

# Monitoring and mapping reference sites and oyster reef restoration sites

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# Mapping Elevations and a Rapid Condition Index

- **Goal:** Determine the optimal elevation target for restoration projects by mapping elevation and condition of reference oyster reefs



- Visual determination of oyster reef condition with a Trimble RTK GPS with 2 cm vertical accuracy

# Data dictionary



## Substrate

- 1-sand
- 2 shell debris
- 3- sorted shell
- 4-loose shell
- 5-Small oyster clusters
- 6-Large oyster clusters
- 7- Platform Reef



## Percent cover

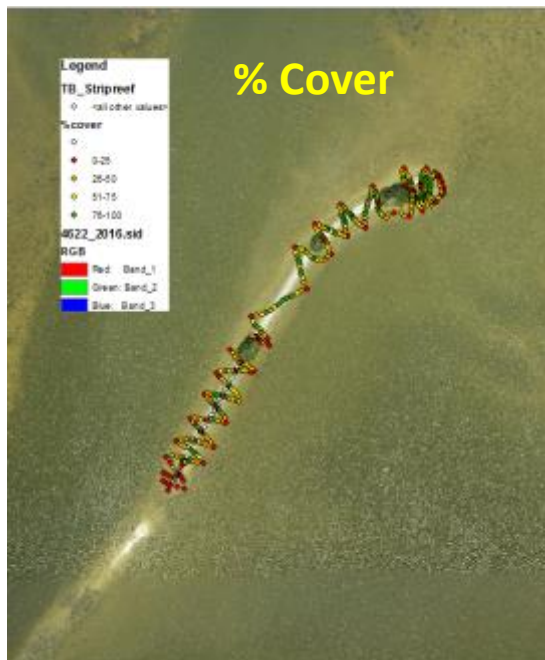
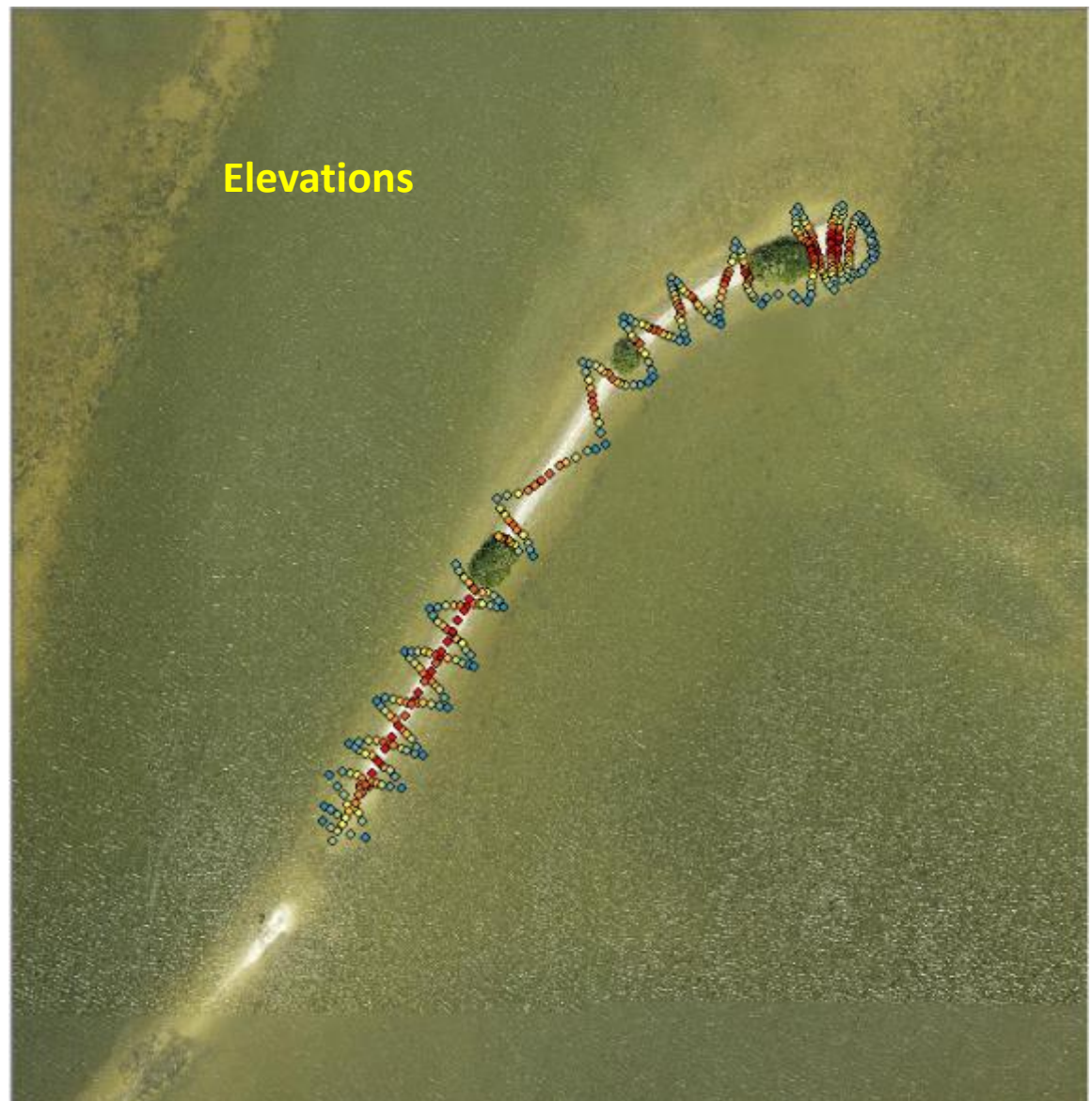
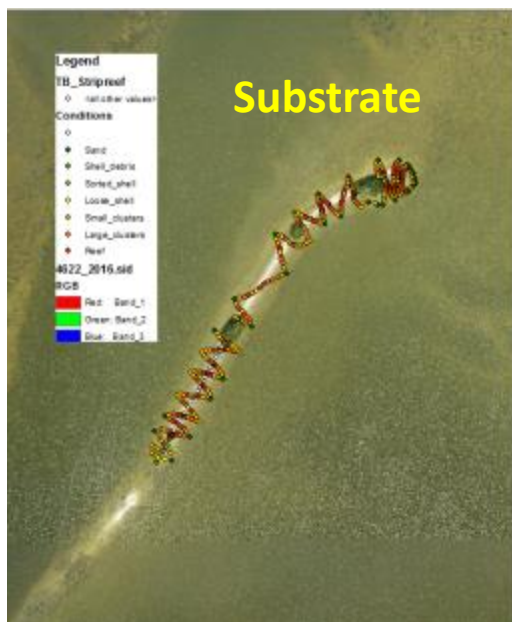
- 0-0%
- 1 0-25%
- 2-25-50%
- 3-50-75%
- 4-75-100%

