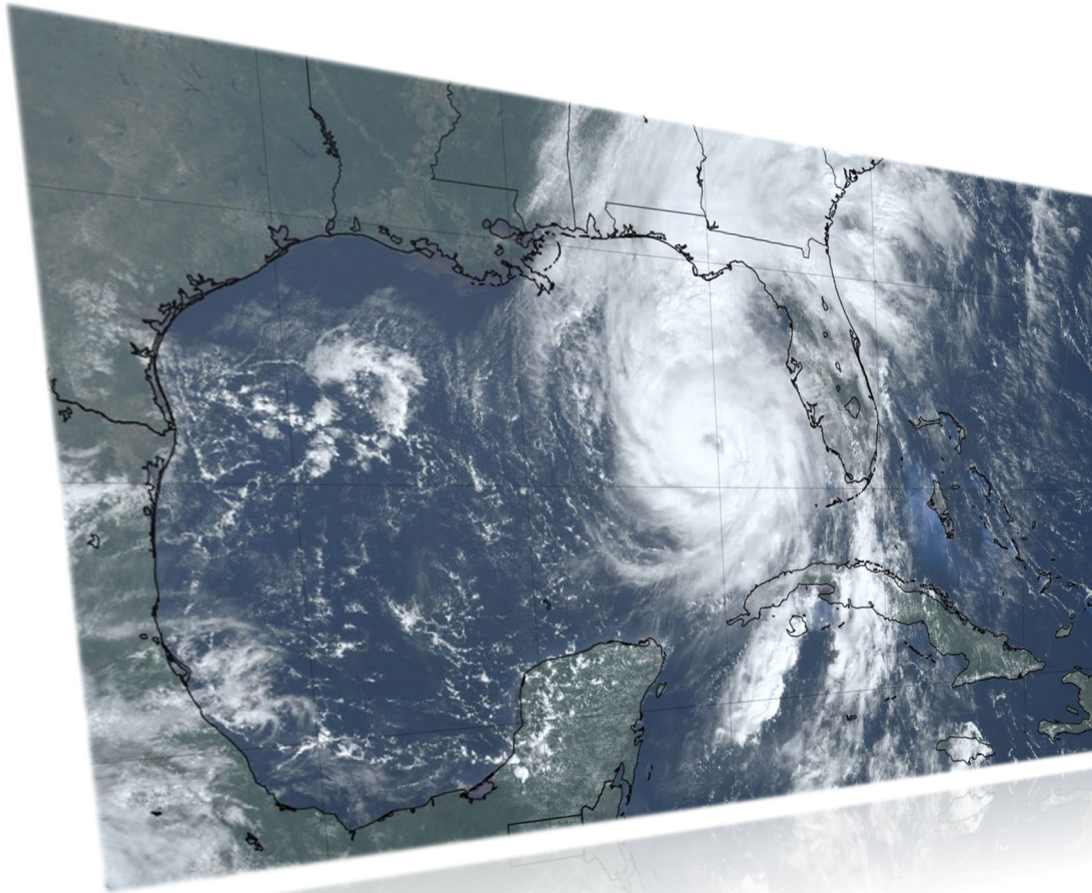


# “Which Storm Was That?”

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The 2024 Hurricane Season  
at Longboat Key, FL



Florida Shore & Beach Preservation Association  
National Conference on Beach Preservation Technology  
February 5-7, 2025  
Panama City Beach, FL

