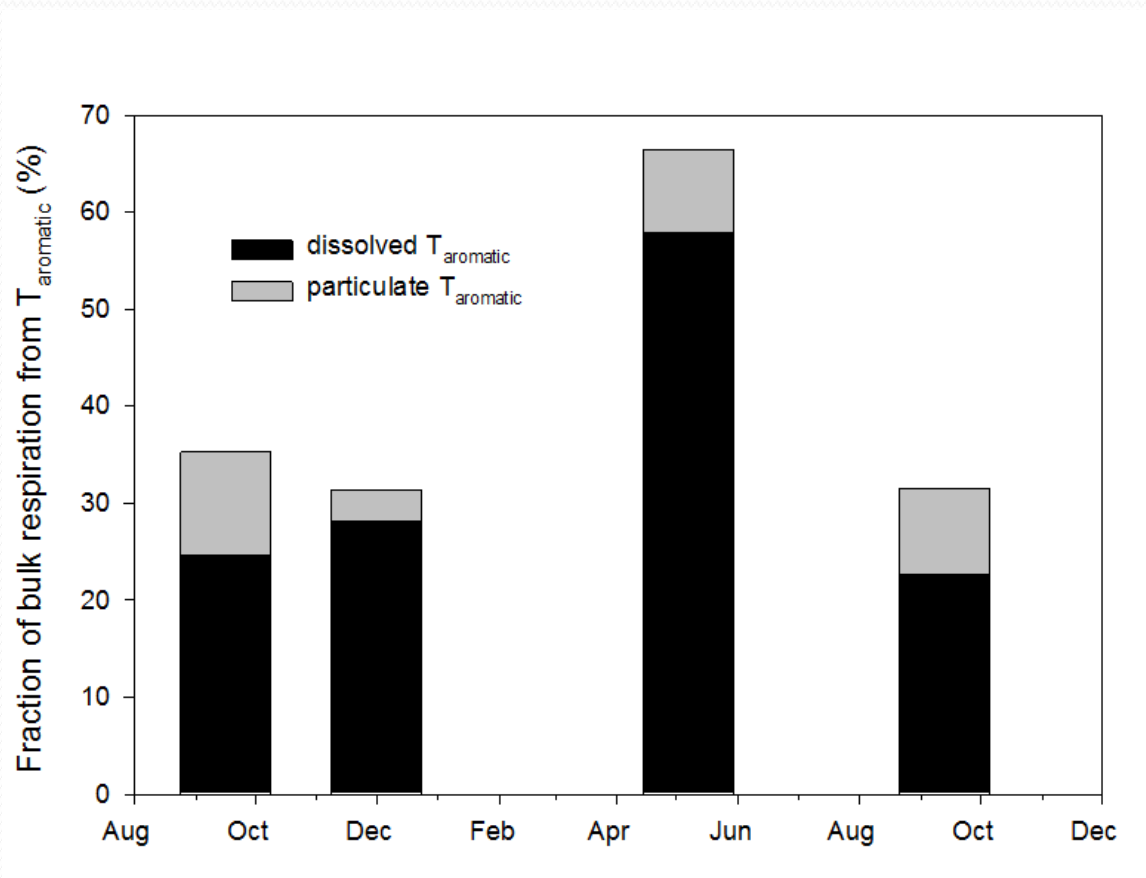


# What type of OC compounds are respired?

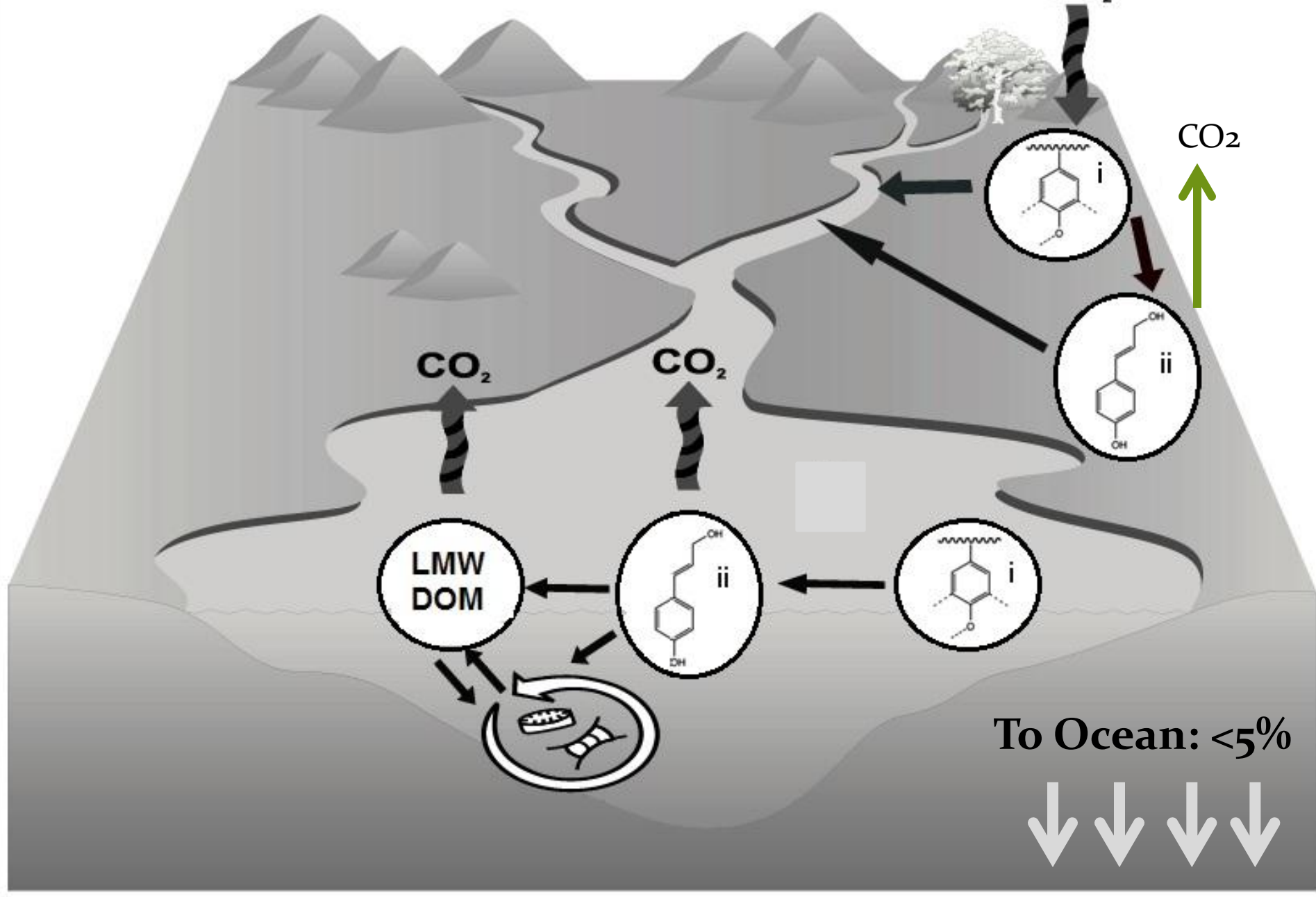
Most abundant biochemicals on land are lignin and cellulose



# What proportion of respired OM is lignin?



Respired in River ~55%, in Soils ~40%





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# 13C-POC isotopic composition

