

# Charlotte County Beach Restoration & Inlet Management Projects

**Beaches and Shores Advisory Committee**

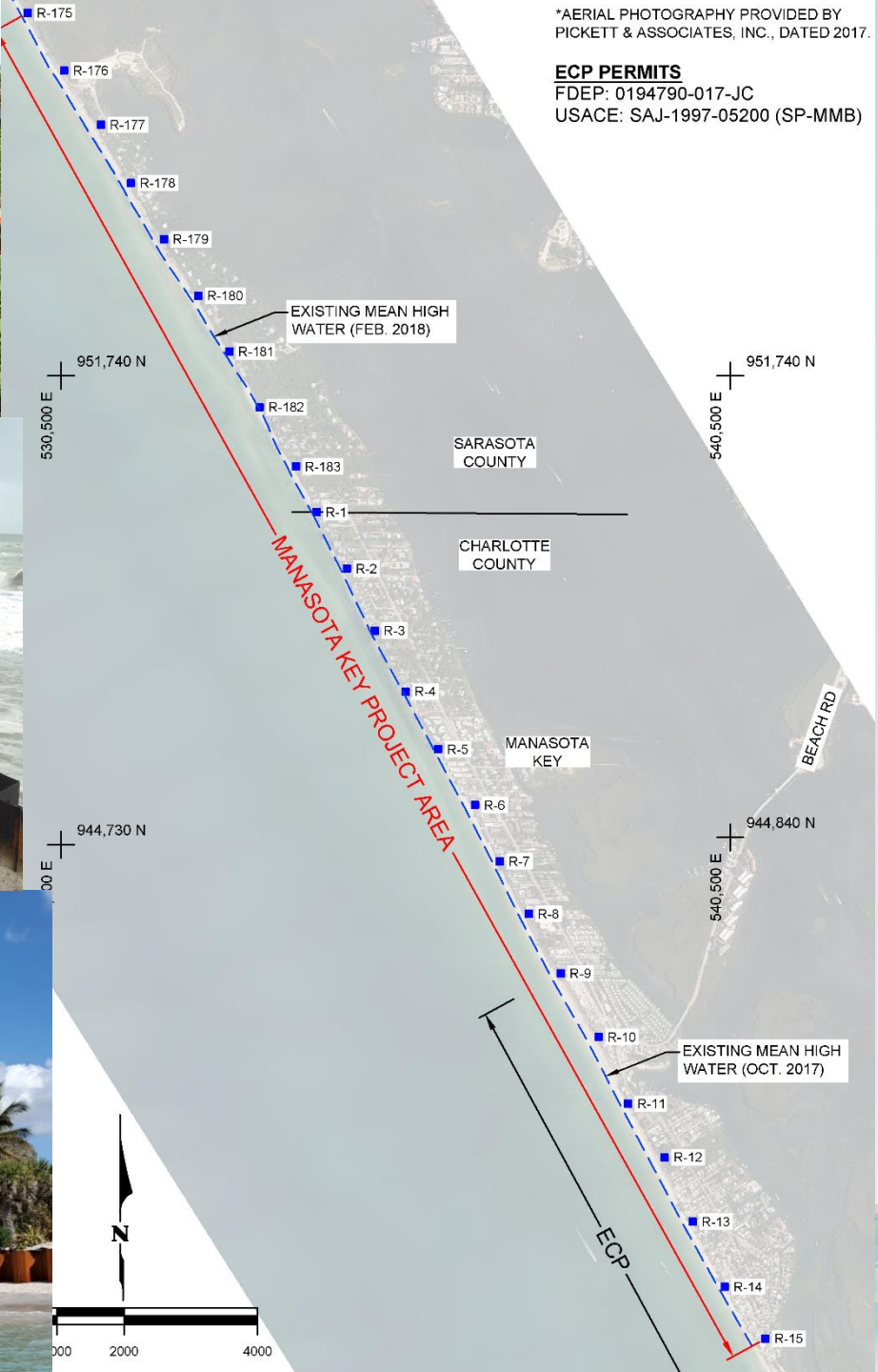
**January 4, 2024**



# OUTLINE

- 2020 Manasota Key Beach Restoration
- 2020 South Beach Nourishment
- 2021 Mitigation Reef
- 2022 Erosion Control Project (aka Stump Pass Navigation Channel and Beach Nourishment)
- Hurricane Impacts / Recovery Projects





# Manasota Key

- Sarasota-Charlotte Joint Project (R-175 to R-15.4)
- Overlaps With Charlotte's Existing Erosion Control Project (ECP) from Englewood Beach Park to State Park (R-9 to R-15.4)
- Constructed Concurrent with South Beach Fill Nourishment on Knight-Don Pedro Island

# 2020 Project Facts

- Length = 3.82 Miles
- Volume Placed = 880,280 CY
- Borrow Area ~ 4.2 NM Offshore
- Contractor: Great Lakes Dredge & Dock
- Dredge Details: Padre Island, Dodge Island
- Engineer's Opinion of Cost: \$30,550,320
- Bid Range: \$30,451,850 - \$32,505,000
- Estimated "Regional" Savings ~ \$8 Mil
- Avg Production Rate ~ 18,340 CY/Day
- State Stats: Ranked 3<sup>rd</sup>(Vol), 4<sup>th</sup>(Length)



First Hopper Load from Borrow Area to Manasota Key



Cost Share ~ \$12.65 Mil (35%)

