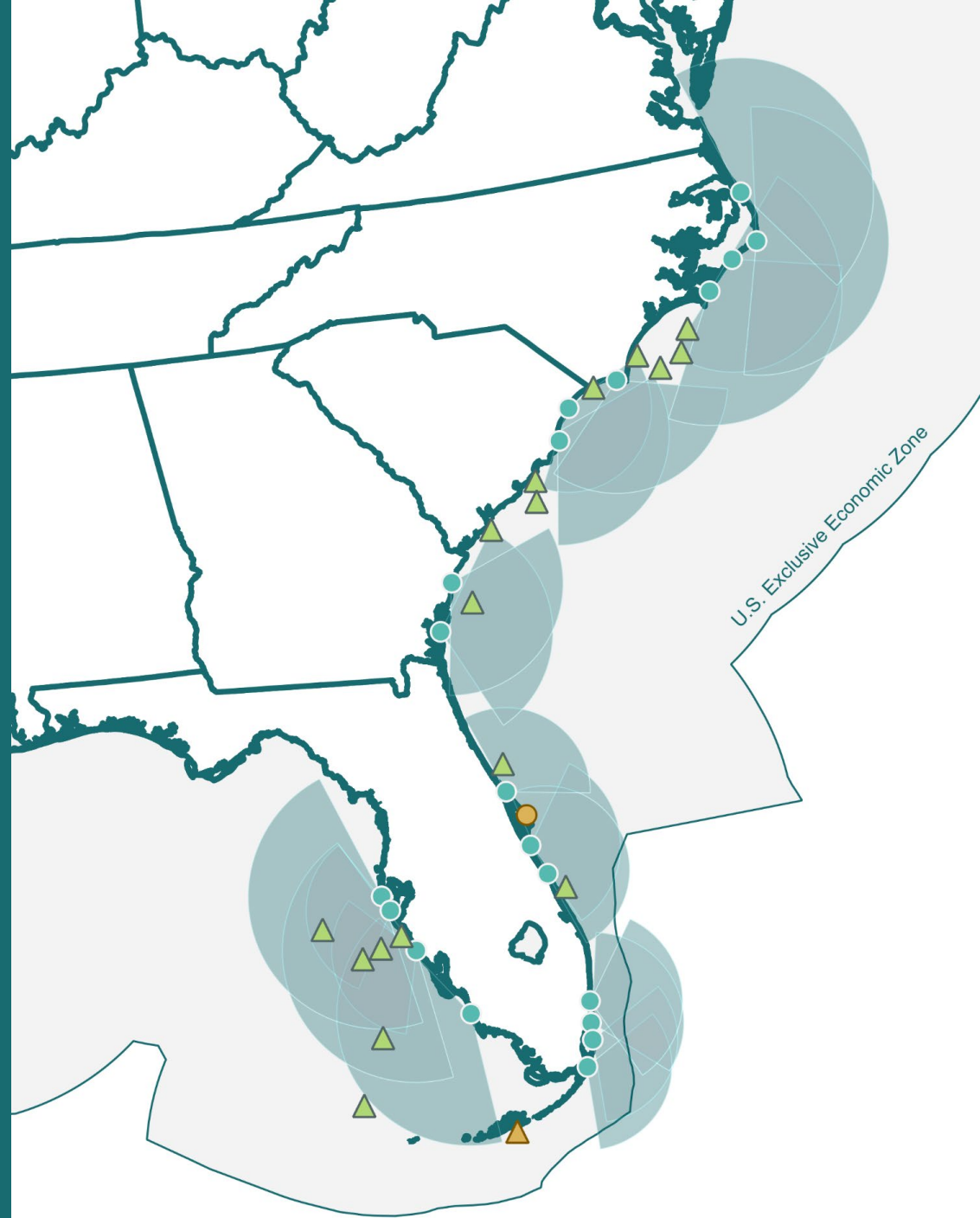


Coastal Ocean Circulation Observing & Modeling, and Applications on the West Florida Shelf

