

# The search for simple indicators of vertical GHG fluxes at Sage Lot Pond



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## OUR ROLE in Carbon Management in Coastal Wetlands: Quantifying Carbon Storage and Greenhouse Gas Emissions by Tidal Wetlands

Are wetlands C sinks or GHG sources?  
What shifts the balance?

N loading

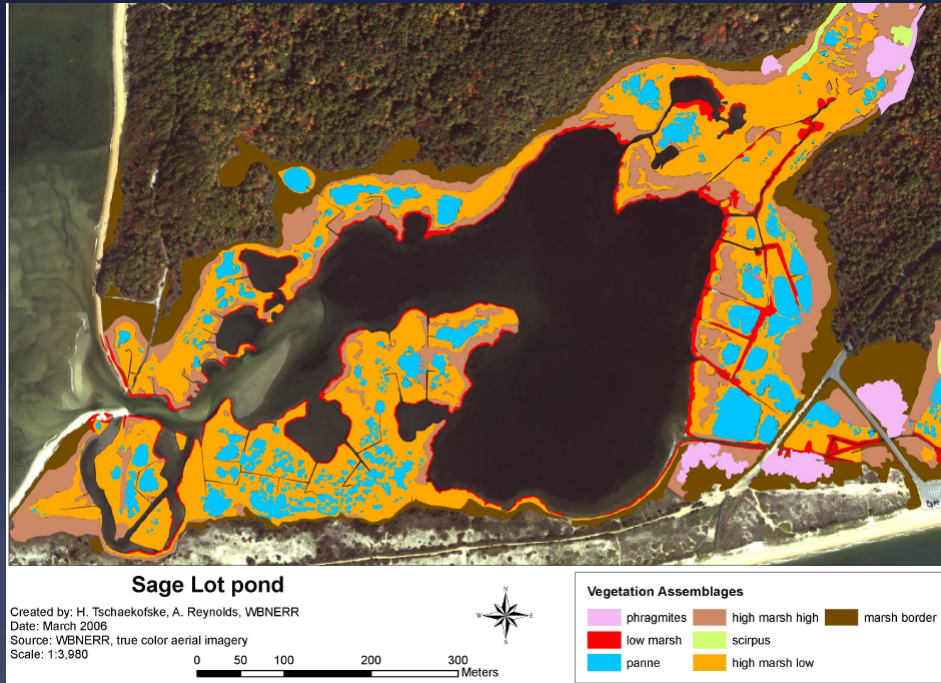
Zonation/Inundation  
(SLR)

Climate  
(Temp., Light,  
Precipitation)

### Waquoit Bay (Cape Cod, MA)

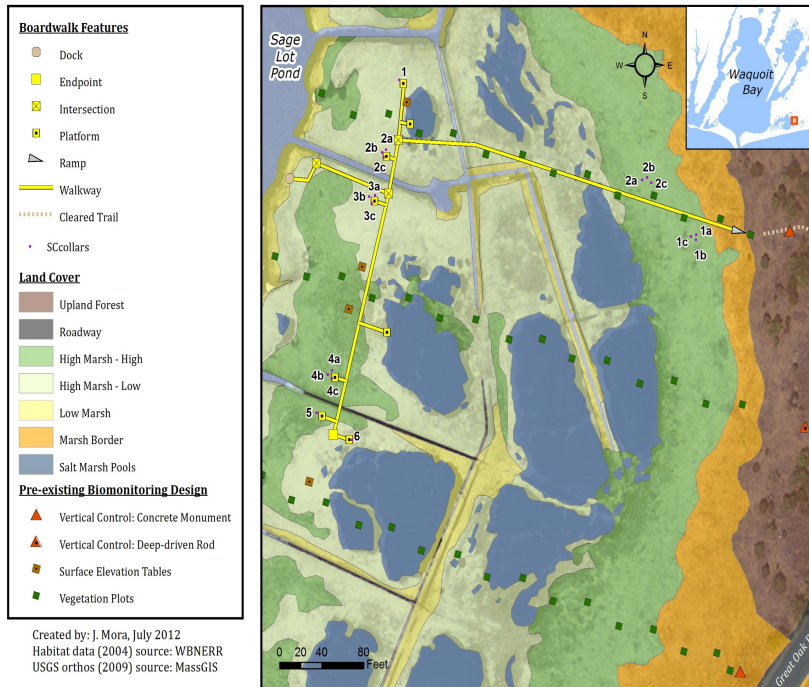


Do GHG fluxes vary predictably with salt marsh zonation?  
And can we predict potential responses of marshes to SLR  
using inundation/elevation gradients?

