



# TRACKING NUTRIENTS THROUGH SYSTEMS



# Complexities of Tracking Nutrients on the West Florida Coast: Hurricanes and Upwelling Events

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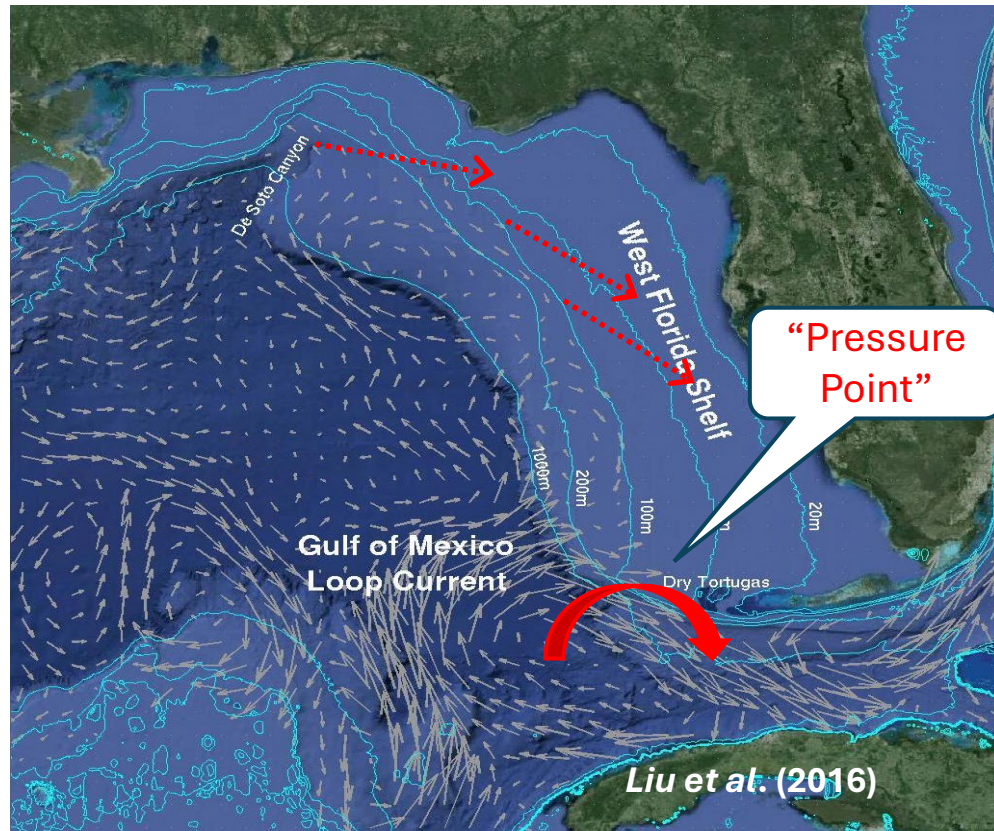
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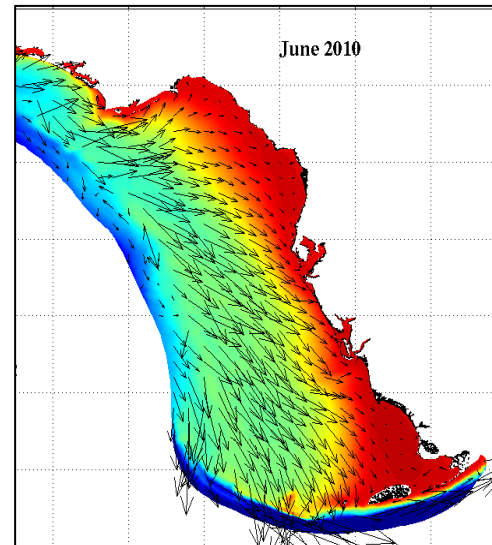


# BACKGROUND

**Hurricane events: extreme rainfall & excessive nutrients of land origin. West Florida Shelf upwelling: seasonal variation – wind driven; interannual variation – the Loop Current interaction with the shelf slope.**