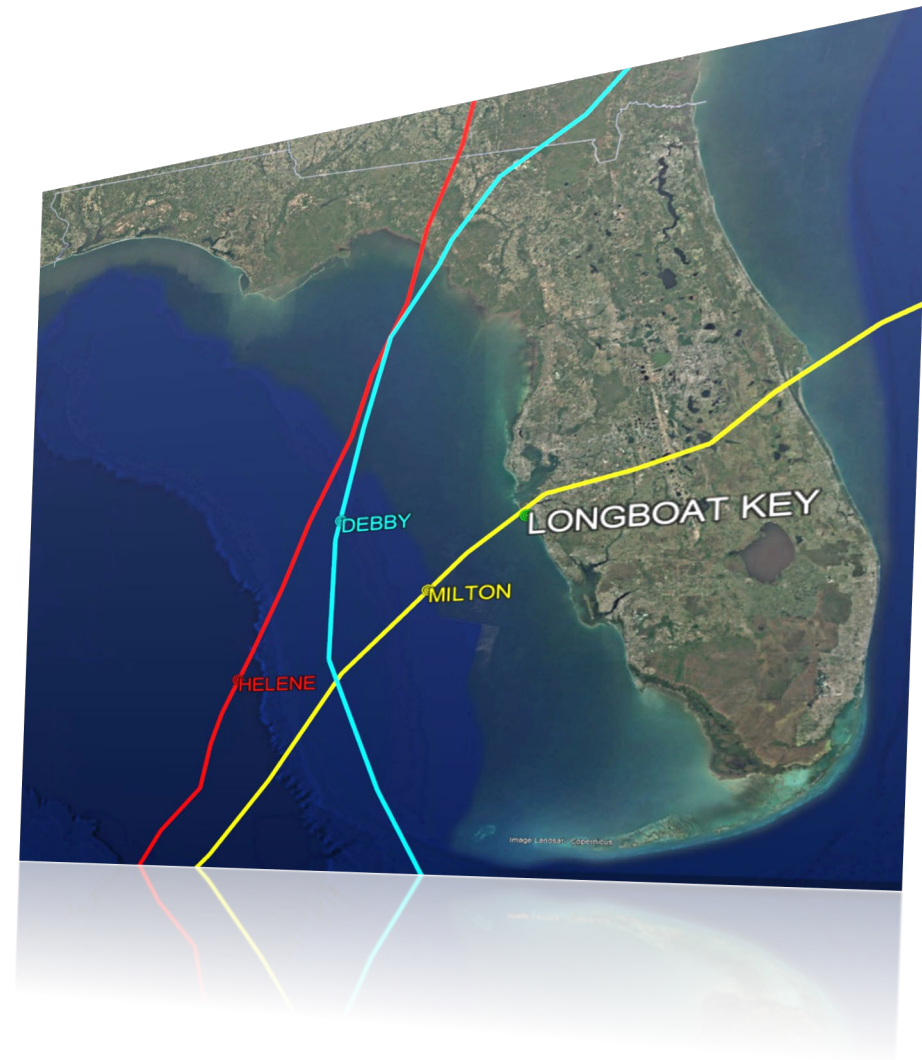
# Discussion

- ◆ Location
- ◆ Storm after storm after storm
- ◆ Beach response
- ◆ Islandwide impacts
- ◆ Cleanup
- ◆ Moving forward...