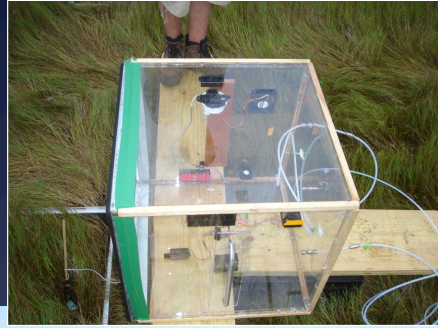


S. Moseman-Valtierre

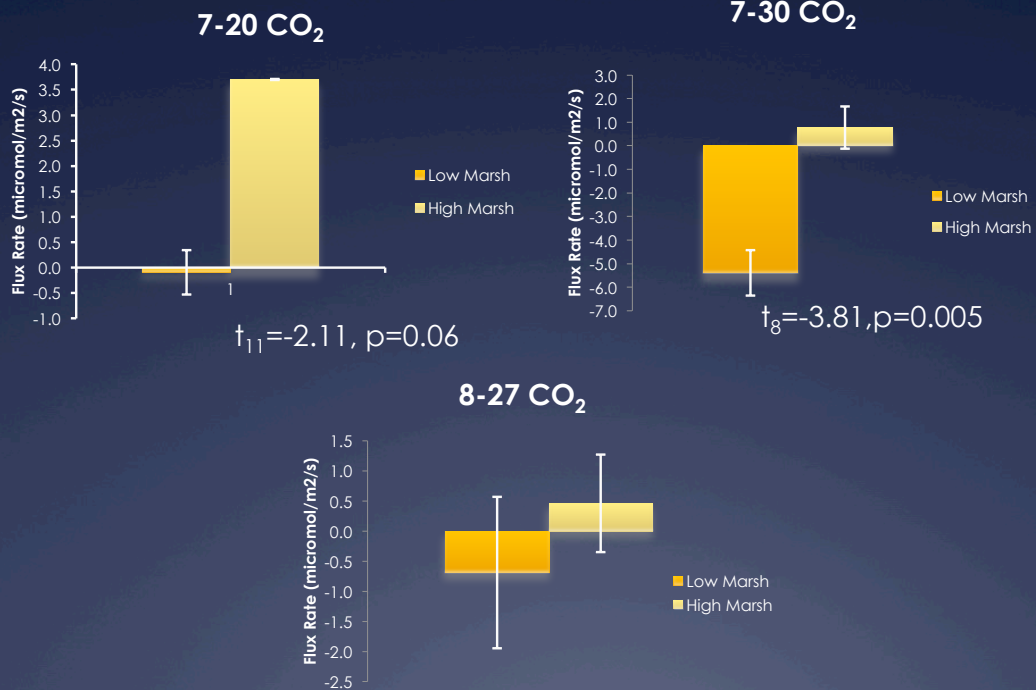
### Waquoit Bay NERR Salt Marsh Observatory Boardwalk