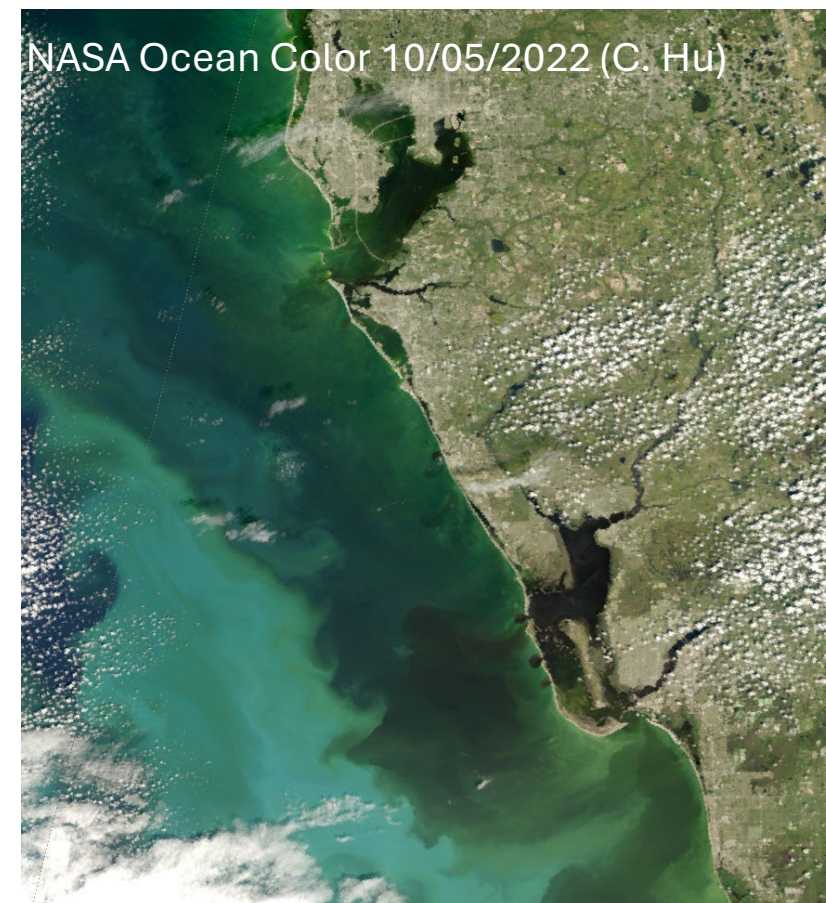
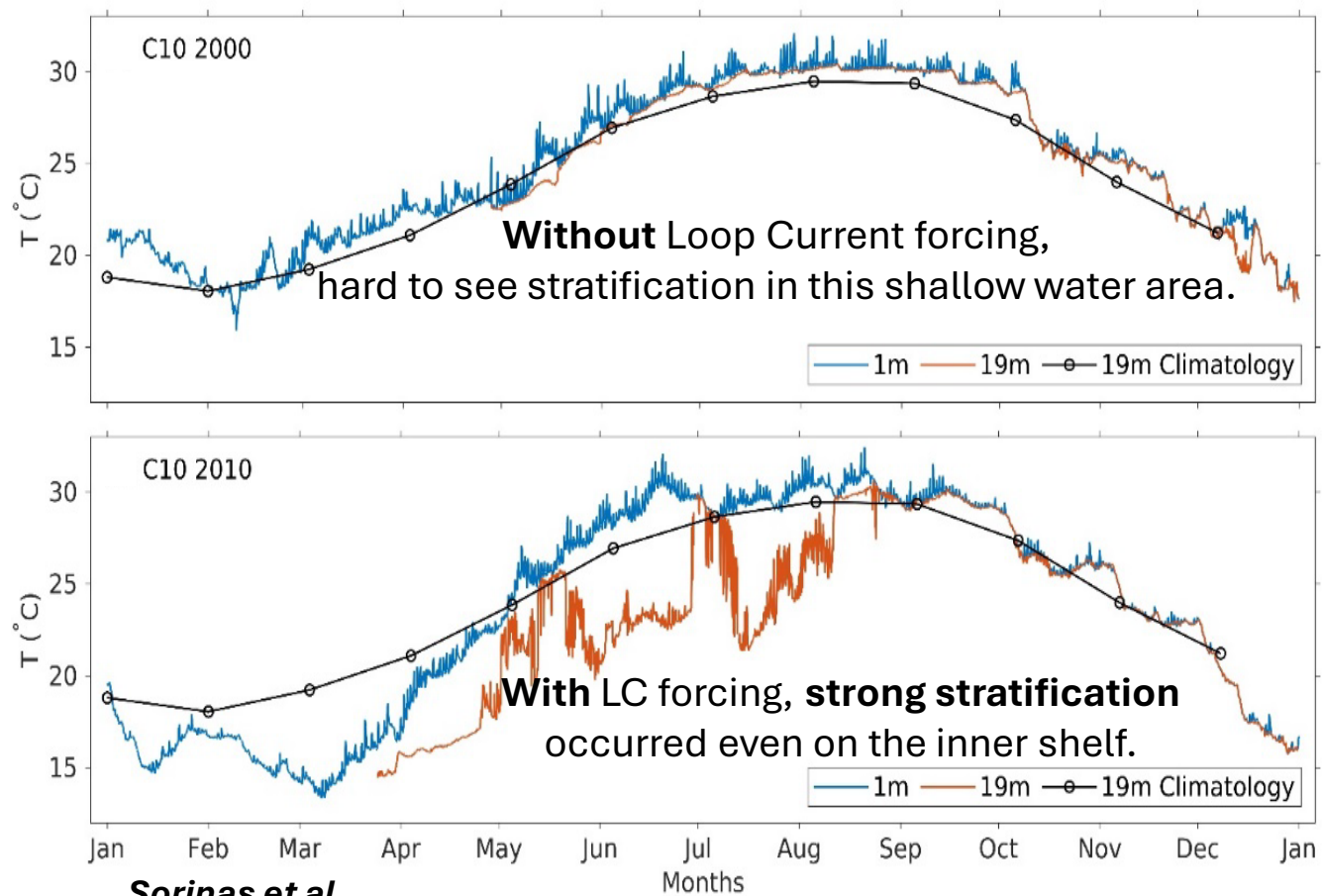