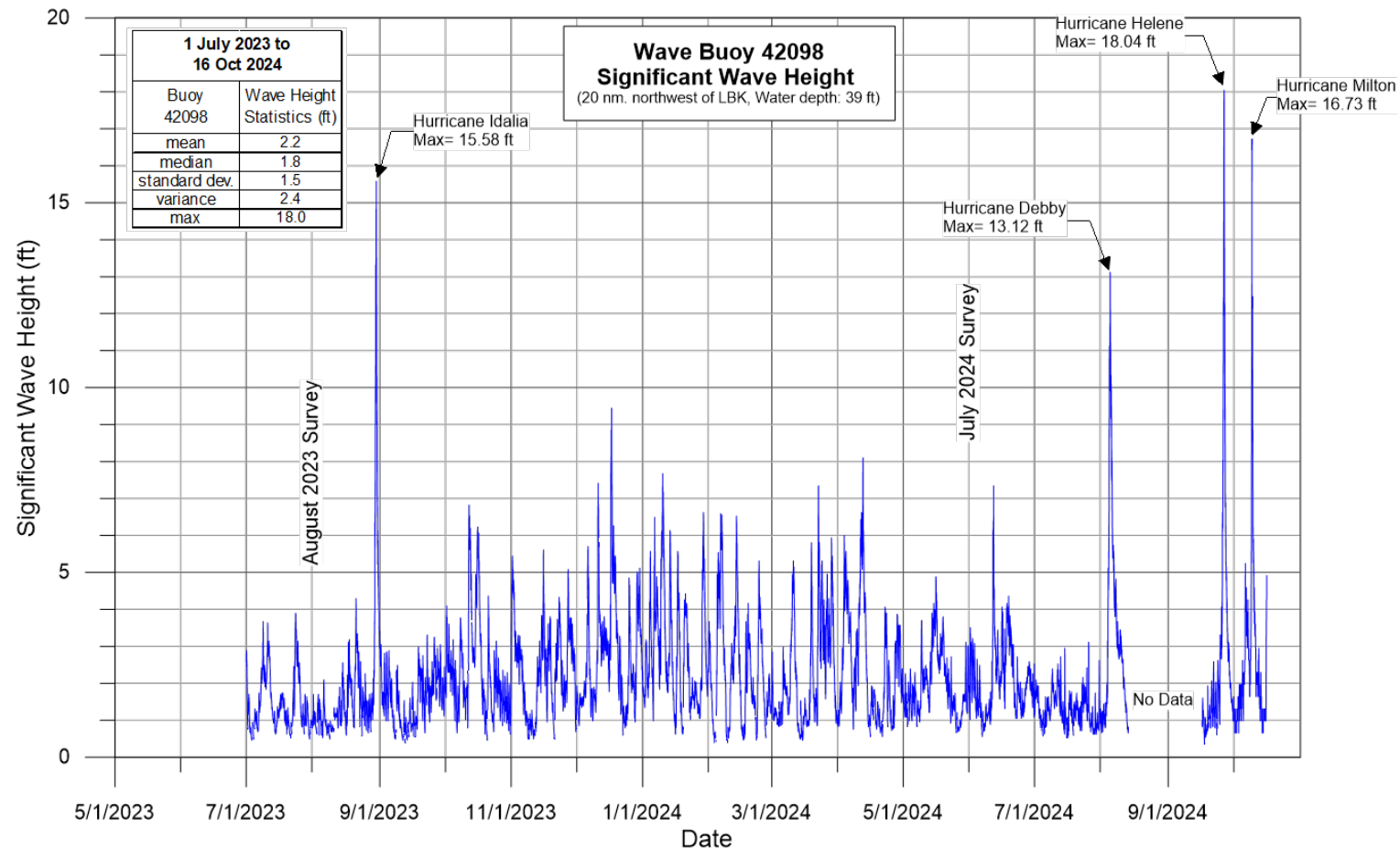
# 2024 storm tracks

- ◆ Hurricane Debby
  - August 4<sup>th</sup> – 5<sup>th</sup>
- 7 weeks later:*
- ◆ Hurricane Helene
  - September 26<sup>th</sup> 27<sup>th</sup>
- 2 weeks later:*
- ◆ Hurricane Milton
  - October 9<sup>th</sup> – 10<sup>th</sup>