Y. Liu, R.H. Weisberg, J. Law,
S. John, K. Qiao, J. Donovan, L.
Sorinas, A. Nickerson, S. Munoz

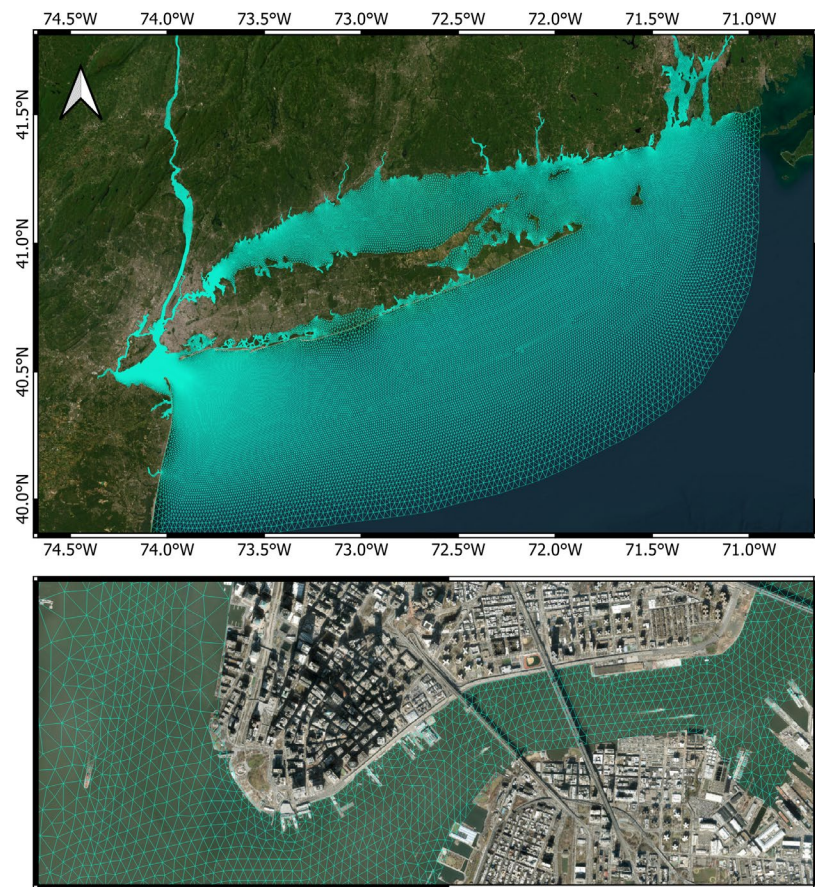
*College of Marine Science
University of South Florida*



NOAA UFS CAT WQ Model Evaluation

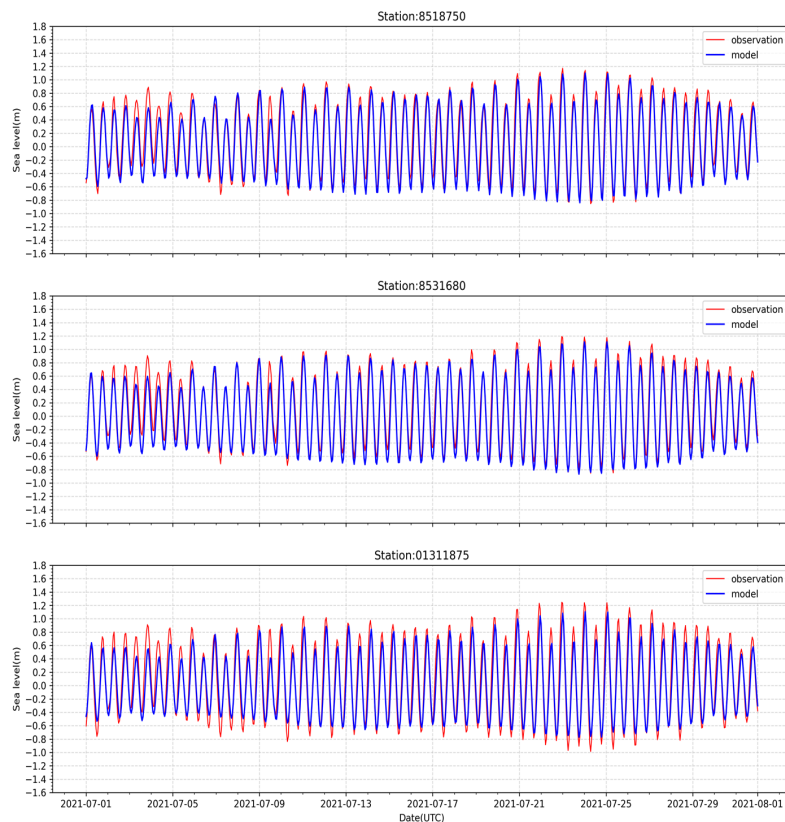
FVCOM Application in New York Harbor – Cook Inlet Region