Charlotte County R-9



February 2020  
Looking North



THANKS TO  
Charlotte and  
Sarasota BCC's,  
Project Managers,  
& Staff

Charlotte County R-9



May 2020  
Looking North



Charlotte County R-7



February 2020  
Looking North



# THANKS AND PRAISE Great Lakes Dredge & Dock

Charlotte County R-7



May 2020  
Looking North



Charlotte County R-6.5



February 2020  
Looking North



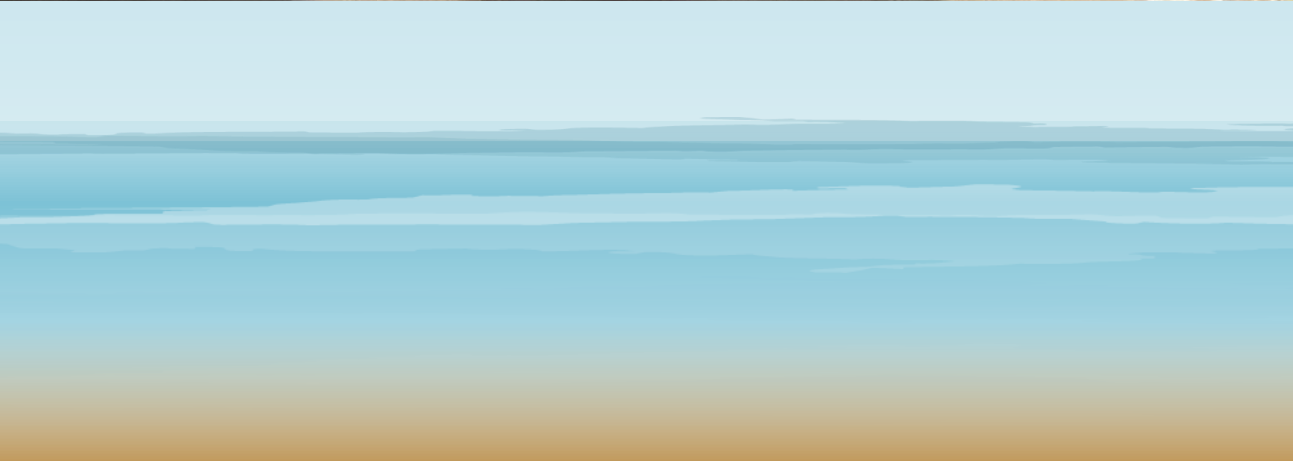
# THANKS AND PRAISE

## Manasota Key Residents, Committees Ambassadors, & Stakeholders

Charlotte County R-6.5



May 2020  
Looking North



Charlotte County R-6



February 2020  
Looking North



# THANKS AND PRAISE

## Our Consulting Team: CEG, OSI, RCG, AVS, Sono, and PCI

Charlotte County R-6

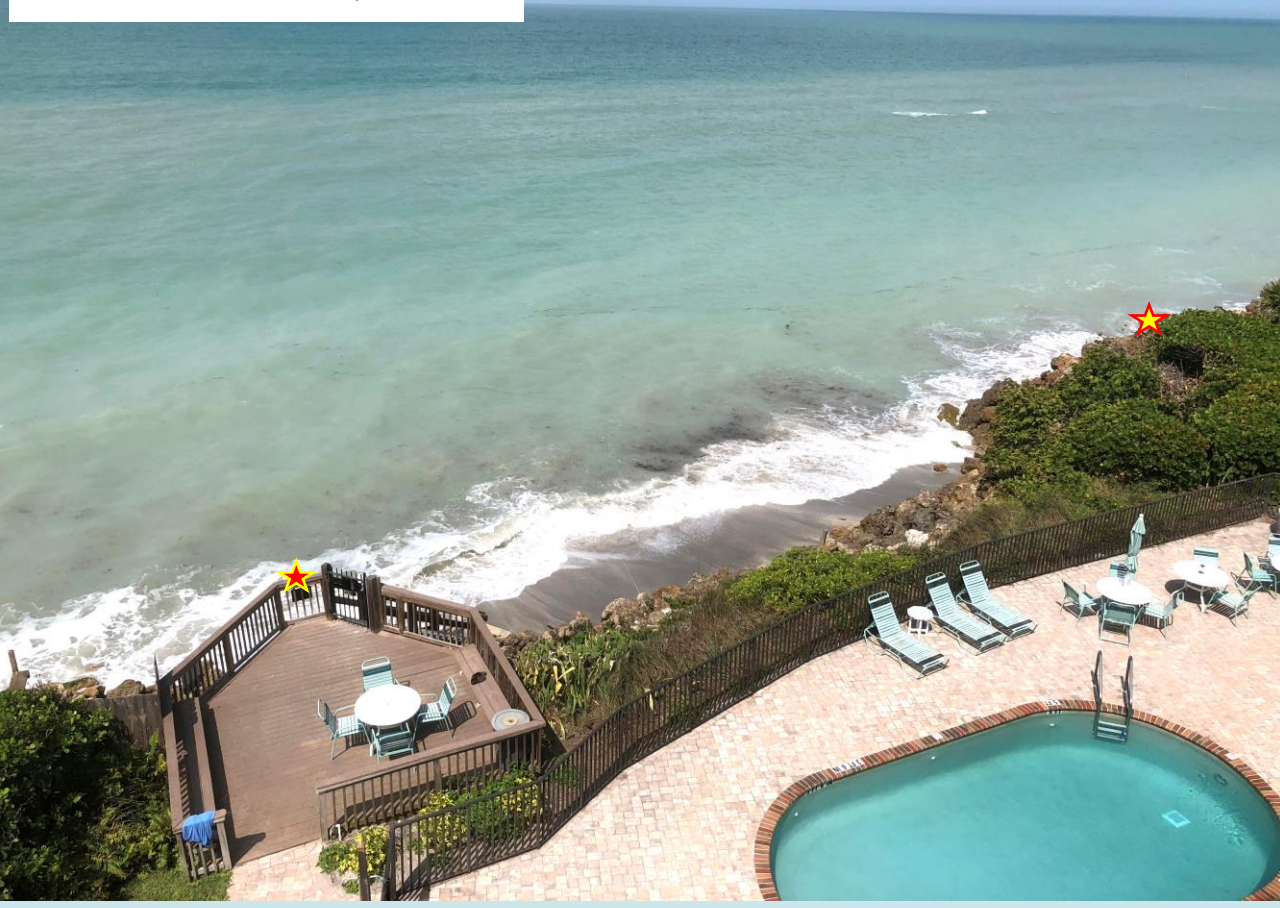


May 2020  
Looking North



Charlotte County R-1.5

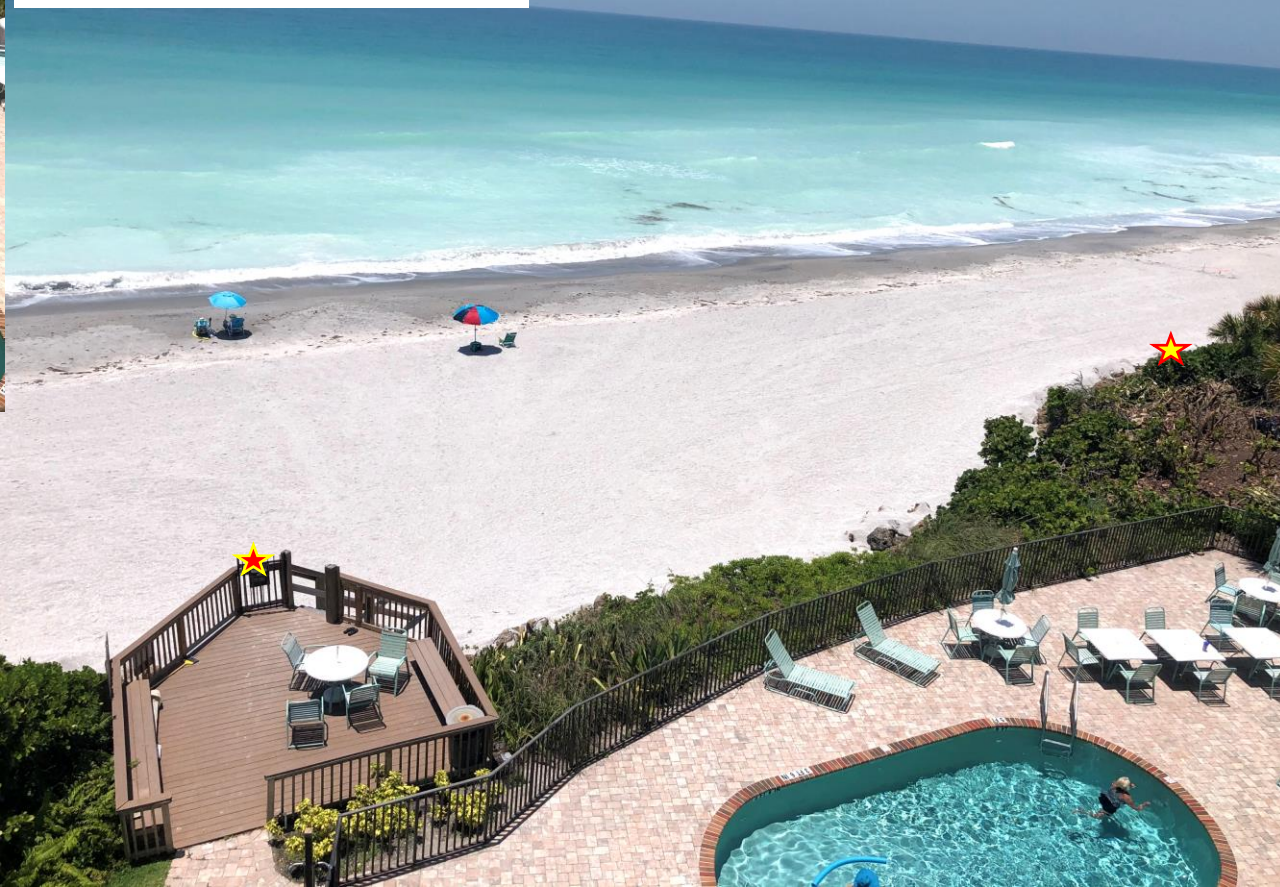
February 2020



THANKS TO  
 FDEP, FFWCC, USACE,  
 NMFS, & USFWS

Charlotte County R-1.5

March 2020



Photos Courtesy of Damian Ochab

# South Beach Fill (2020)

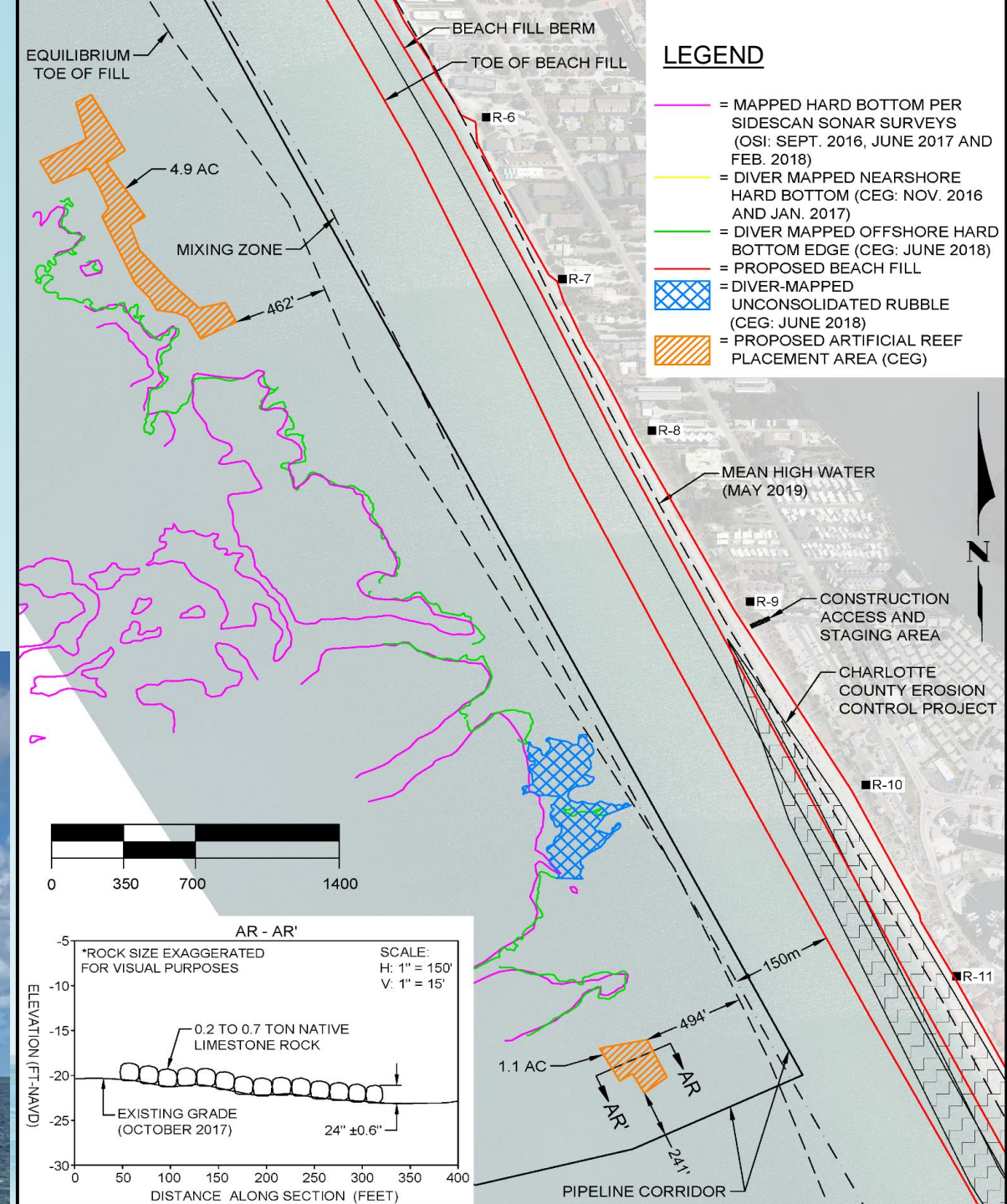
- Length = 1.65 Miles
