



Coastal wetlands and carbon: Salt marshes in climate resilience

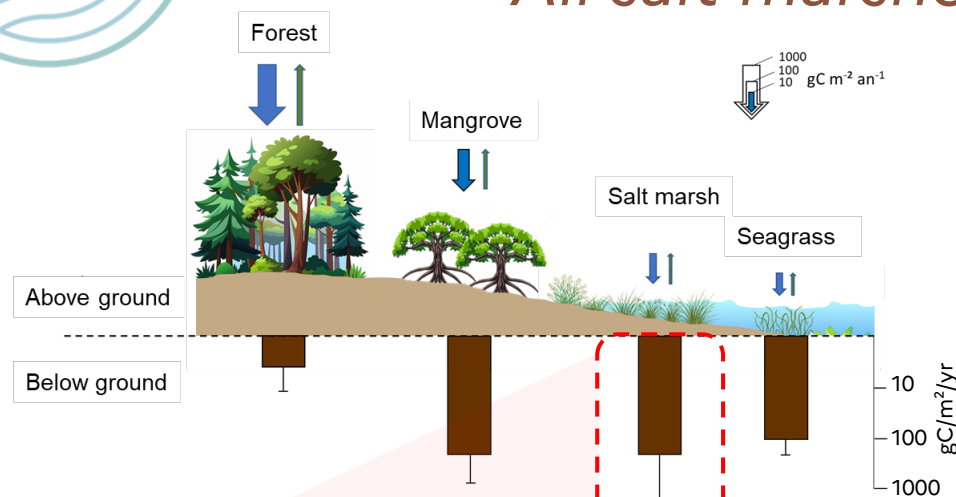
Ma Mission en 180 ”

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Salt marsh carbon: site-specific

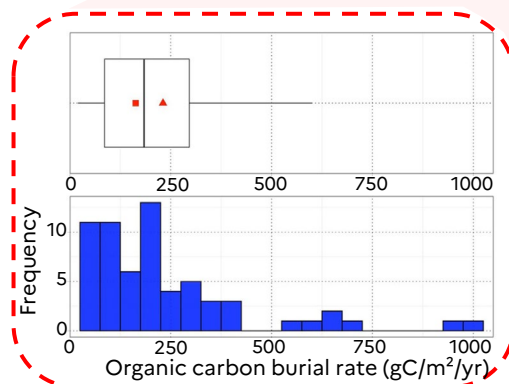
"All salt marshes are not equal before the law of the ocean"