## % Live

- 1-None
- 2-Low
- 3-High

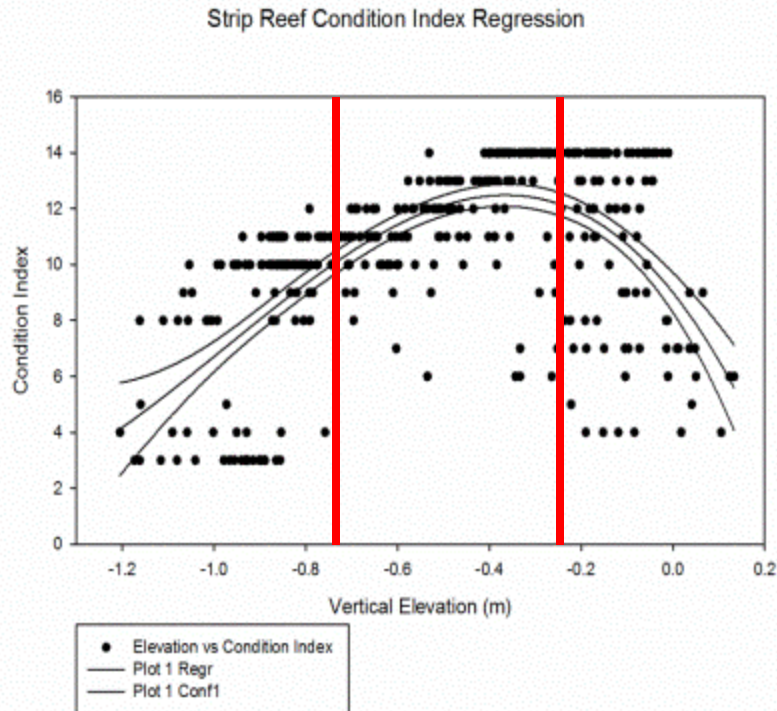




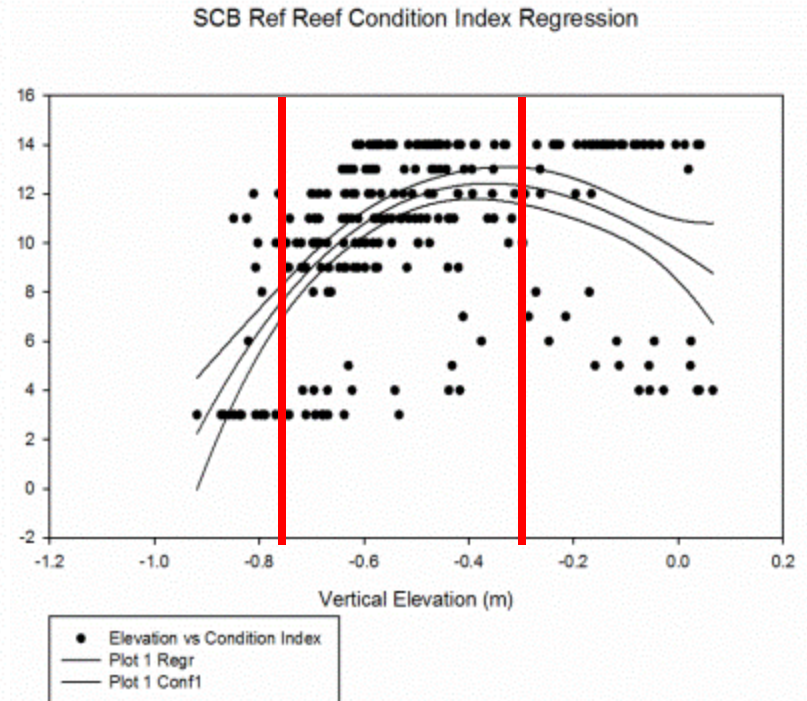


All categories were summed for each point to obtain the “rapid condition index”

## Reference Location A Tarpon Bay



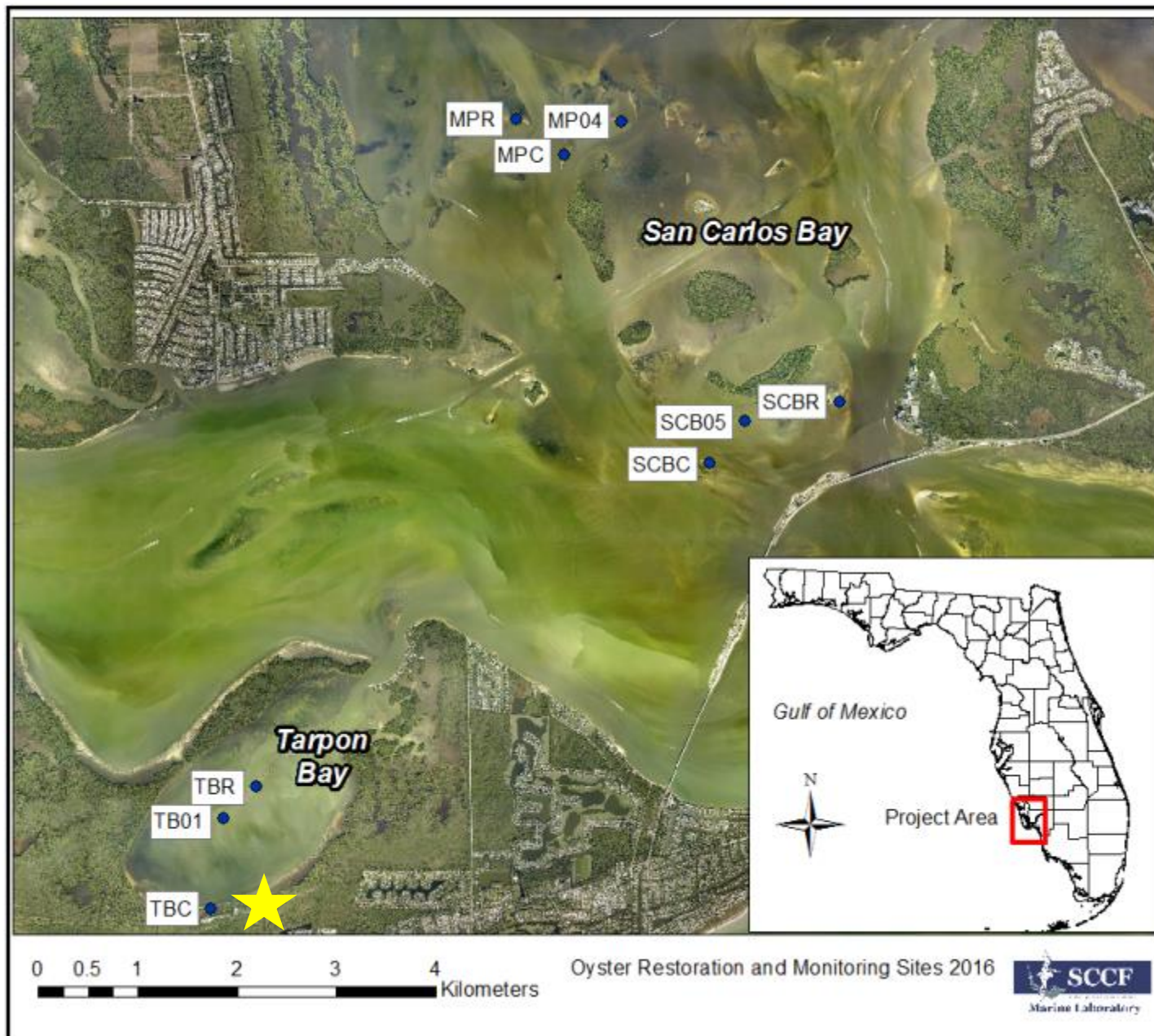
## Location B San Carlos Bay



From the reference oyster reefs, a range of elevations supporting high quality oyster habitat was **-0.75m** to **-0.25m** NGVD