# Waves

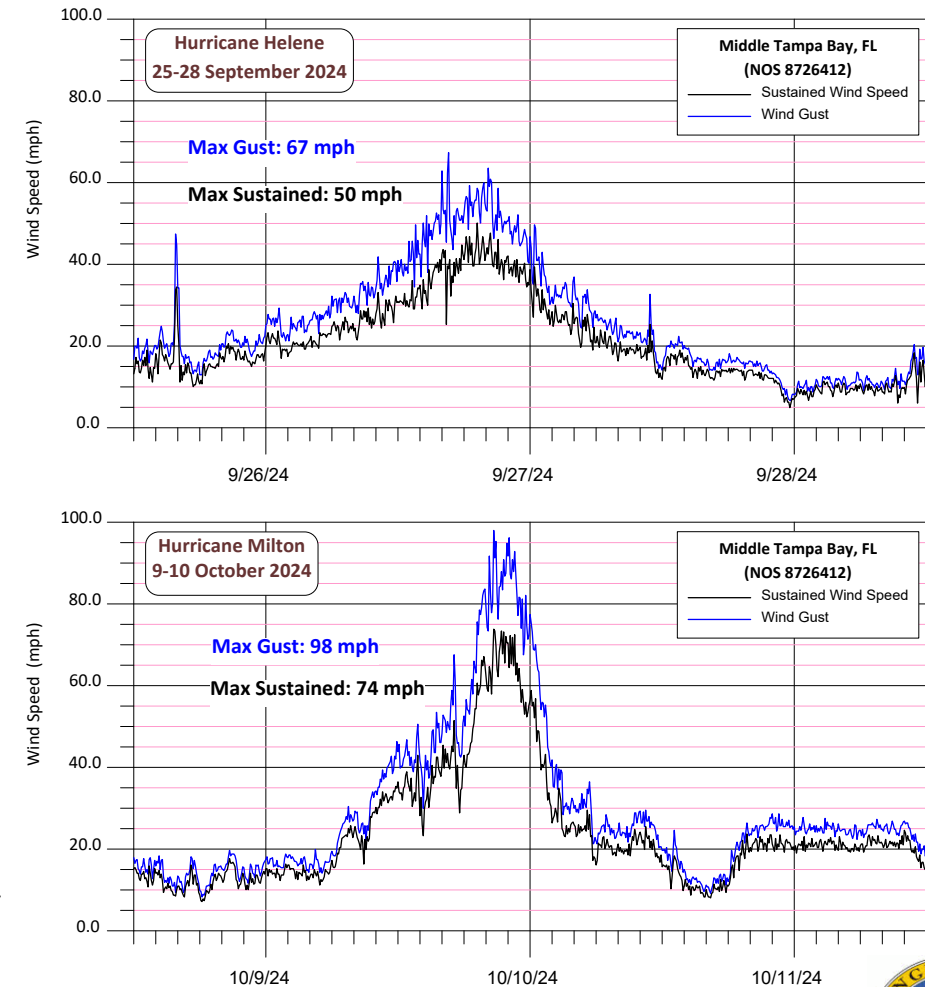
- ◆ Four 13ft+ storm wave events in 13 months