- Volume Placed = 340,980 CY
- Borrow Area ~ 4.2 NM Offshore



Courtesy of GLDD

# Mitigation Reef (2021)

- Area = 3.9 Acres (Net) (80%-N, 20%-S)
- Estimated # of Rocks = 16,472
- Location ~ 1400 Ft Offshore
- Contractor: Cayo LLC
- Engineer's Opinion of Cost: \$6,957,000
- Bid Range: \$6,817,100 - \$9,100,000



# Mitigation Reef

## NOTES

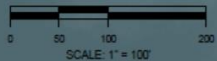
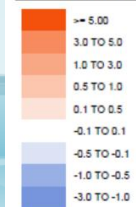
1. NEARSHORE HARDBOTTOM MAPPING SURVEY CONDUCTED BY OSI, INC. JUNE 12-19, 2017.
2. MITIGATION REEF SURVEYS CONDUCTED BY HYATT SURVEY SERVICES, INC. ON JANUARY 20, 2021 AND MARCH 9, 2021.
3. MITIGATION REEF PERIMETER SURVEY CONDUCTED BY CEG, INC. ON JANUARY 27, 2021 AND FEBRUARY 26, 2021.
4. PLANE COORDINATES ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE WEST ZONE OF FLORIDA AND REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83).
5. INFORMATION SHOWN HEREON REFLECTS CONDITIONS AS THEY EXISTED ON THE SURVEY DATE SHOWN AND CAN ONLY BE CONSIDERED INDICATIVE OF CONDITIONS AT THAT TIME.
6. AERIAL PHOTOGRAPHY PROVIDED BY PICKETT & ASSOCIATES, INC., DATED SEPTEMBER 4, 2020.