- Restoration and Monitoring of oyster reefs, a BACI approach
  - Before/After
  - Control/Restoration (Impact)/Reference





**Tarpon Bay  
TB01  
Post Restoration  
2018**



**Meters**  
0 12.5 25

2018  
All

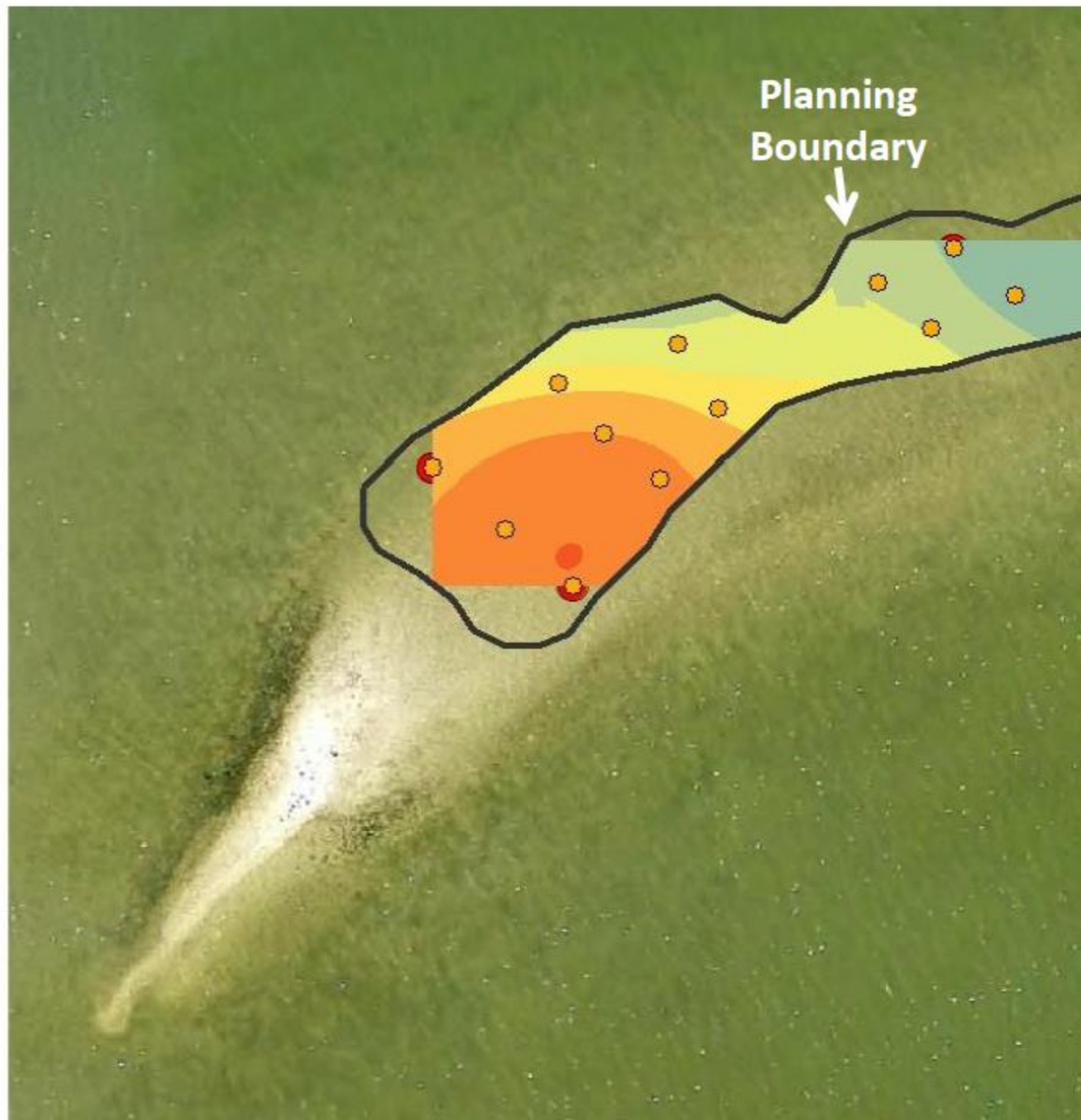




# Tarpon Bay Pre-Restoration Elevations



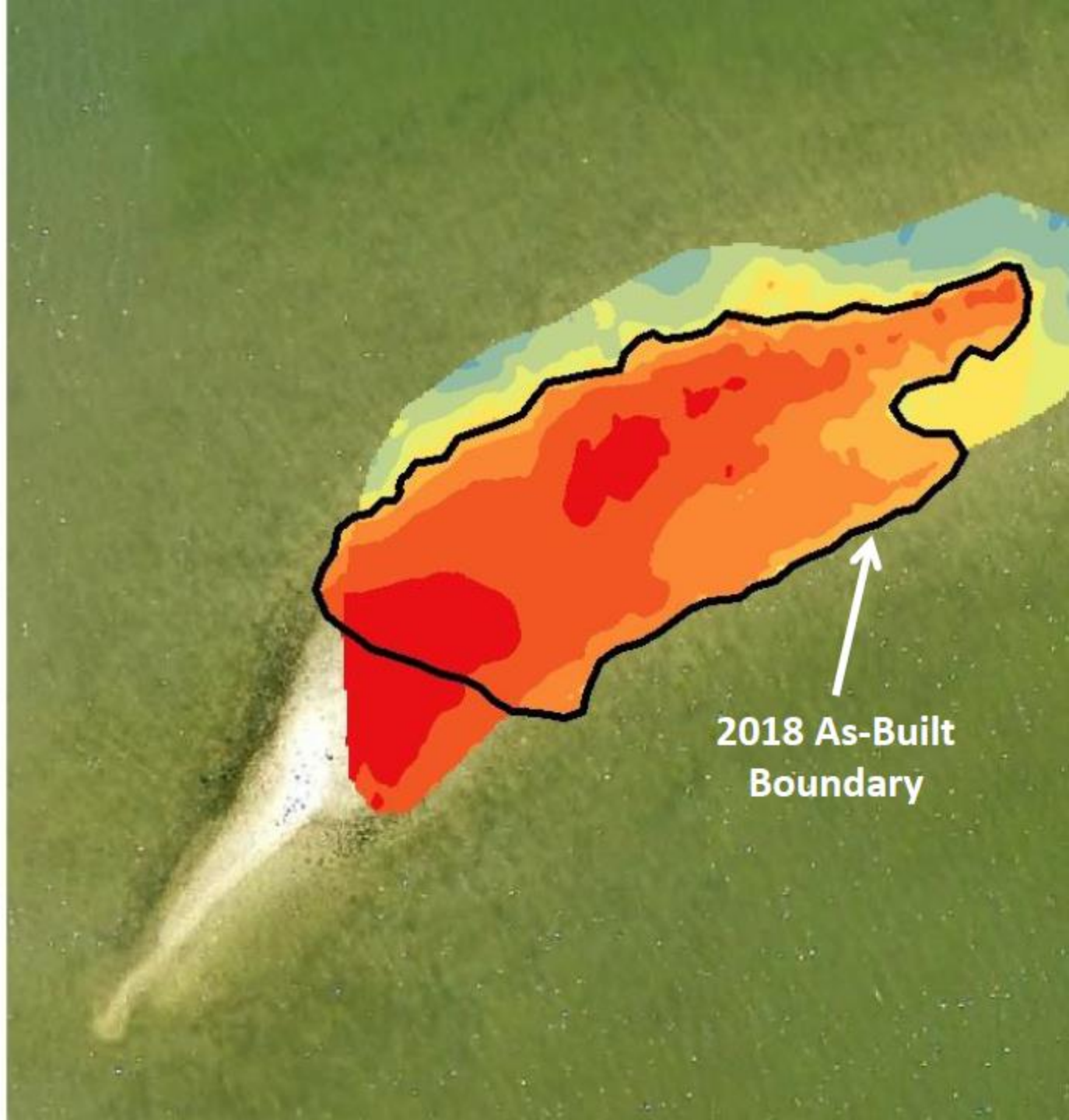
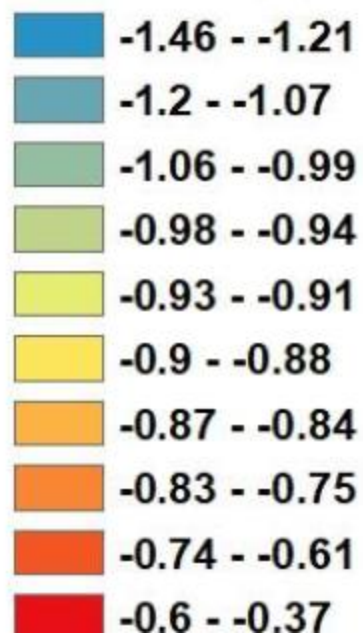
Elevation (m\_MSL)