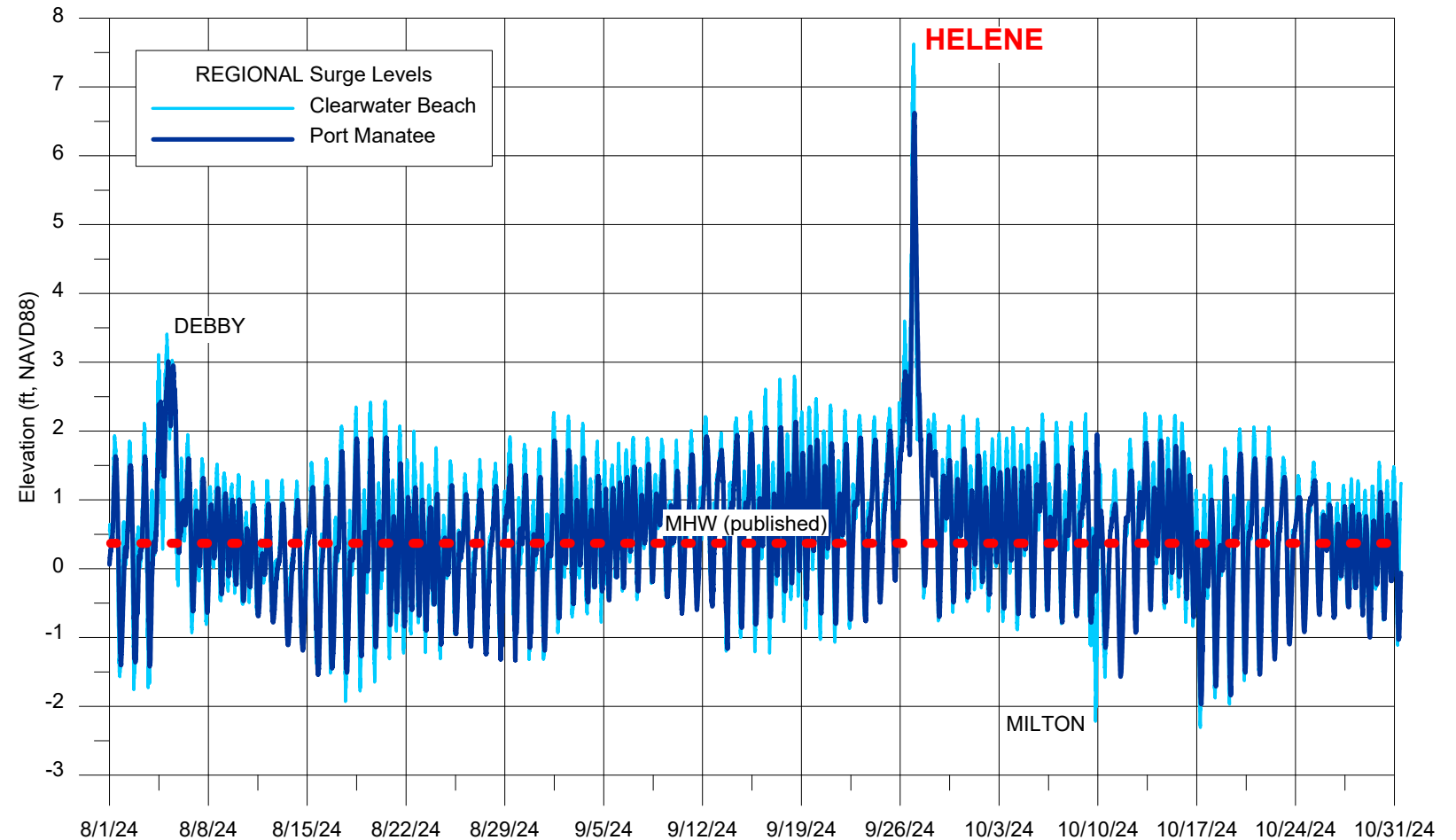
# Winds

- ◆ Hurricane Debby
  - Tropical storm conditions at LBK
  - *Strongest winds from the south*
- ◆ Hurricane Helene
  - Nearing Cat 1 conditions
  - *Strongest winds from the south*
- ◆ Hurricane Milton
  - Approaching Cat 2 conditions
  - *Strongest winds from the NORTH and EAST*



# And a lot of water...

- ◆ Surge level in Helene reached over 6.5 ft at the beach
  - Record level at Port Manatee
  - > 500-yr event
- ◆ Hurricane Milton made landfall around Longboat Pass, drew down the water levels in Tampa Bay



# Helene: inundation from beach and bay



Helene surge level “scum line” at Atlas Street near R-63, indicative of sustained water levels in the area. The elevation of the scum line is +6.65 ft NAVD88. (photo Foth|Olsen)



Helene wave overwash at Twin Shores near R-4.5. Sidewalk is at elevation +8.1 ft NAVD88, storm didn't peak until several hours later (Instagram: FollowMeToLongboatKey)



Flooding along Gulf of Mexico Drive during Hurricane Helene (Town of Longboat Key)