## LEGEND

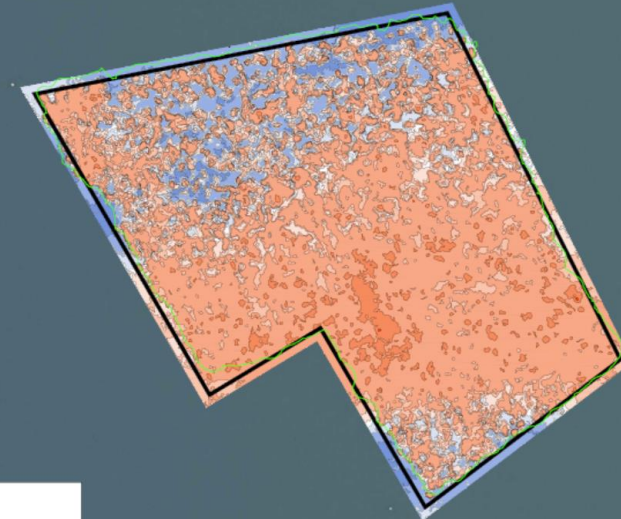
- NORTH REEF LIMITS
- SURVEYED REEF LIMITS

## RELIEF CONTOURS (FT)



## NOTES

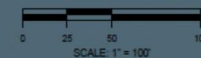
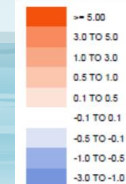
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## LEGEND

- NORTH REEF LIMITS
- SURVEYED REEF LIMITS

## RELIEF CONTOURS (FT)



# Offshore Hardbottom Monitoring

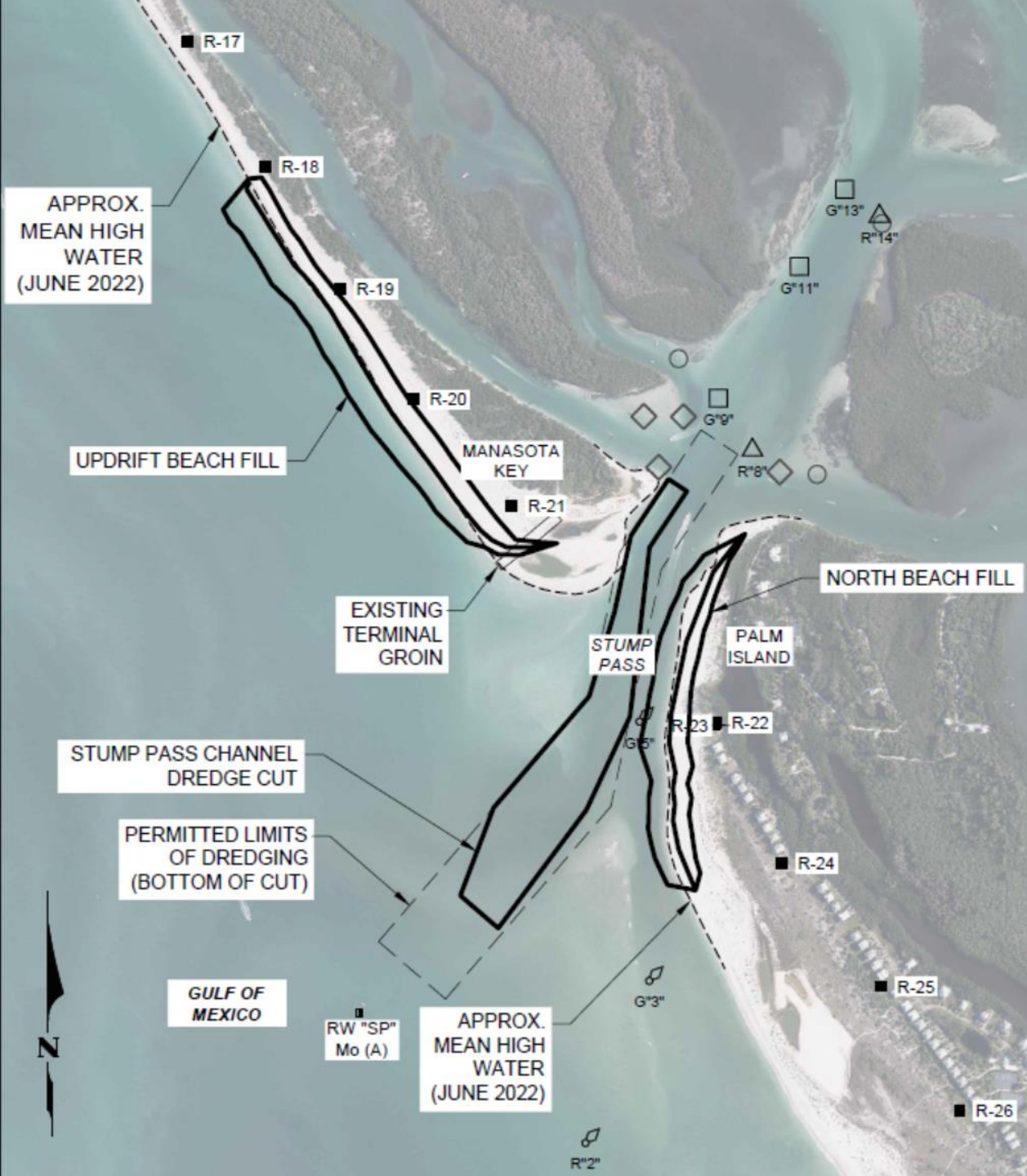


**2020 Manasota Key Beach Restoration Project**  
**ETOF Adjacent Offshore Hardbottom in Charlotte County**  
**2019 Pre-construction, 2021 Year 1 Post-construction**  
**and 2023 Year 3 Post-construction Diver Hardbottom Edge Mapping Surveys**

**Figure 4**

# 2022 Erosion Control Project

- Updrift Beach: 107,000 CY
- North Beach: 100,000 CY
- Stump Pass: 218,000 CY (dredged)



# HURRICANE IAN

- Fifth-strongest hurricane on record to strike the U.S.
- Cat 5 with maximum sustained winds of 160 mph
- Made landfall near Cayo Costa on Sep 28, 2022 at 3:05 PM EDT with maximum sustained winds of 155 mph