**Tarpon Bay  
TB01  
2018 As-Built  
Elevations**



**Elevation (m\_MSL)**







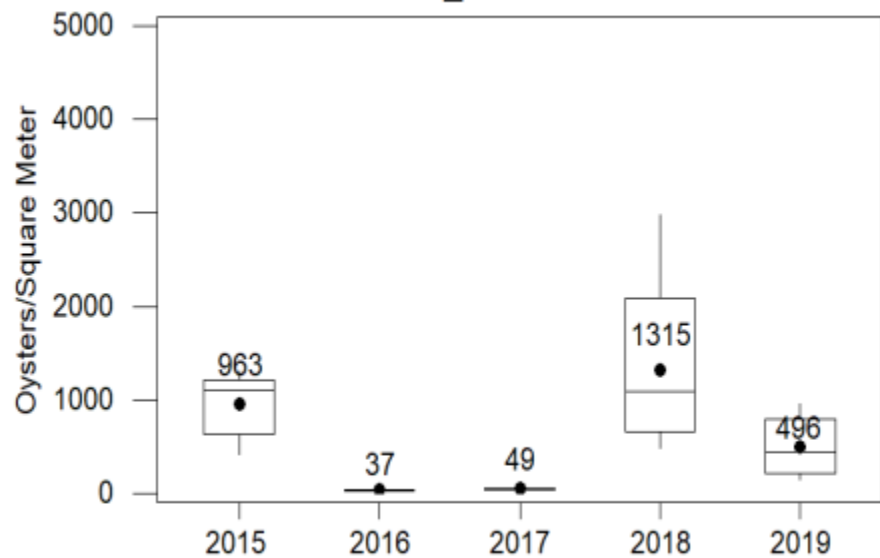




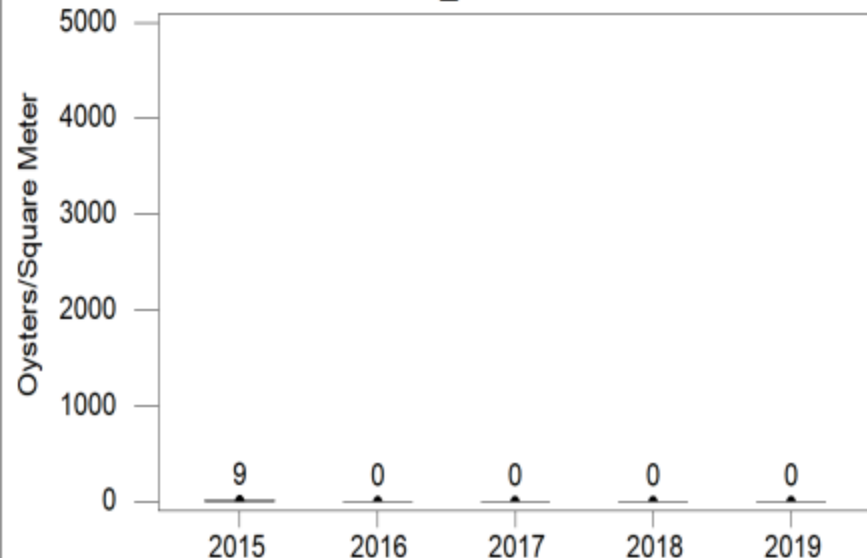




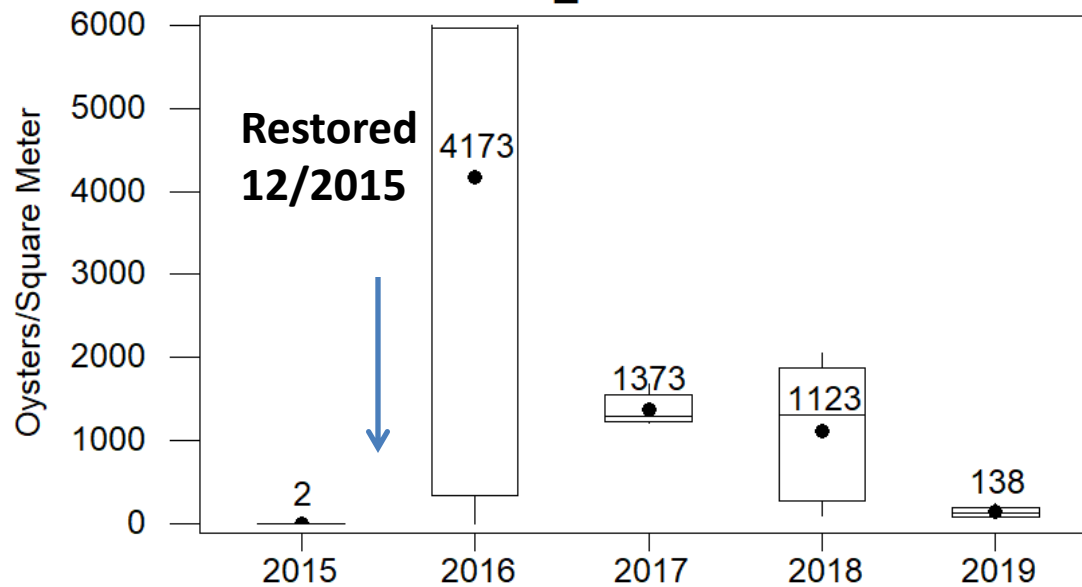
TB\_Reference



TB\_Control



TB\_Restoration





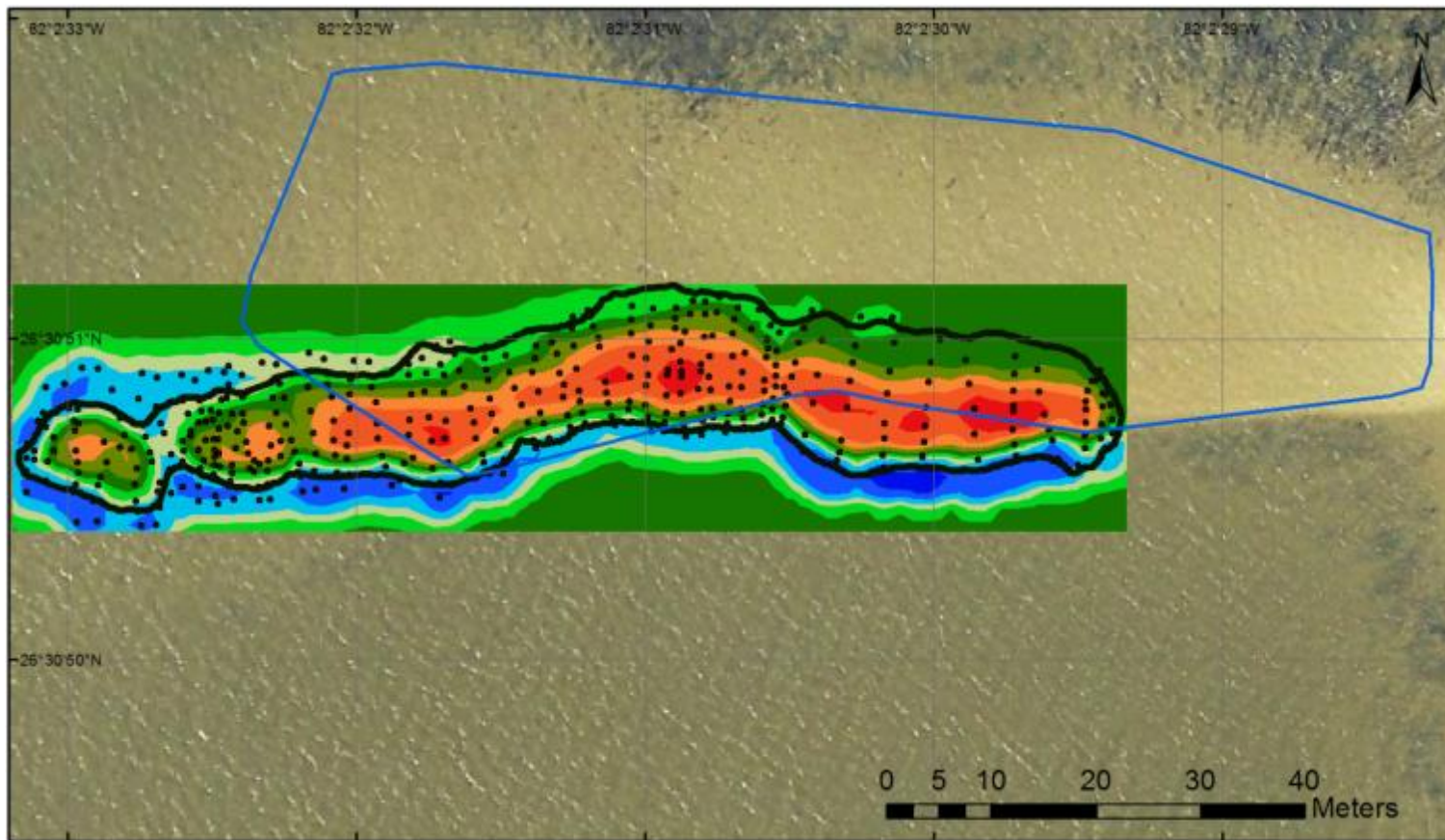
- 2016 Oyster Reef Restoration MP01R
  - FDEP Restoration grant
  - City of Sanibel approval for staging & shell storage
  - \$70K
  - Completed 02/16



