

# Wetland Dissolved Organic Carbon (DOC) Fluxes at Small and Large Scales

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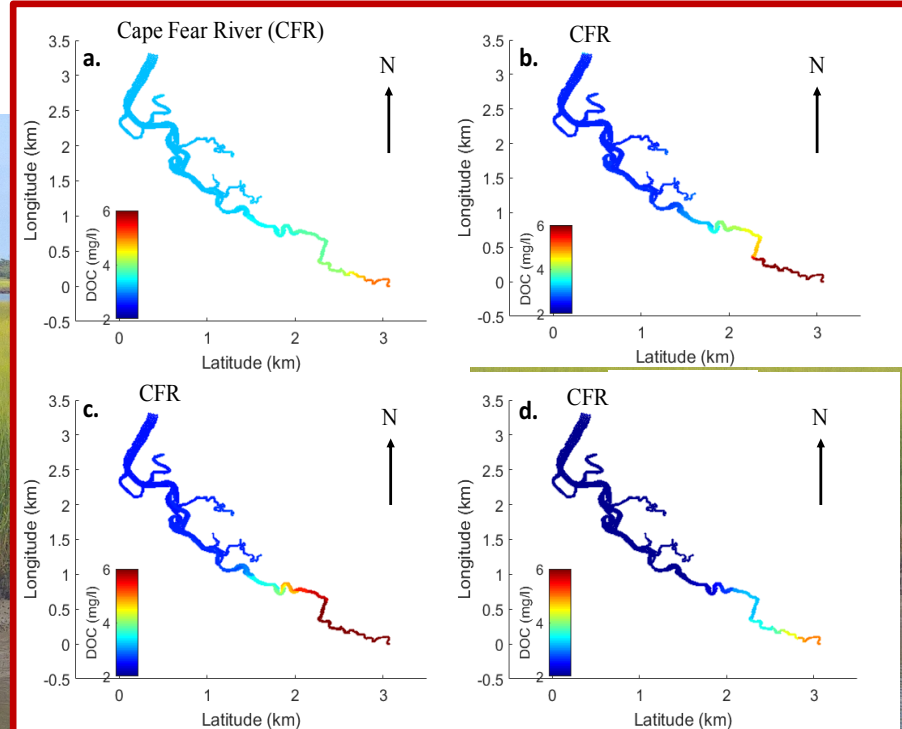


# Small Scale

- Unmanned Surface Vehicle (USV)
  - Bathymetry
  - ADCP
  - Chl, CDOM fluorescence
  - CTD



- Use SCHISM – salt fluxes
- Convert salt to DOC



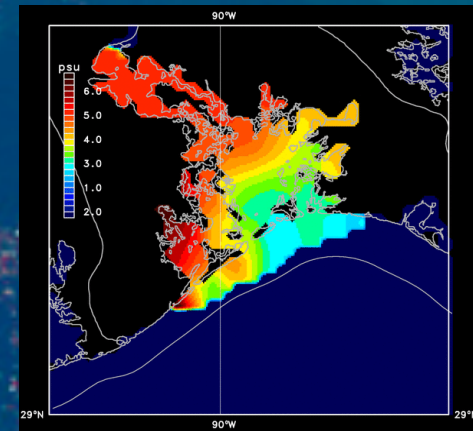
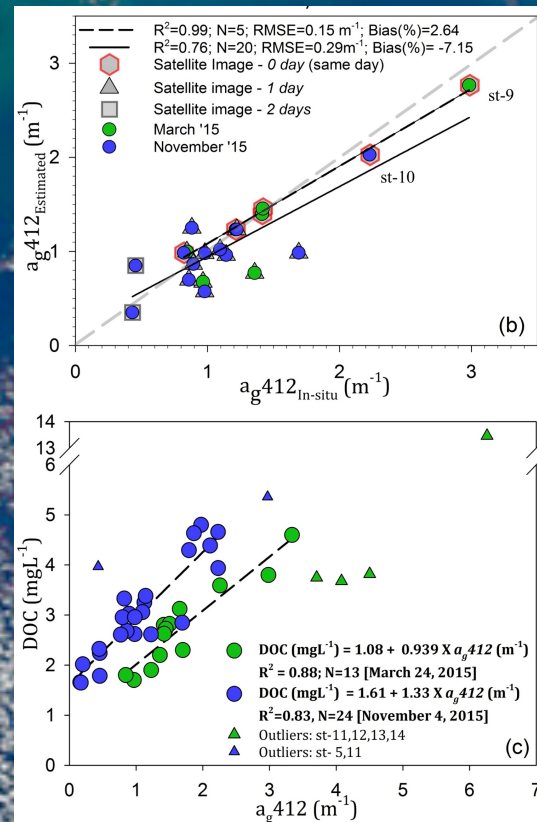
Month	DOC flux (g C day <sup>-1</sup> )	DOC export (g C m <sup>-2</sup> day <sup>-1</sup> )	Net annual DOC export (g C m <sup>-2</sup> y <sup>-1</sup> )
March	2.69 x 10 <sup>5</sup>	-0.236	-86