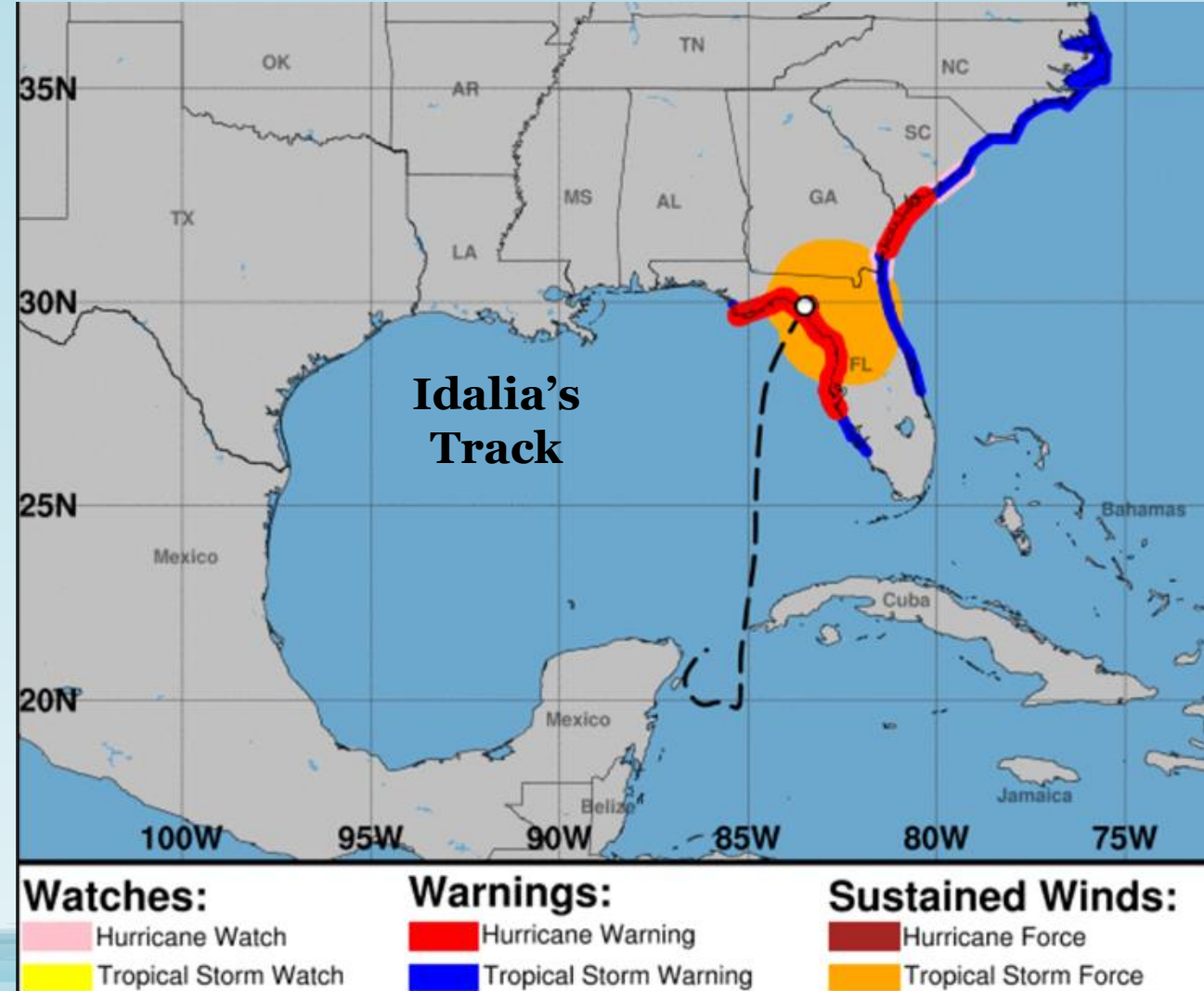
# HURRICANE NICOLE

- Cat 1 Hurricane
- Made landfall at Vero Beach on Nov. 10, 2022
- Swept across Florida causing beach erosion and flooding to SW FL



# HURRICANE IDALIA

- Cat 3 with maximum sustained winds of 125 mph
- Made landfall near Keaton Beach on Aug. 30, 2023 at 7:45 a.m. EST
- Storm surge ~ 7 -12 ft highest values recorded since 1993 Storm of the Century