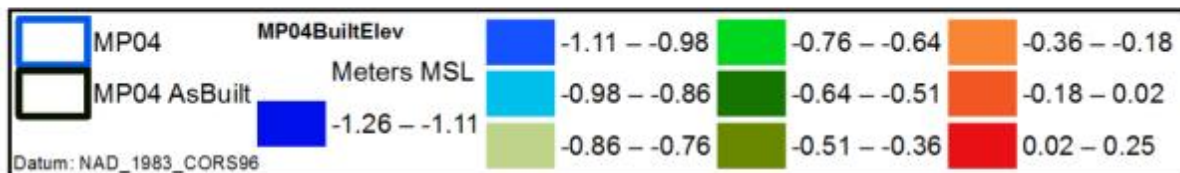




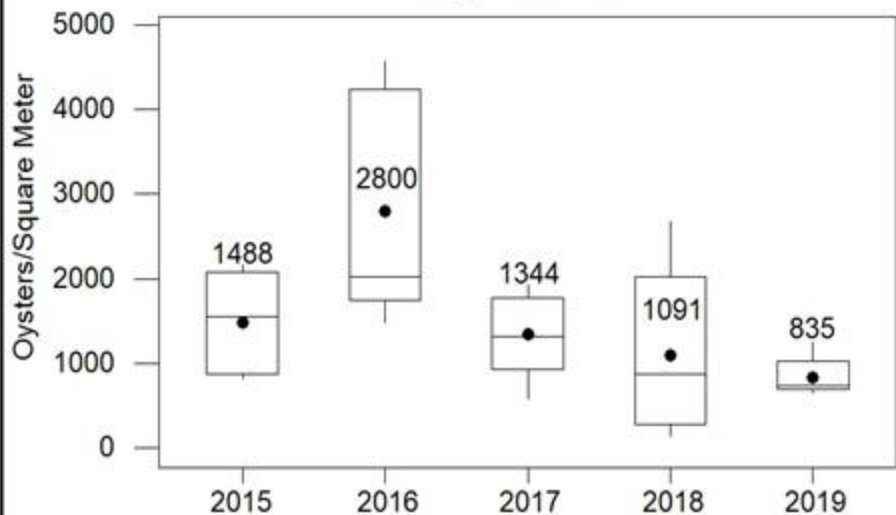




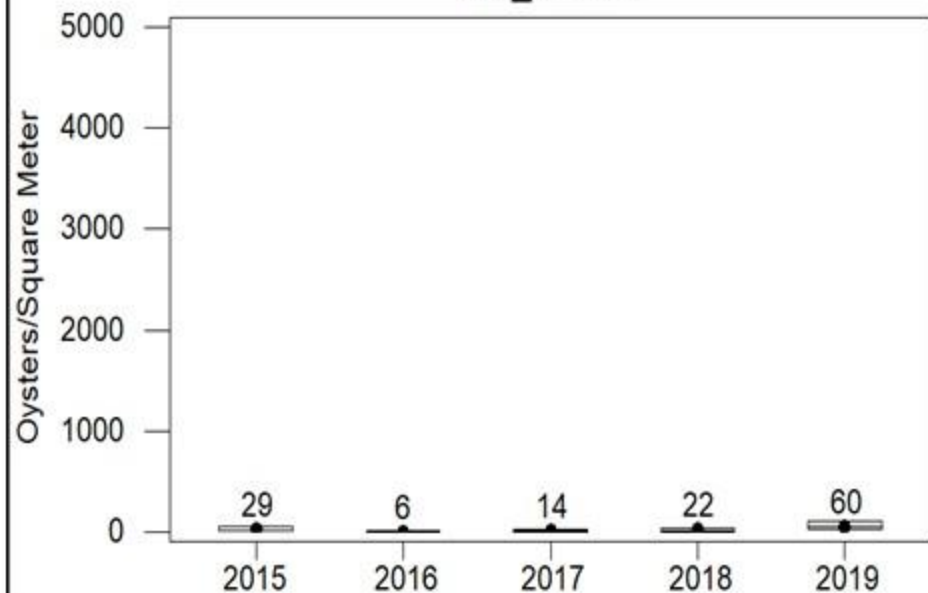
## Matlacha Pass Restored Reef As-Built



MP\_Reference

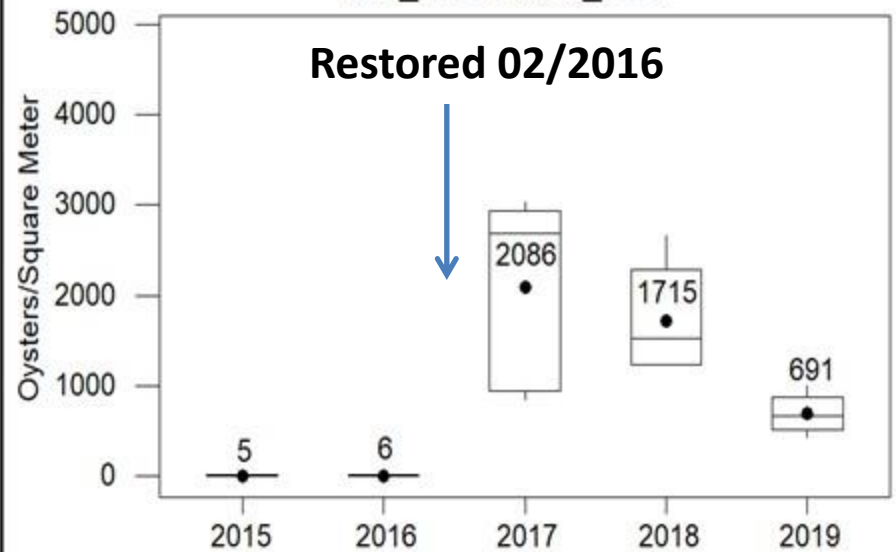


MP\_Control



MP\_Restoration\_Site1

**Restored 02/2016**



- 2018 Oyster Reef Restoration (MP2R)
  - MEHRMA, FWC, Corey Anderson, project manager
  - WCIND, Justin McBride & Mike Campbell
  - \$140K
  - Completed 02/18