**Strong upwelling can transport inorganic nutrients of deepwater origin onto the shelf.**



# TRACKING NUTRIENTS

**LC forced strong upwelling in 2010: cold water advected to inner shelf (left).  
Hurricane Ian (2022) resulted in a large coastal turbidity water plume (right).**



# CHALLENGES

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## **Offshore LC forced upwelling events:**

Don't know what inorganic nutrients are out there, their concentrations or volumes. How long time to reach and stay on the inner shelf? May affect bloom initiation, development & termination (thru advection). How to effectively monitor? Predictable or not?

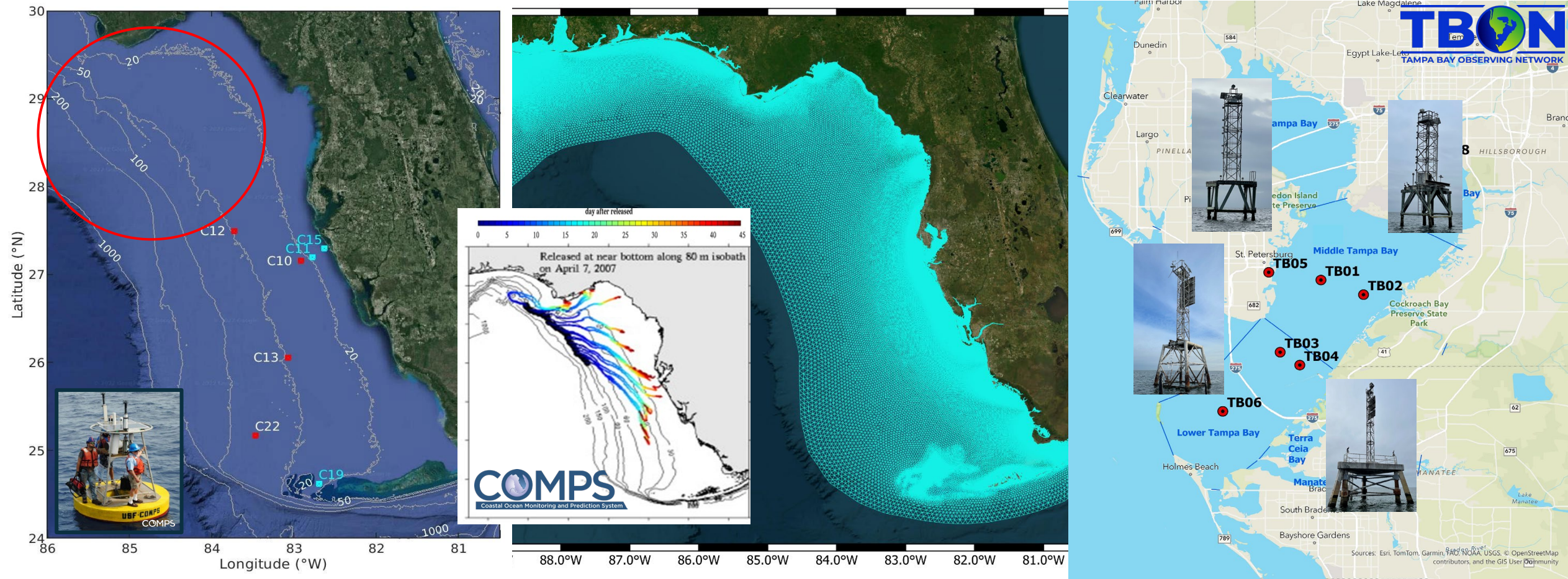
## **Hurricane events:**

Nutrients of land origin contribute to bloom development? How much nutrients are available? How long do they stay on the shelf? Nutrient (water quality) monitoring system in estuaries.



# REFLECTION

Would deploy moorings on the northern WFS, add SUNA to moorings, expand water quality network, have enough redundant sensors/parts.



# ACKNOWLEDGEMENTS

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