# Charlotte County R-15

March 2021  
Looking North



# Charlotte County R-15

March 2023  
Looking North

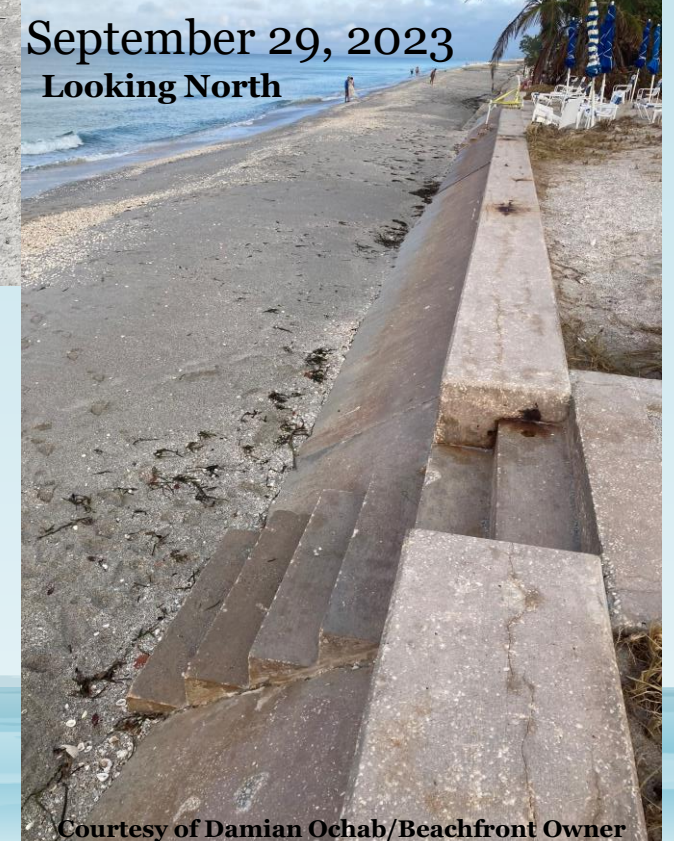


# Charlotte County R-15

September 13, 2023  
Looking North

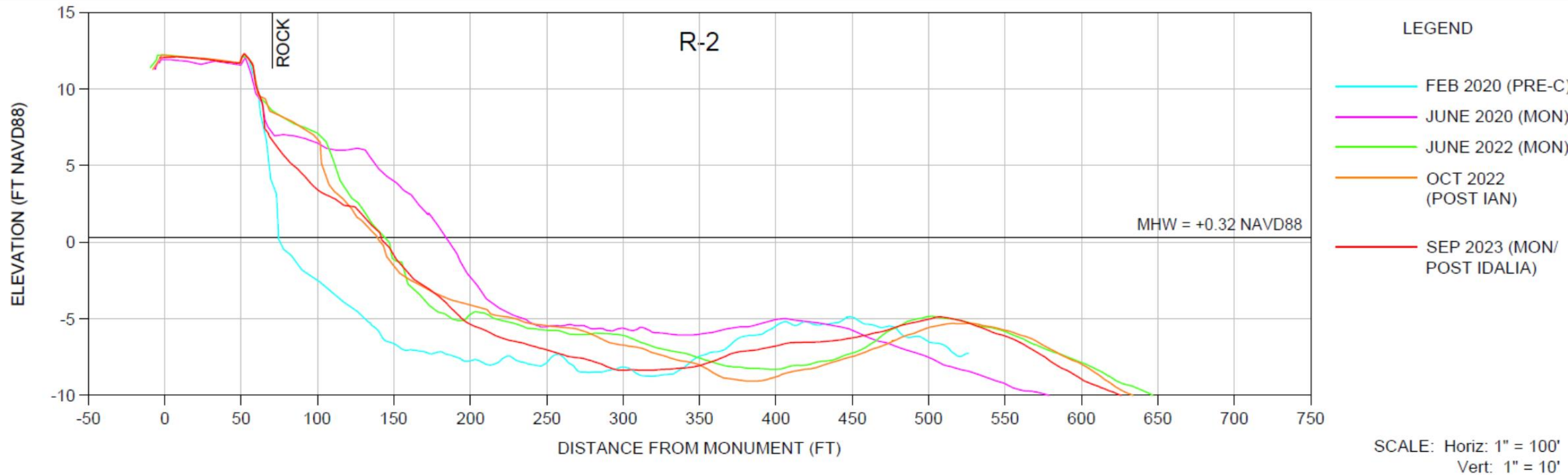


September 29, 2023  
Looking North

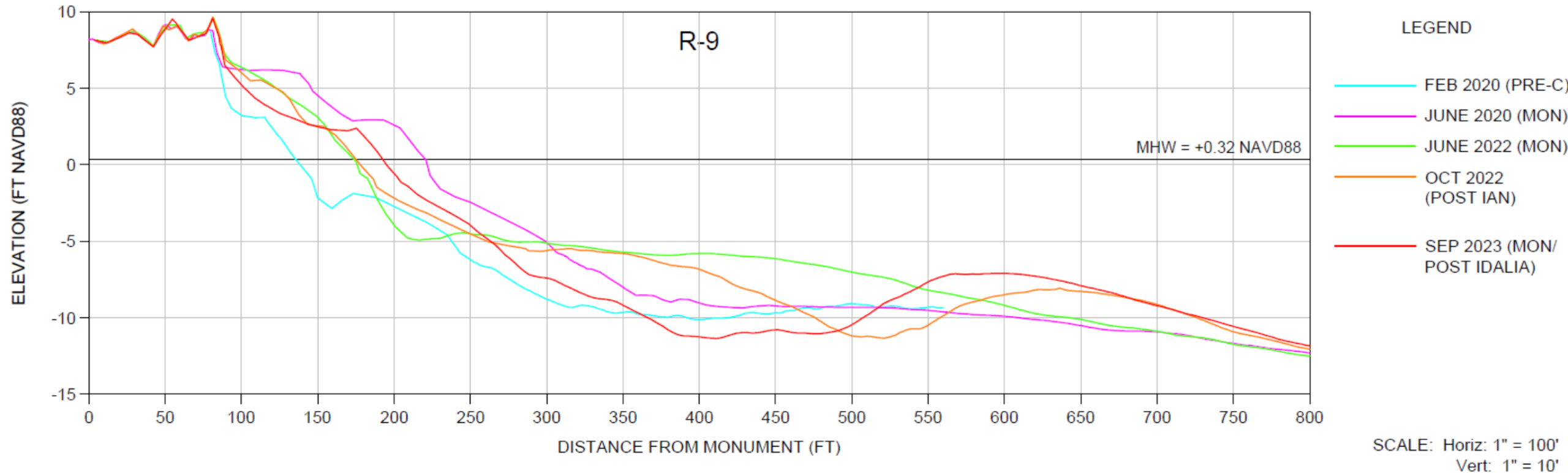


Courtesy of Damian Ochab/Beachfront Owner

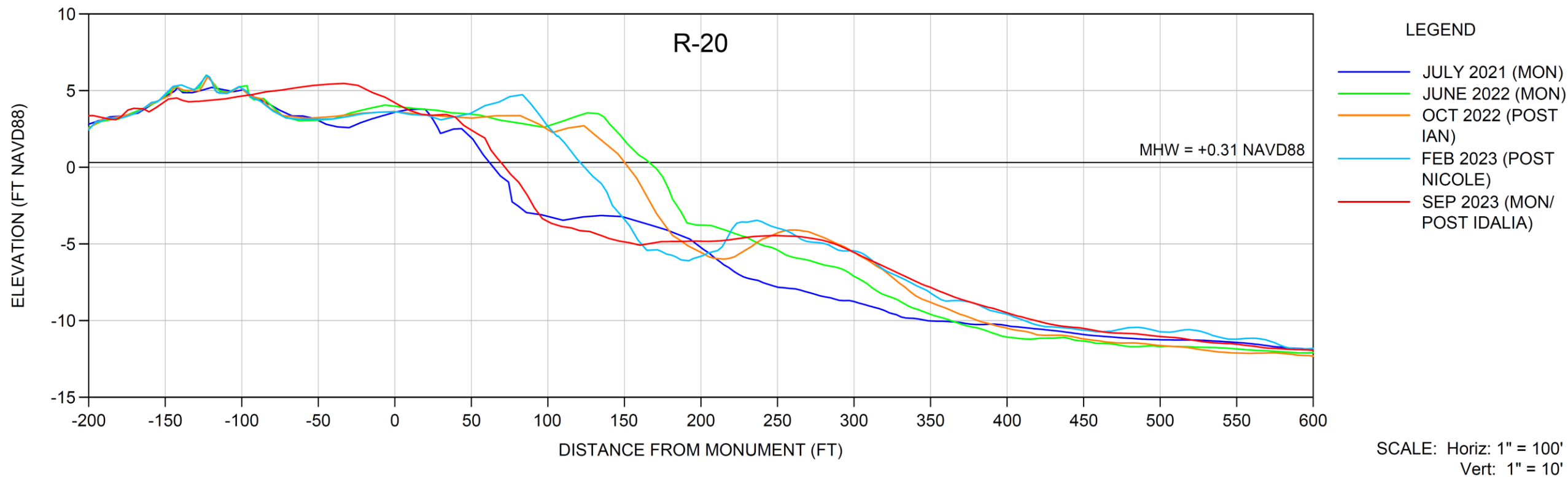
# Manasota Key



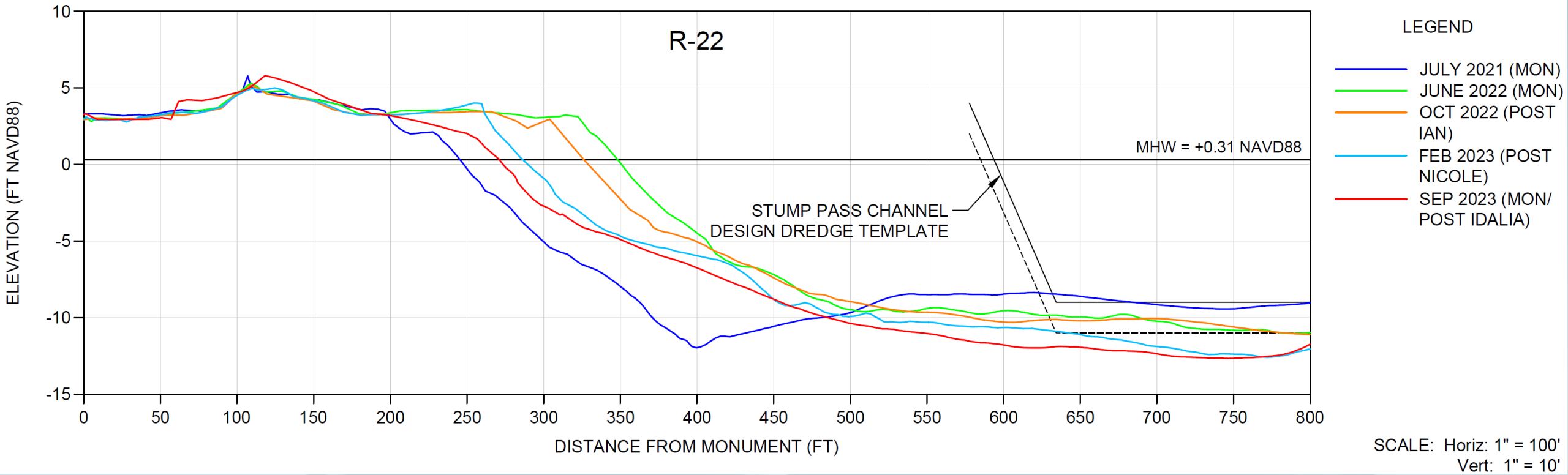
# Manasota Key



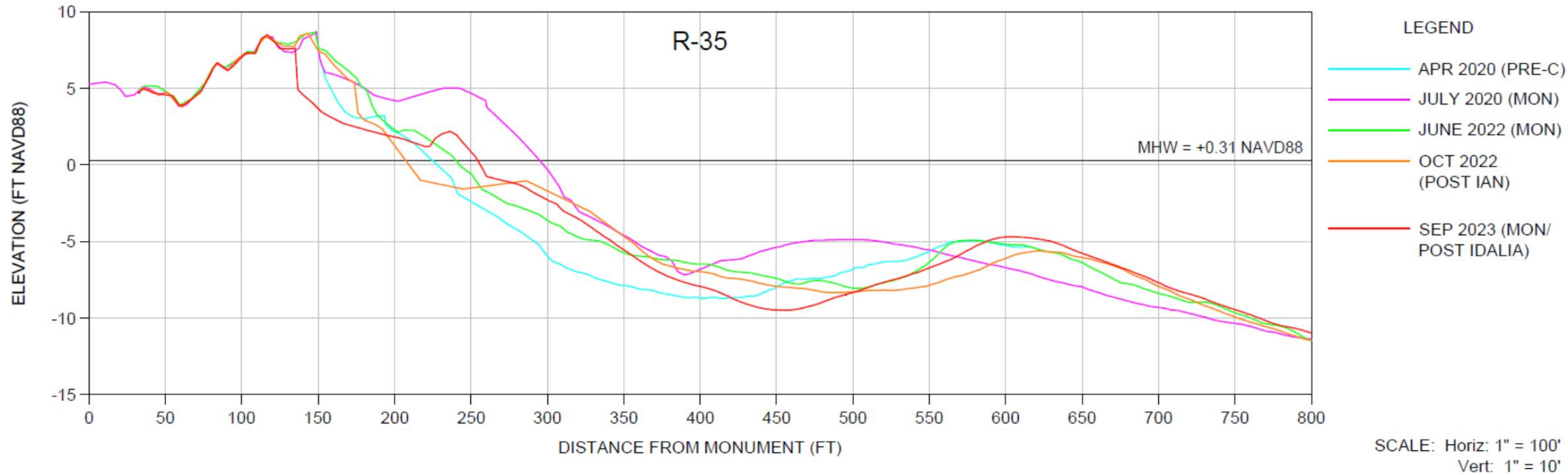
# Stump Pass Beach State Park



# North Beach (Palm Island)



# South Beach (Knight-Don Pedro)



# HURRICANE COMBINED IMPACTS



**2020 Restoration**

**2022 Nourishment (Stump Pass)**

**2020 Nourishment**

# STUMP PASS POST-IDALIA CONDITION SURVEY

**OUTER CHANNEL  
MINIMUM RESTRICTED  
DEPTH OF 7.7 FT  
NAVD88 (6.4 FT MLW)**

(-6.7 FT MLW)

**PUBLISHED TIDAL INFORMATION**  
TIDAL DATUM FROM VENICE, GULF OF MEXICO, FLORIDA  
BASED ON FLORIDA 872 5858 TIDAL STATION, PUBLISHED 09-15-2010

LENGTH OF SERIES = 4 MONTHS  
TIDAL PERIOD = JUNE 1990 - SEPTEMBER 1990  
TIDAL EPOCH = 1983 - 2001  
CONTROL TIDAL STATION = NAPLES, GULF OF MEXICO (872 5110)

ELEVATIONS OF TIDAL DATUMS ARE REFERENCED IN NAVD 1988

MEAN HIGH WATER (MHW) = +0.31' NAVD88  
MEAN LOW WATER (MLW) = -1.25' NAVD88  
MEAN LOWER LOW WATER (MLLW) = -1.62' NAVD88