2/2017

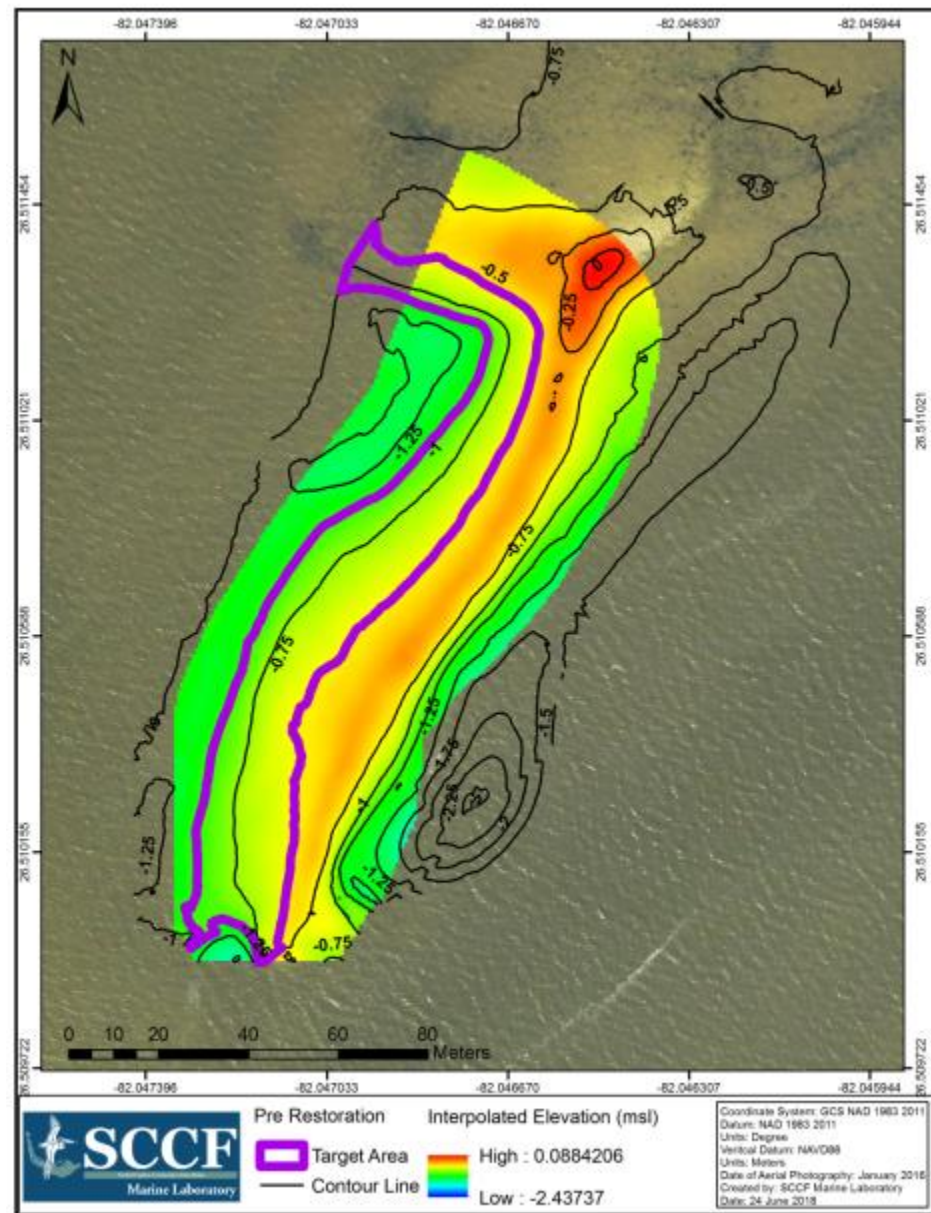
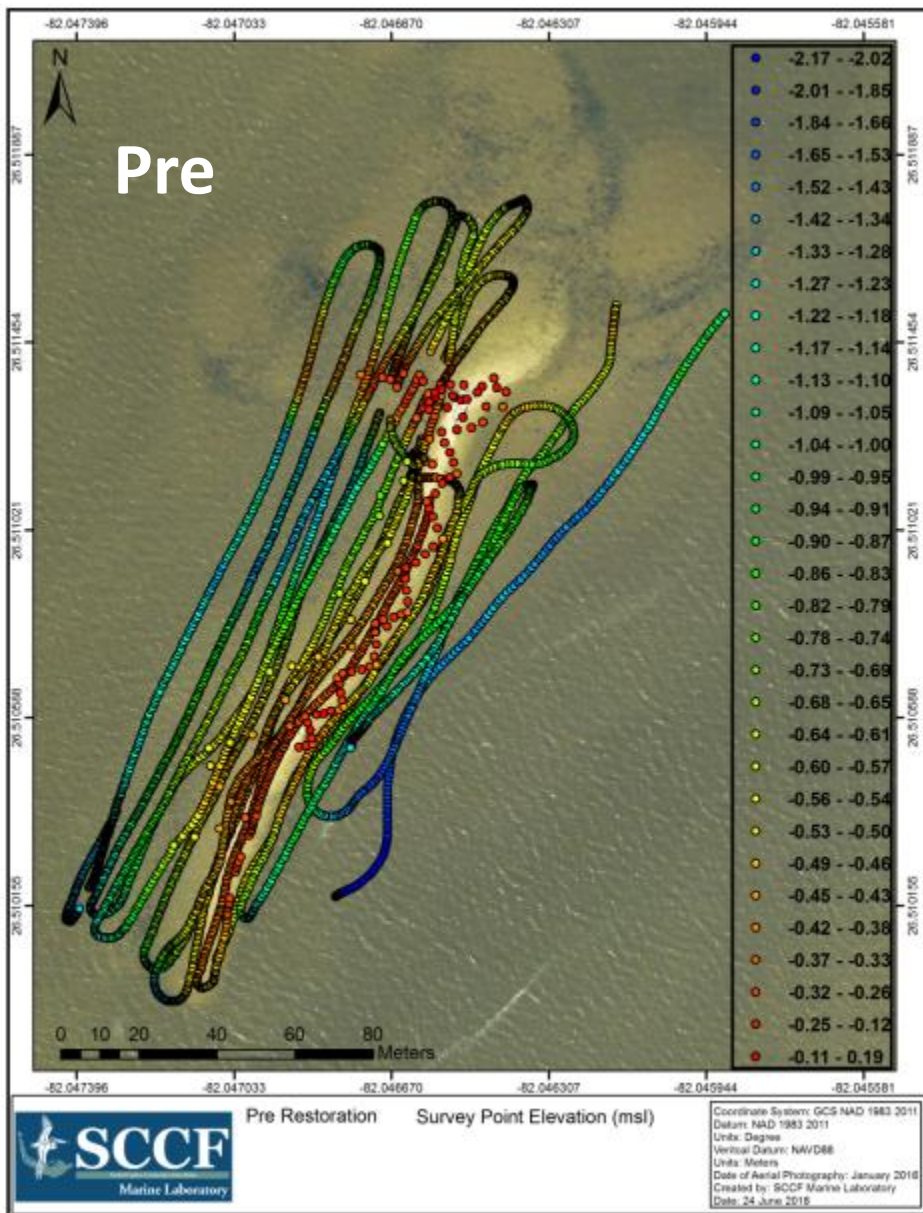
Pre