PI: *Yonggang Liu*, Postdoc: *Sebin John*



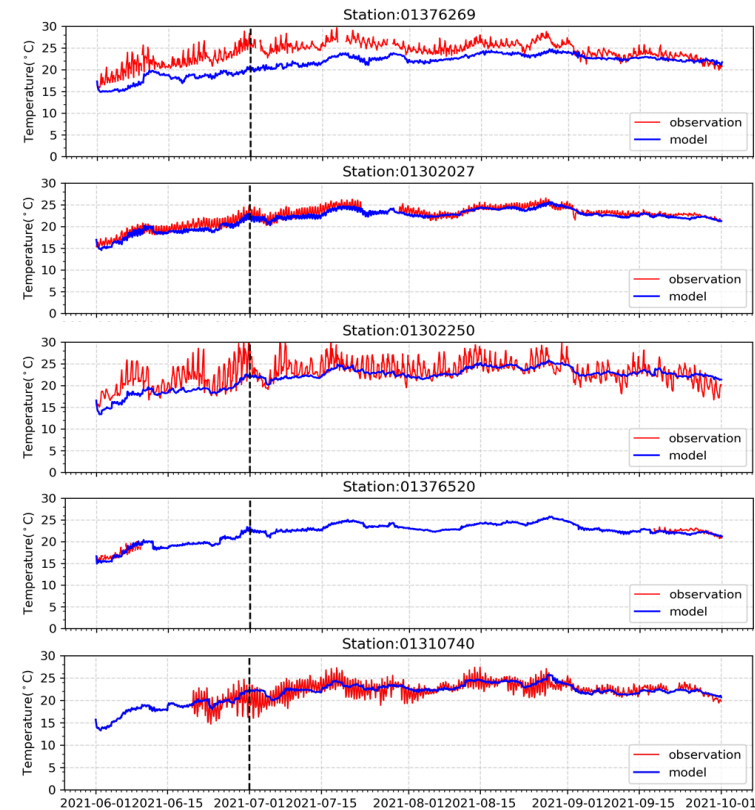
Phase I (2022 – 2023)

Barotropic model application for tides and tidal currents



Phase II (2023 – 2024)

Wind-driven ocean circulation model application



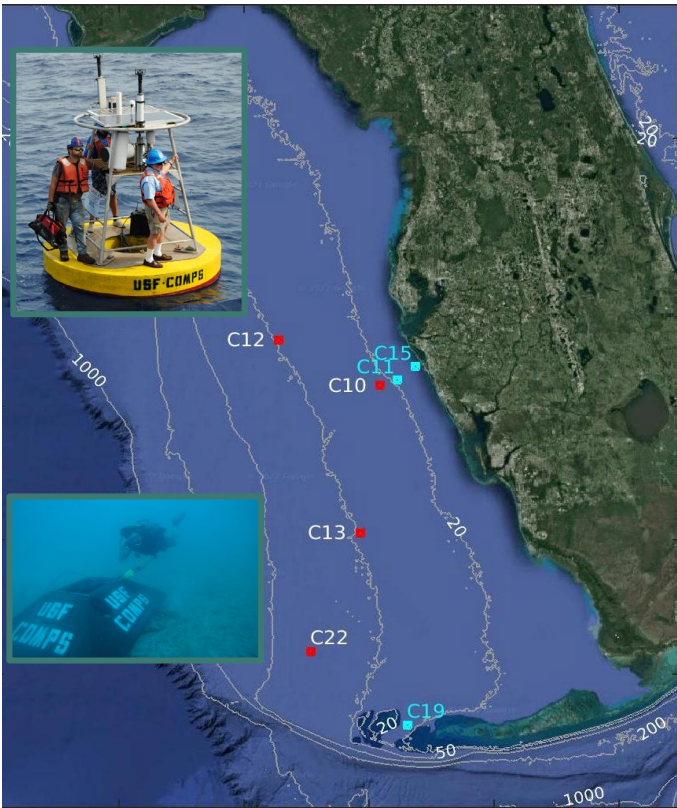
Monthly PI and work group meetings, with help from model developers.
One of the main purposes is to train next generation numerical modelers.