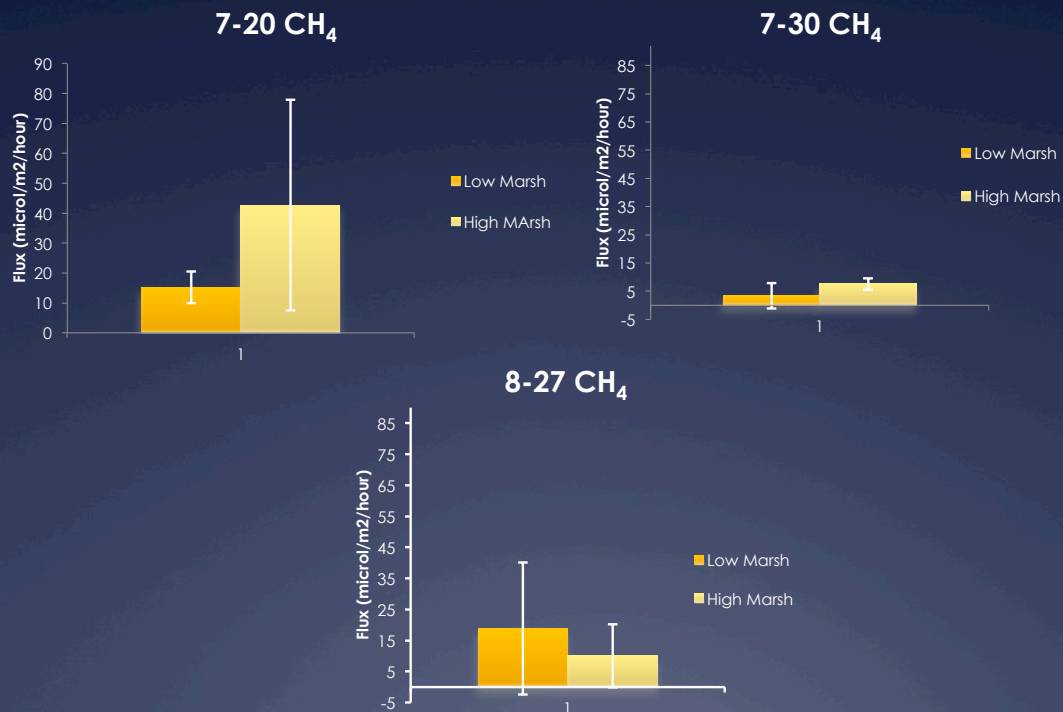




## CO<sub>2</sub> Flux Comparisons between LM and HM

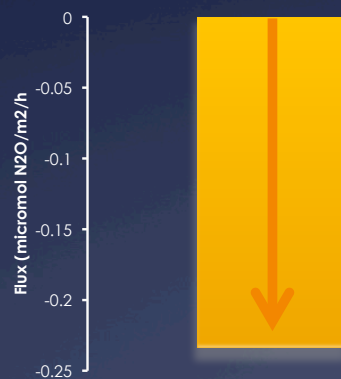


# CH<sub>4</sub> Flux Comparisons between LM and HM

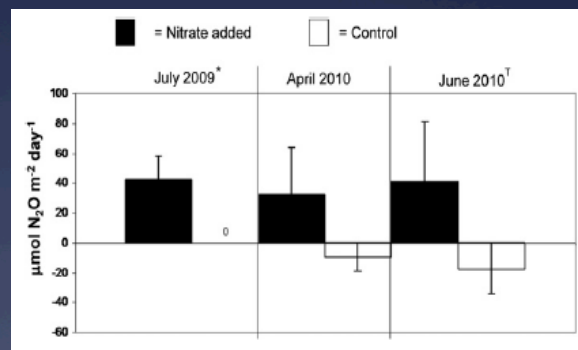


## We also looked at N<sub>2</sub>O...

7-20 HM Plot 4A N<sub>2</sub>O



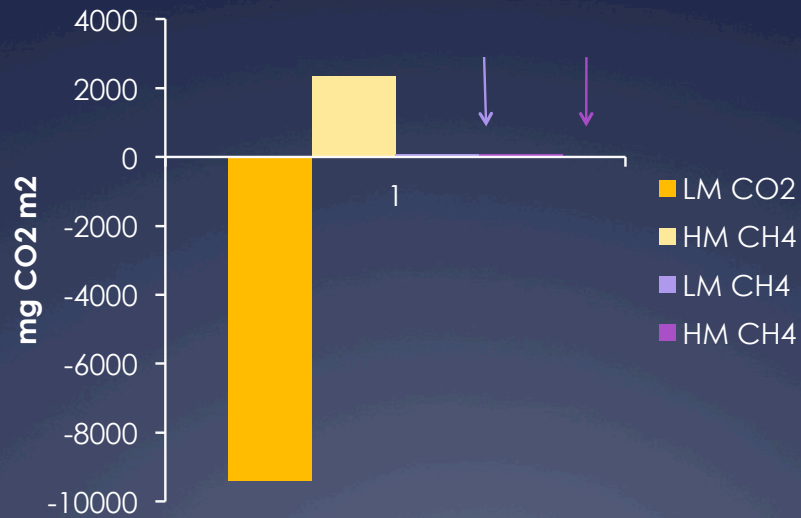
HM Plots 2009 and 2010 N<sub>2</sub>O Fluxes



Moseman-Valtierra et al 2011

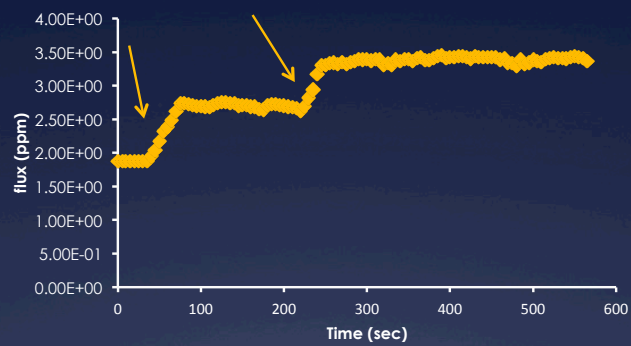


## Comparisons based on global warming potential of CH<sub>4</sub>

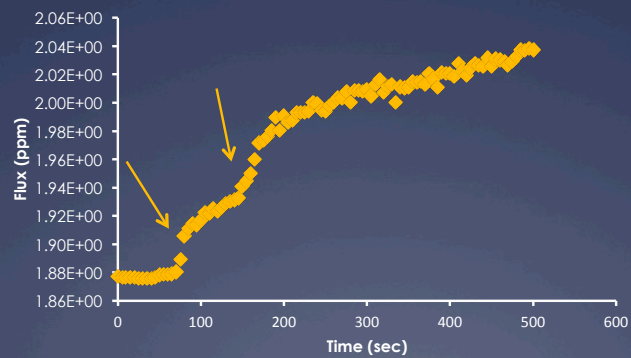


8-27

LM 4B Trial 2 CH4



LM 4C CH4



## Future directions



More data!

## Acknowledgements

- Tremendous field help from Kate Morkeski, Jordan Mora, Chris Weidman, Jim Rassman
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- Stephen O'Brien (UMass Amherst)

Thank you!

Questions?