Google Earth



Post











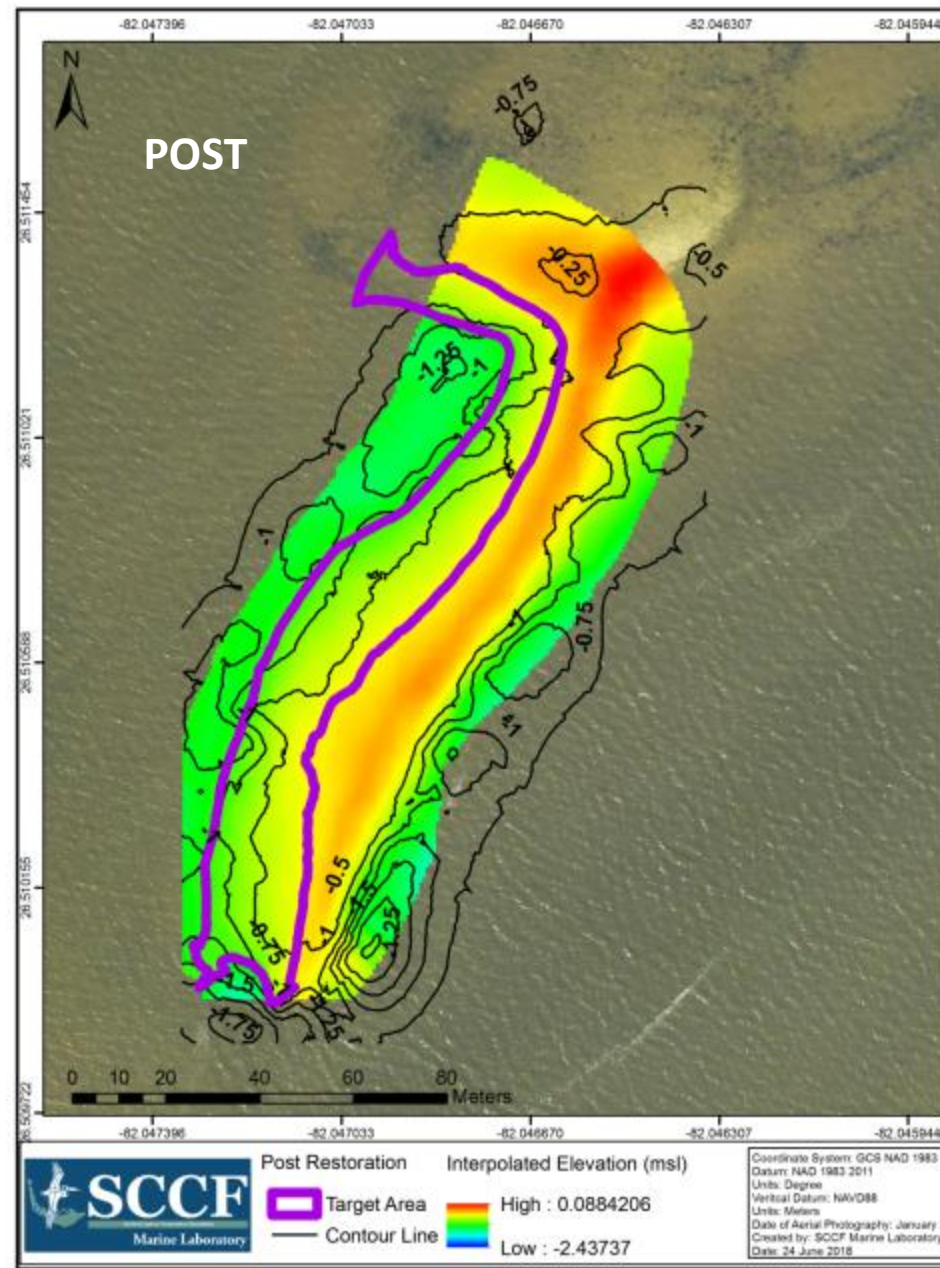
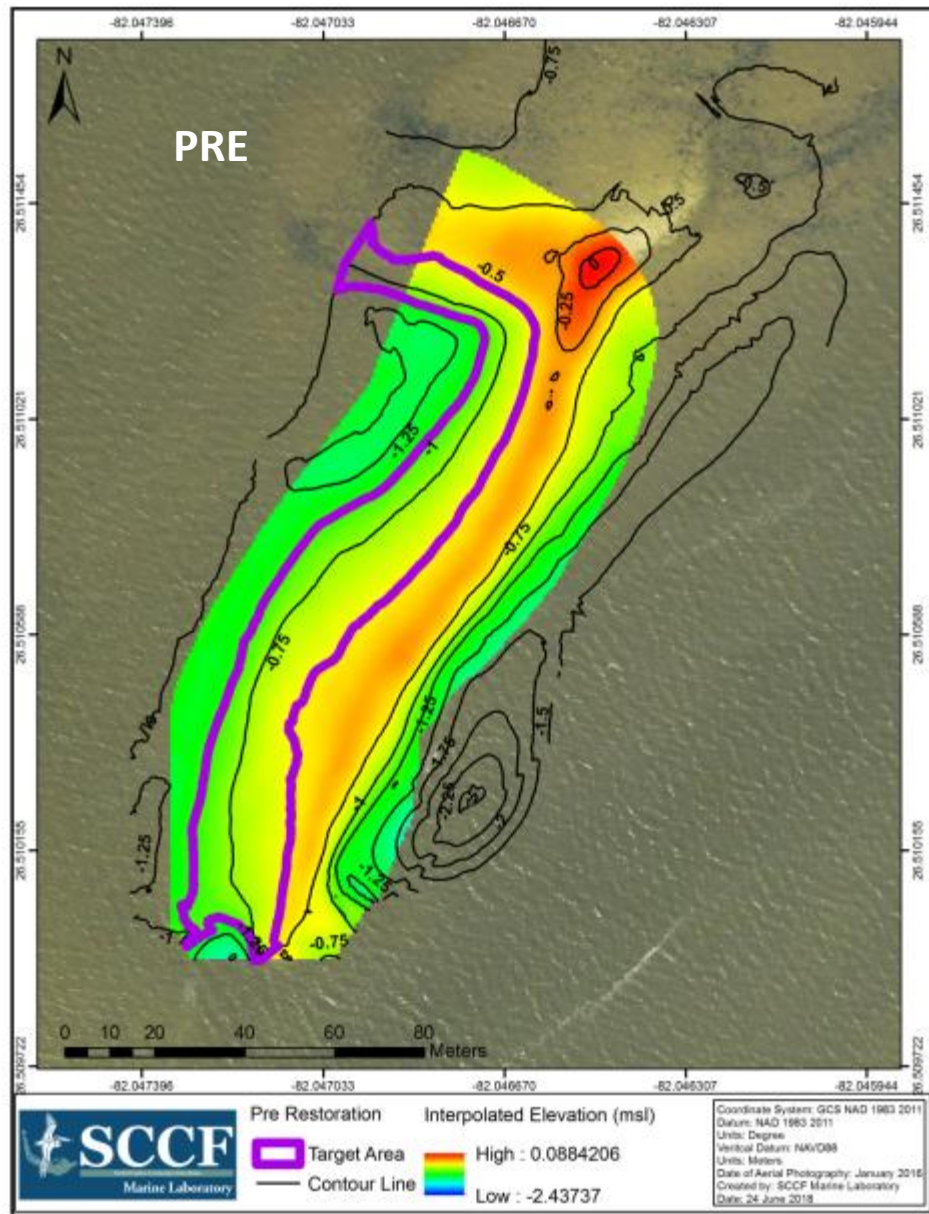