A Coordinated Coastal Observing & Modeling Program on the West Florida Shelf

Applications to the matters of societal concerns: HABs, fisheries, storm surge, SAROPS, etc.

Moorings (26 years)

Daily Automated Nowcast/Forecast Systems (10+ years)

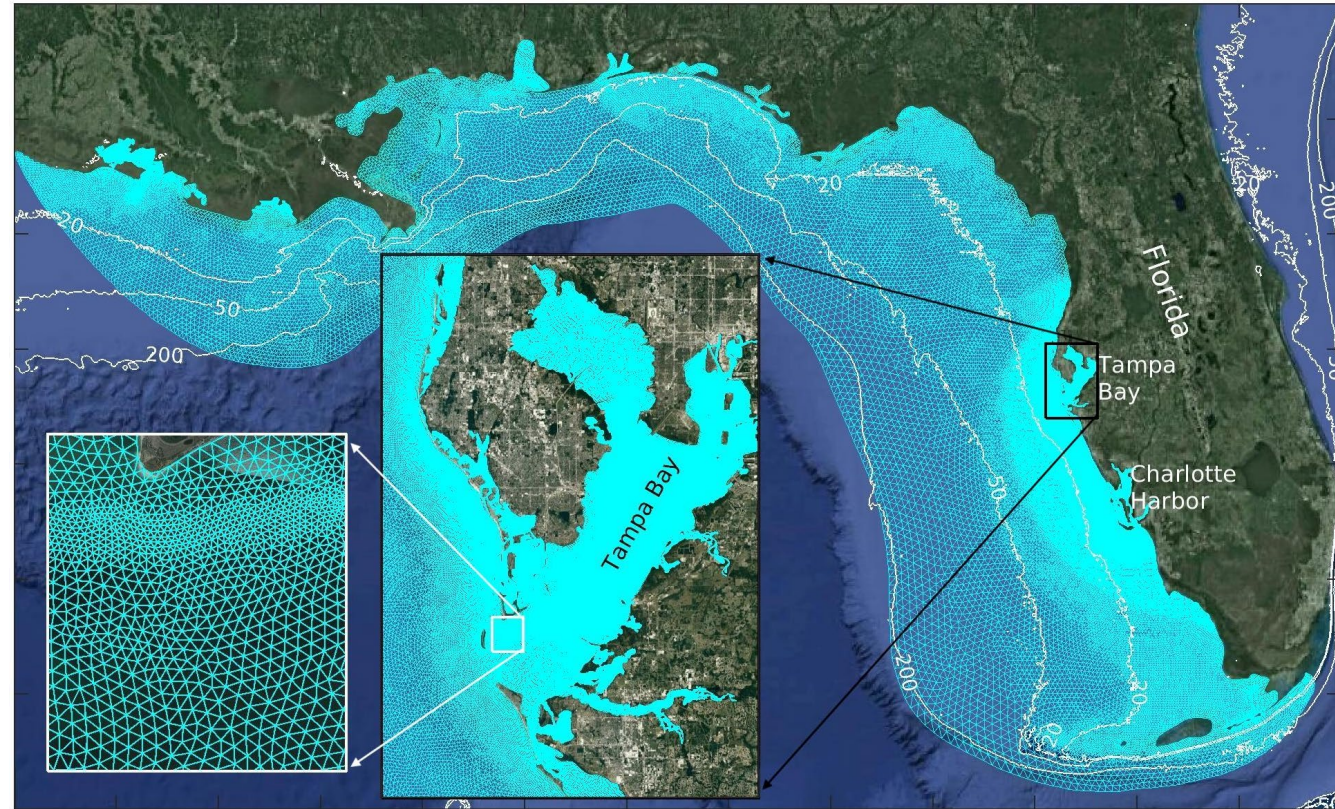


Surface Buoys
(Real-time met/ocean data)
Subsurface Moorings
(ADCPs at all 7 stations)

WFCOM & TBCOM

- 3D FVCOM applications
- Realistic simulation tides, winds, river, offshore forcing
- 1-d hindcast & 3.5-d forecast

Users:
US Coast Guard
NOAA OR&R
FWC/FWRI (HAB tracking)
Florida DEP
.....