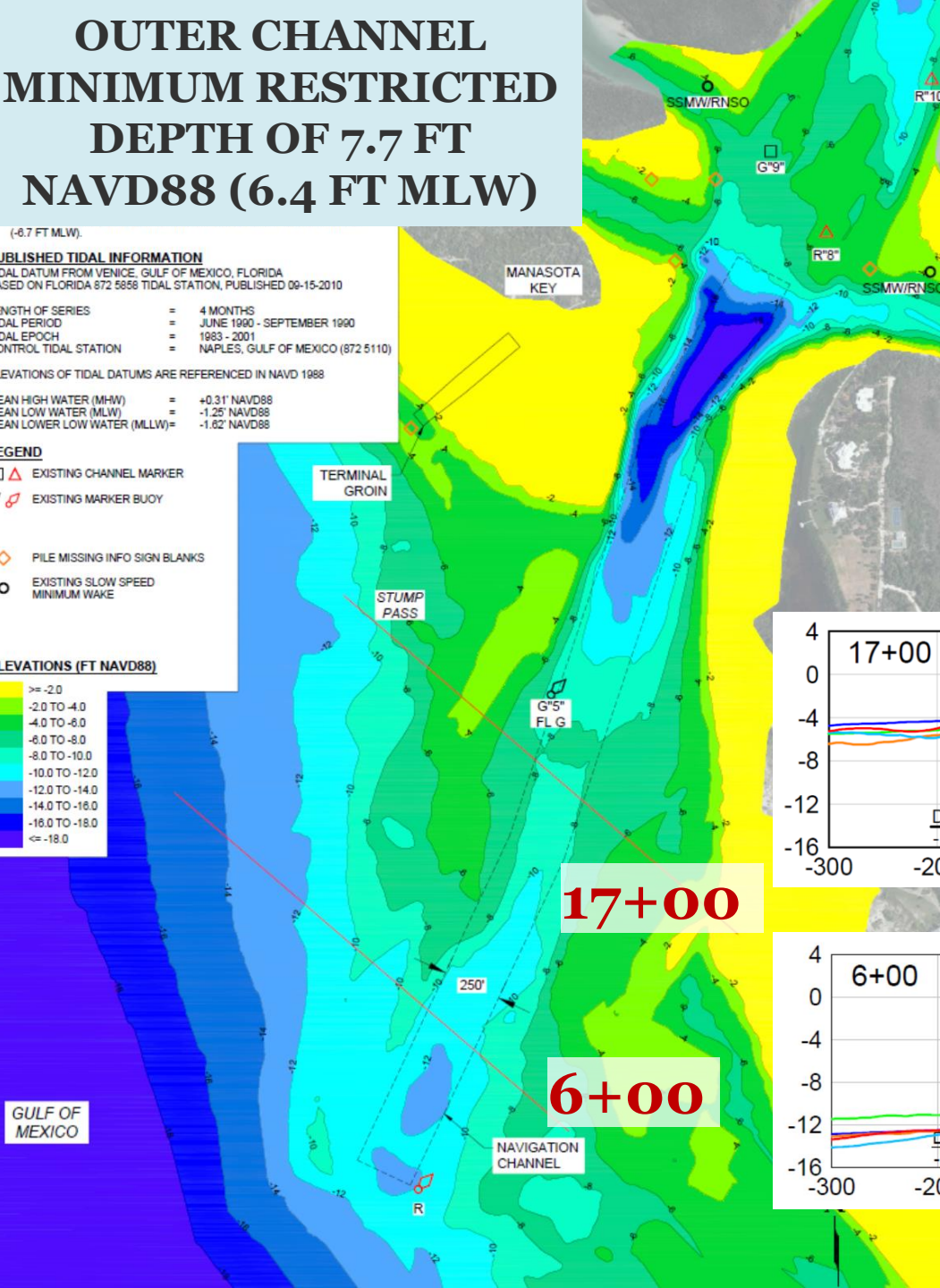
**LEGEND**

□ △ EXISTING CHANNEL MARKER  
⊕ EXISTING MARKER BUOY

◇ PILE MISSING INFO SIGN BLANKS  
○ EXISTING SLOW SPEED MINIMUM WAKE

**ELEVATIONS (FT NAVD88)**

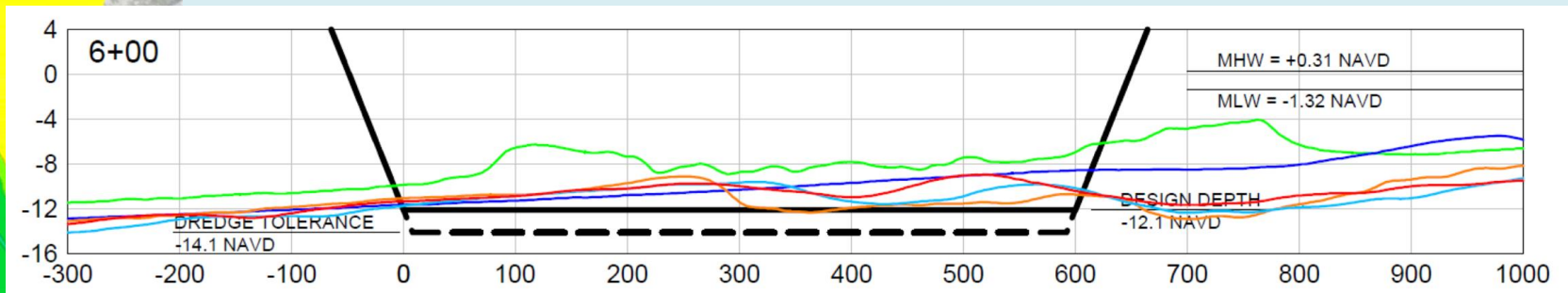
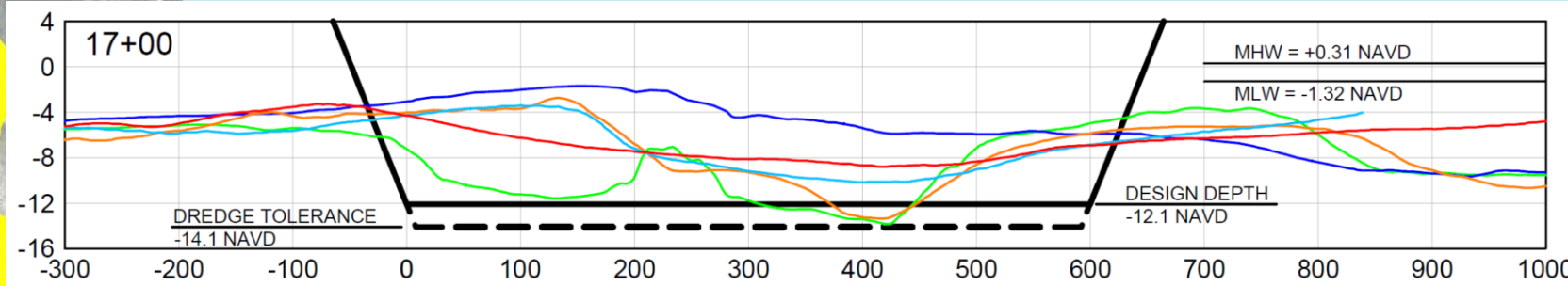
>= -2.0  
-2.0 TO -4.0  
-4.0 TO -6.0  
-6.0 TO -8.0  
-8.0 TO -10.0  
-10.0 TO -12.0  
-12.0 TO -14.0  
-14.0 TO -16.0  
-16.0 TO -18.0  
≤ -18.0



**LEGEND**

— DEC 2, 2021 (PRE-CON)  
— JUNE 28-29, 2022 (MON)  
— OCT 8, 2022 (POST IAN)

— MAR 8, 2023 (POST NICOLE)  
— SEP 14, 2023 (MON/POST IDALIA)



# EROSION CONTROL PROJECT SUMMARY

- Total Volume Impact ~ 238K CY (Ian, Nicole, Idalia)
- Stump Pass Borrow Area ~ Hydraulic Dredging and Pipeline
- FEMA
  - Combined: 142,068 CY \$3.17 Mil
- State of FL Recovery Plan
  - Combined: 96,450 CY \$1.11 Mil (Approved, Seeking Additional \$2.28 Mil)
- Construction Window: 2024-25 Pending FEMA Idalia / Improved Project Approvals
- Construction Budget: \$7.09 Mil

# MANASOTA KEY PROJECT SUMMARY

- Total Volume Impact ~ 70K CY (Ian, Nicole, Idalia)
- Truck Haul ~ Inland Sand Mine
- FEMA
  - Combined: 50,312 CY \$4.14 Mil
- State of FL Recovery Plan
  - Combined: 19,481 CY \$1.60 Mil (Approved, Seeking Additional \$1.23 Mil)
- Construction Window: 2024-25 Pending FEMA Idalia / Improved Project Approvals
- Construction Budget: \$7.67 Mil

# SCHEDULE

- Post-Idalia Category B Engineering Report Submittal: Jan 2024
- FEMA Requests for Information and Responses: Jan – Feb 2024
- Environmental and Historic Preservation Review: Mar - May 2024
- Project Worksheet and FEMA Approval: June - July 2024
- Final Design: June - July 2024
- Bid Process: Aug - October 2024
- Construction Projects: November - February 2025