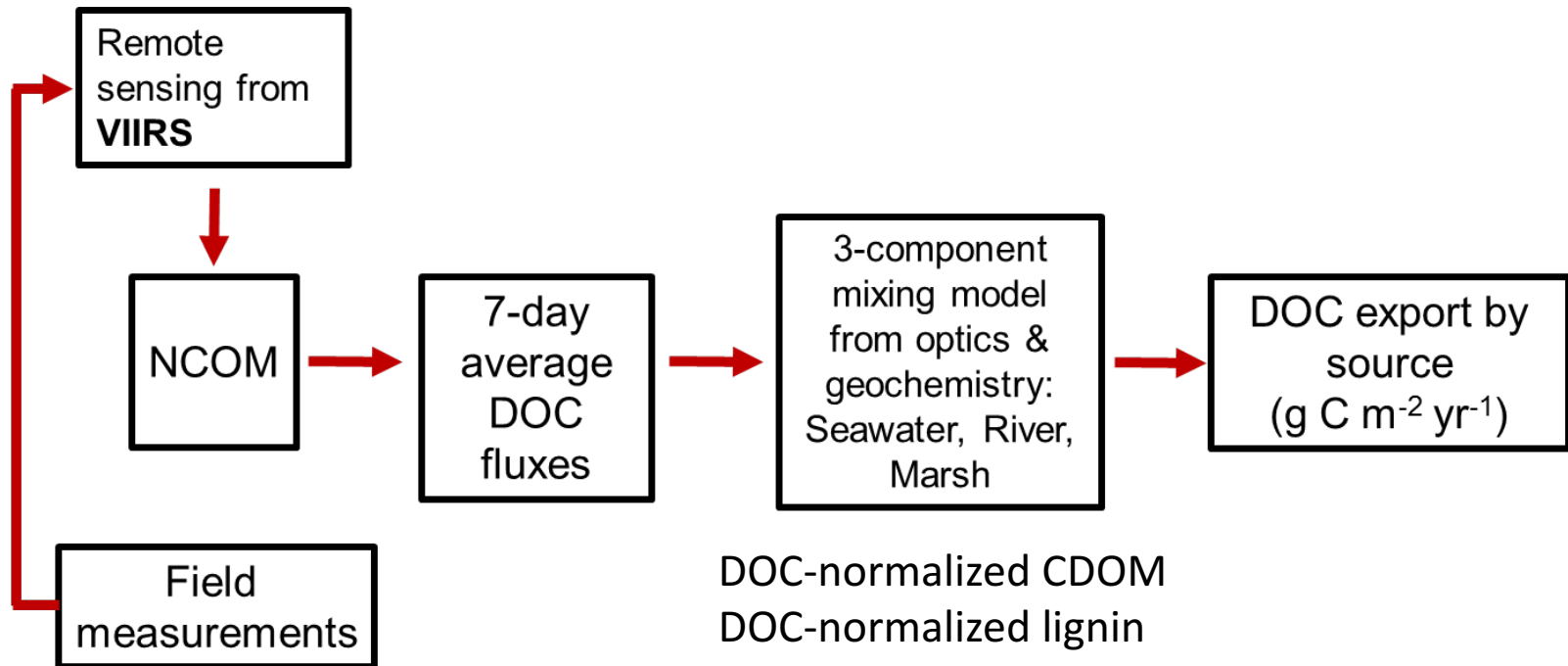
# Large Scale: Wetland fluxes through Apalachicola Bay and Barataria Bay

BB

AP

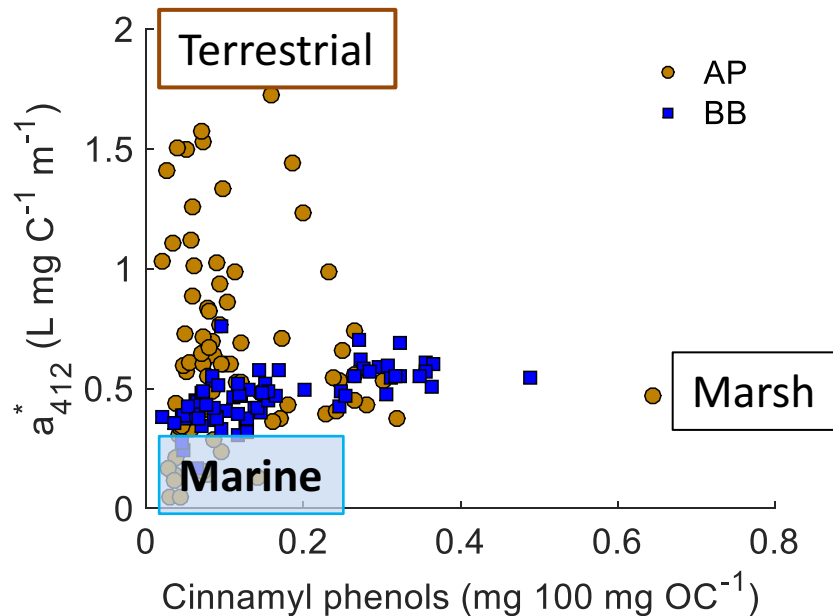


# Large Scale: Wetland fluxes through Apalachicola Bay and Barataria Bay



**NCOM: Navy Coastal Ocean Model**  
(for the LA-TX shelf)

# Mixing model to apportion DOC to sources, apply to flux model



$$DOC\ Flux = \sum_{i=1}^n \sum_{k=1}^m [DOC(i, k) \times U(i, k)] dz(k) dx(i)$$

**Table 1.** Estimates of net daily DOC fluxes and annual DOC export values from Apalachicola Bay and Barataria Bay, respectively, to the northern Gulf of Mexico.

Month	7-day average DOC flux (x10 <sup>6</sup> kg C day <sup>-1</sup> )	Net annual DOC export (x10 <sup>6</sup> g C m <sup>-2</sup> y <sup>-1</sup> )	Blue Carbon DOC export (x10 <sup>6</sup> g C m <sup>-2</sup> y <sup>-1</sup> )
AP	0.144	8.35	0.14
BB	0.089	7.14	0.95