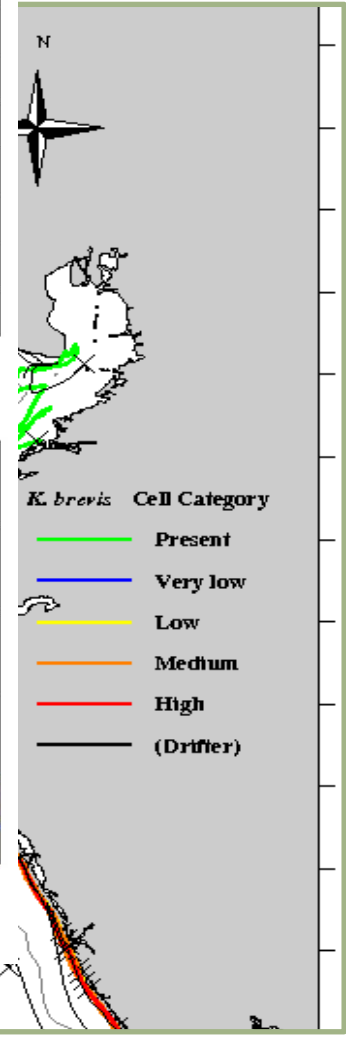
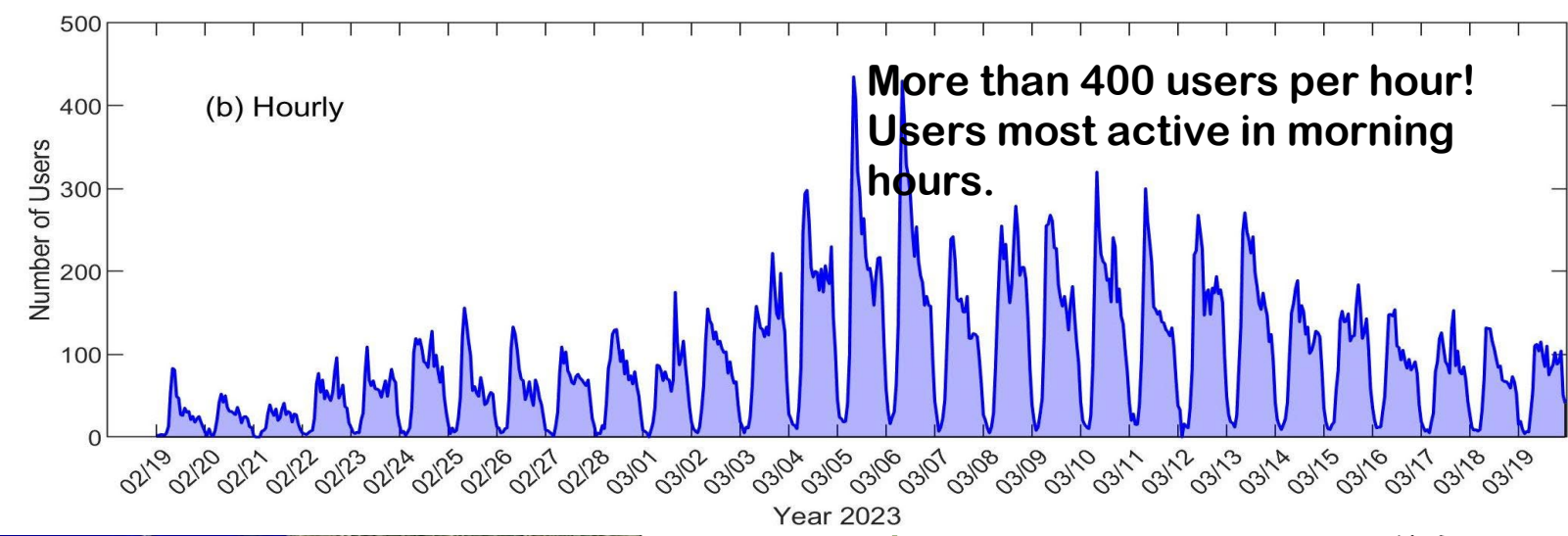