# Beach impacts



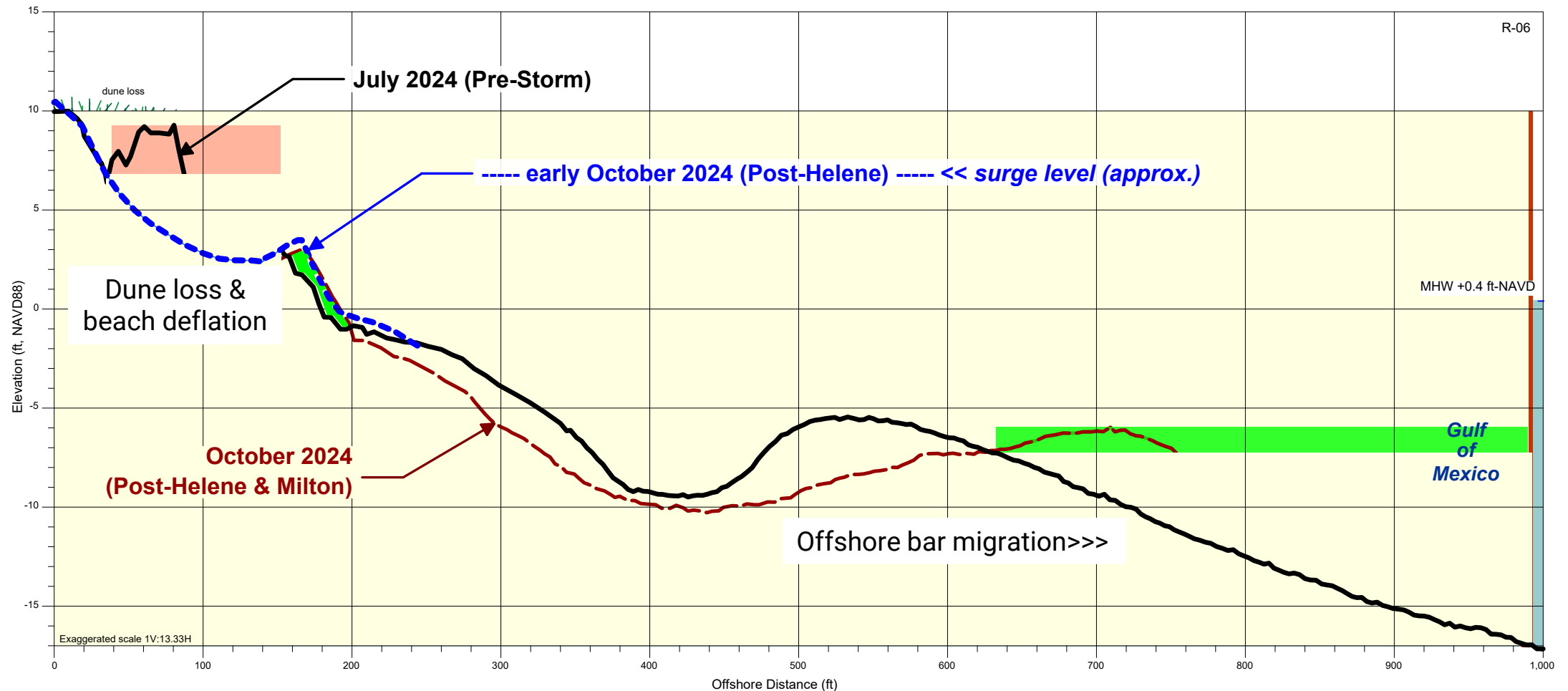
Post-Milton

15 October 2024  
Foth|olsen





# Sand losses



- ◆ *407,300 cubic yards lost from the engineered beaches (-7.7 cy/ft, avg.)*



# Beach structures impacts



30 September 2024  
Foth/olsen





# Sand in lots of undesirable places...

- ◆ In the streets & parking lots,
- ◆ In the pools,
- ◆ Under elevated buildings
  - In non-elevated buildings
- ◆ In the drains and other utilities
  - Vacuumed out over 100 storm drains (twice)