TEMPORALITY

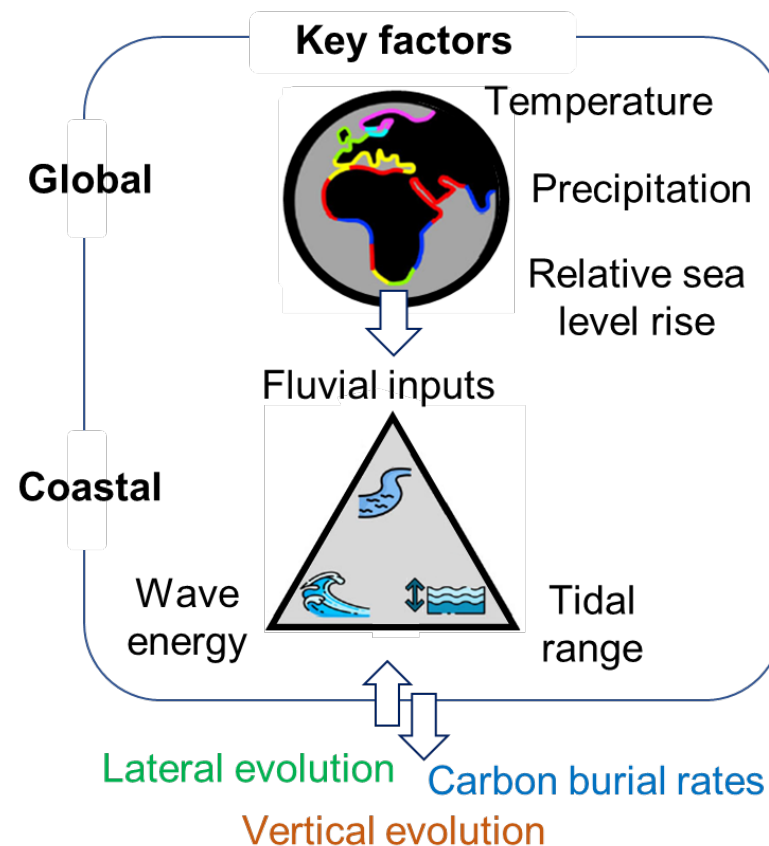
Short-term C sink

Long-term C sink



Carbon burial rate differences [min – max] = x 600

Williamson and Gattuso, 2022



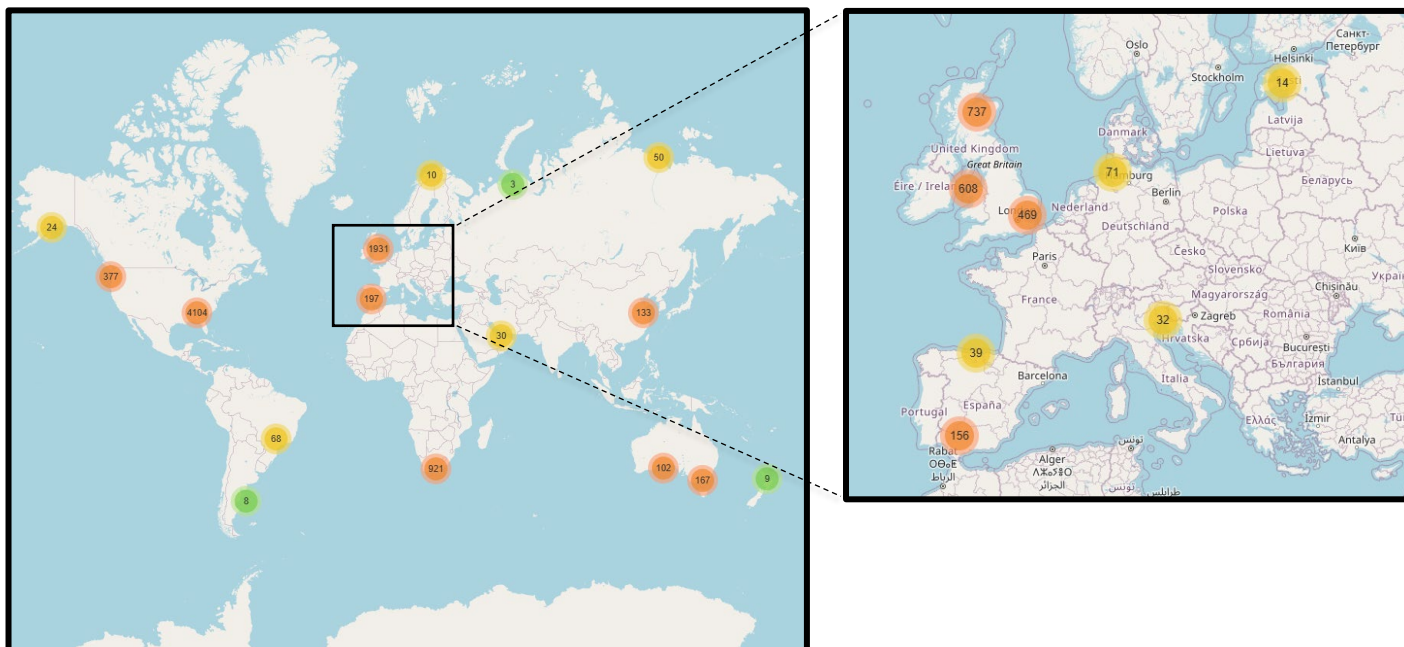


France: a missing piece

Salt marsh area in France > 10,000 ha

Coastal Carbon ATLAS

<https://ccrcn.shinyapps.io/CoastalCarbonAtlas/>



Carbon burial rates International literature

- 1 single study: Hensel et al., *JCR* 1999



Blue carbon reviews

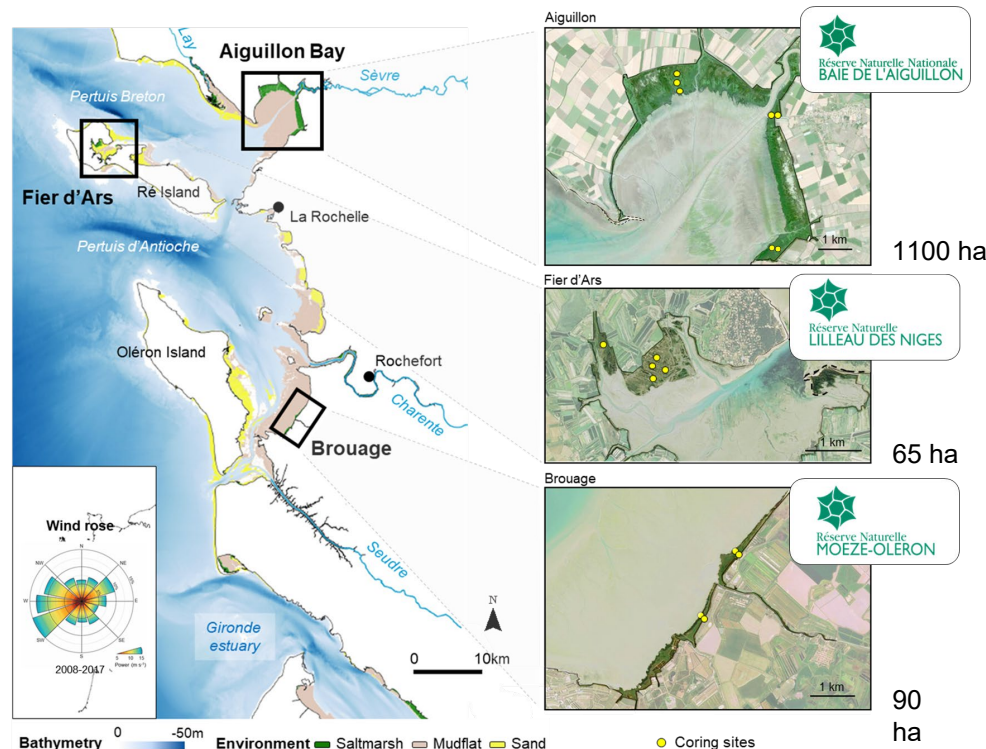
- Chmura et al., *Global Biogeochem* 2003
- Duarte et al., *Biogeosci* 2005
- Mcleod et al., *Front Ecol Environ* 2011
- Ouyang and Lee, *Biogeosci* 2014
- Regnier et al., *Nature* 2022





Projects Cabestan/CarboNiu

A multi-site approach



A. Morphological evolution

- **Lateral:** -0.8 to +14 m/yr
➡ vs. Wind-wave exposure
- **Vertical:** 0.5 to 2.2 cm/yr
➡ vs. Fluvial inputs

B. Carbon burial rates

- **92** ➡ **241 gC/m²/yr**
vs. Sedimentation

Sediment builds, carbon stores