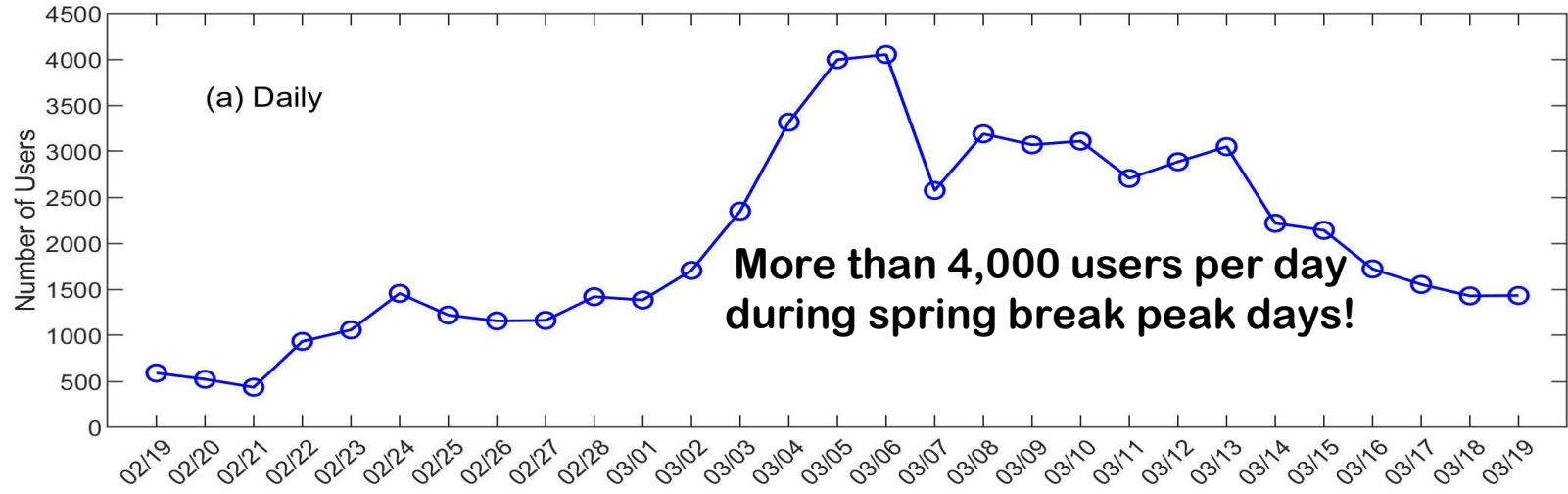
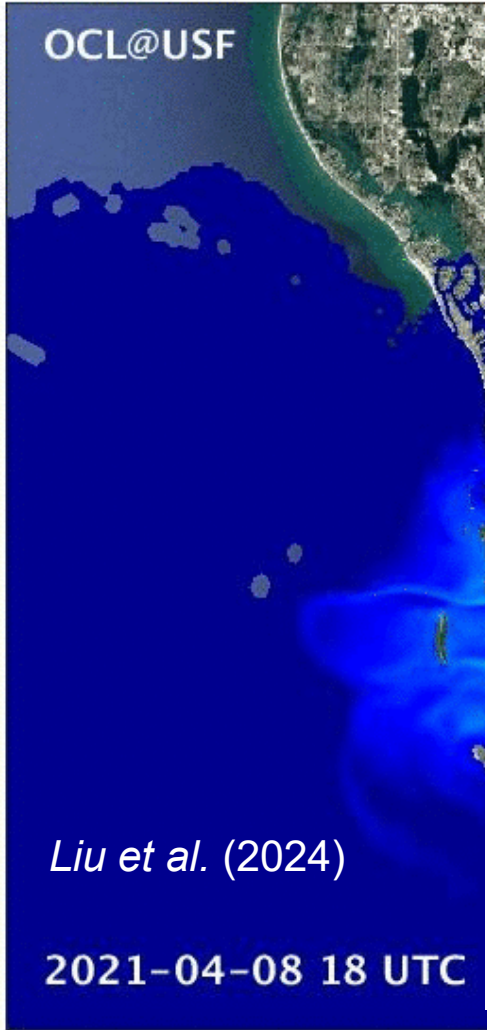