C. Weinhofer – Longboat Key Observer





# Cleanup challenges

- ◆ Initial access
  - Equipment pre-positioning
- ◆ Debris removal
- ◆ Utilities
- ◆ Canals/vessel cleanups
- ◆ Communications



# Recovery steps

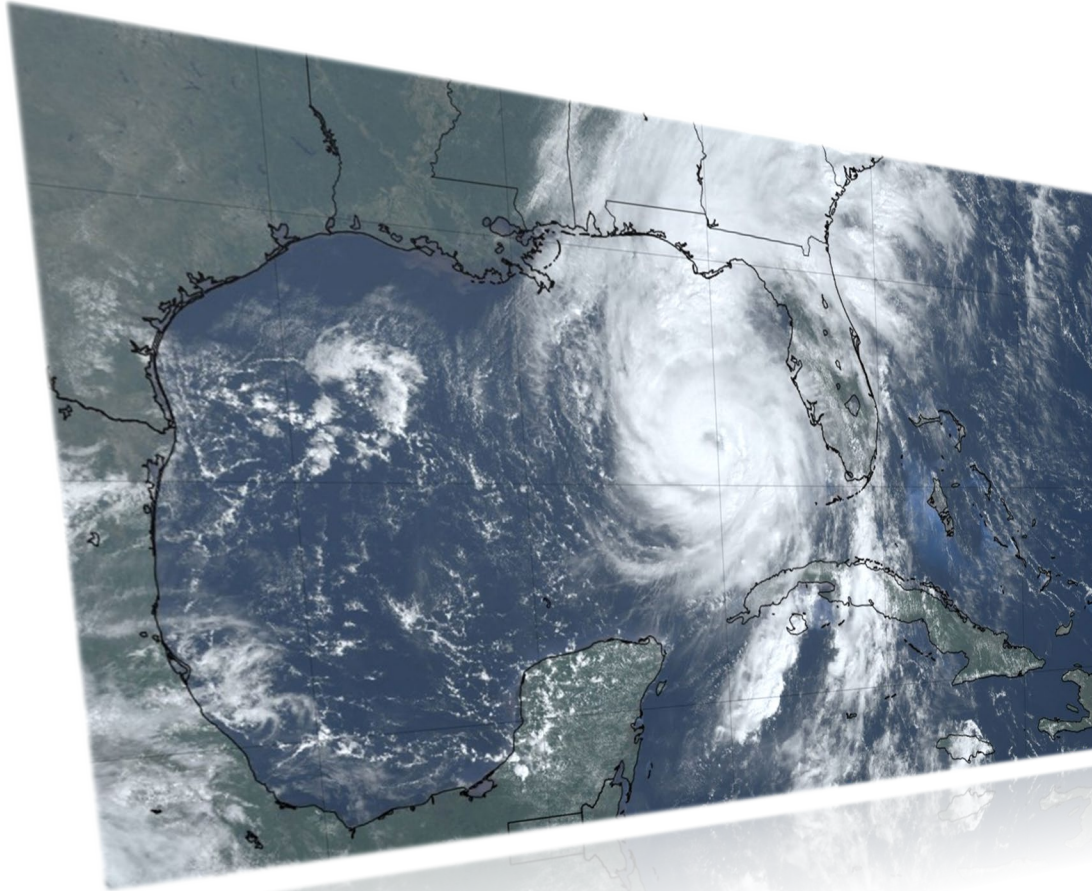
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- ◆ FEMA Category G beach repairs
- ◆ FEMA Category G coastal structure repairs
- ◆ FEMA Category G park infrastructure replacements
- ◆ Developing plans for structural stabilization
- ◆ Traffic flow and re-entry protocols





# “What Storm Was That?”



## The 2024 Hurricane Season at Longboat Key, FL



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