1	ShortName	DataType	Extent1	Extent2	Extent3	Extent4	2023-04	2023-05	2023-06	2023-07	2023-08	2023-09	2023-10	2023-11	2023-12	2024-01	2024-02	2024-03	2024-03Daily AVG	
124	TWDB_SAB_C	currents	29.5	-94.1	30.1	-93.7	0	0	0	0	0	0	0	0	0	0	0	0	1	0.03
125	WFCOM_USF_C	currents	24	-94	31	-75	29	21	32	32	39	32	32	27	18	67	46	47	1.52	
126	Waikiki_UHI_C	currents	21.2	-158	21.4	-157.7	0	0	2	0	0	0	0	0	0	3	0	2	0.06	

(US Coast Guard monthly report of data usage)

<http://ocgweb.marine.usf.edu>





Liu et al. (2023)

Coupled Physical-Biological Model of Red Tide

2018 Day: 244



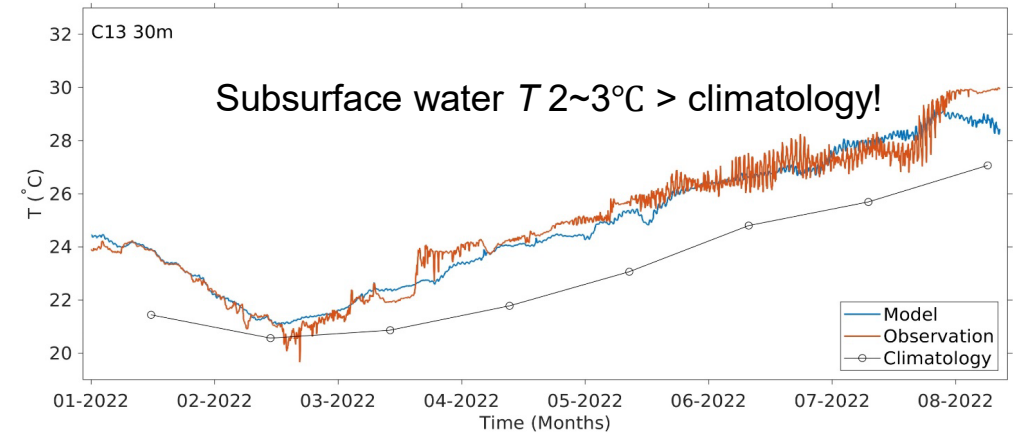
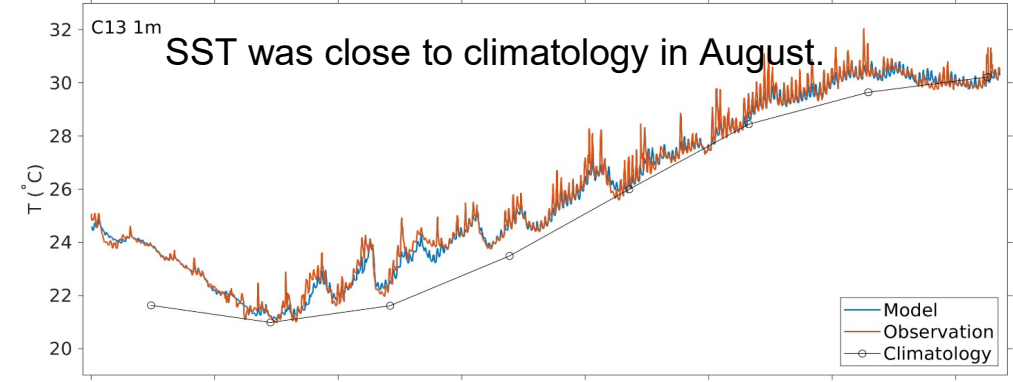
Log 10 Kbrevis (cells/liter)



OCL@USF

<http://ocgweb.marine.usf.edu>

Why Was Hurricane Ian Rapidly Intensified on the WFS?



Subsurface water T observations in coastal ocean are important for hurricane intensity forecasts! Long-term data are critical in accurately defining climatology.