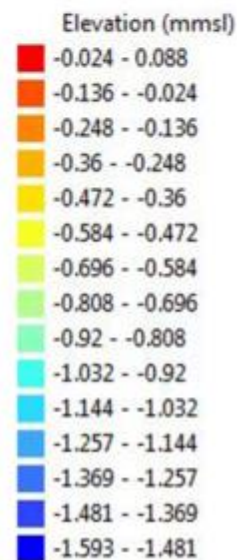
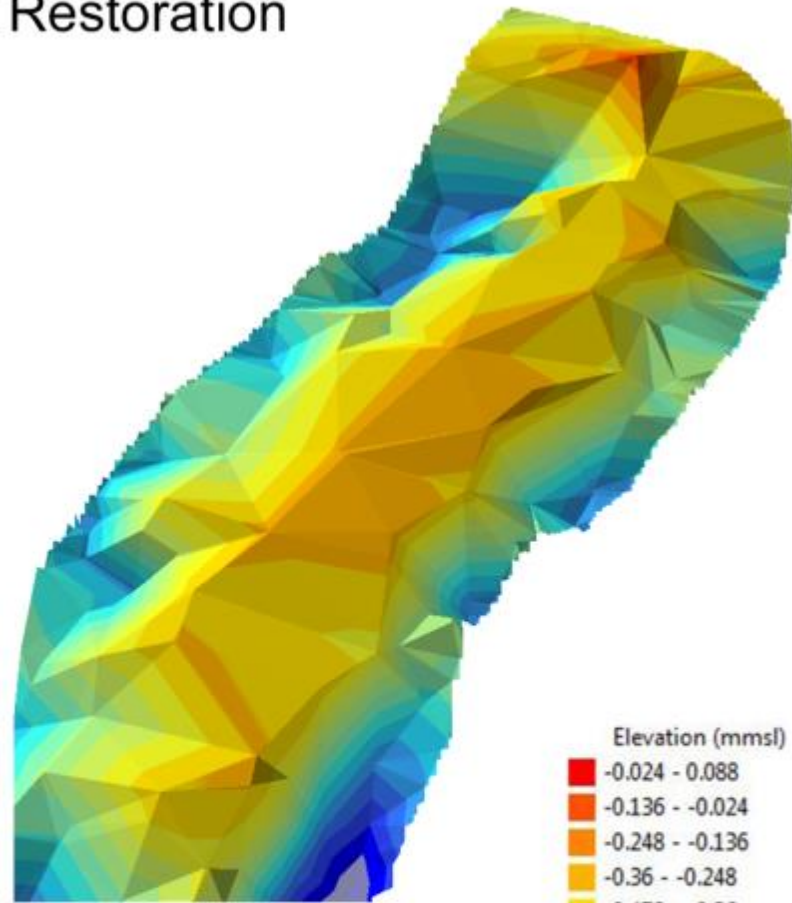
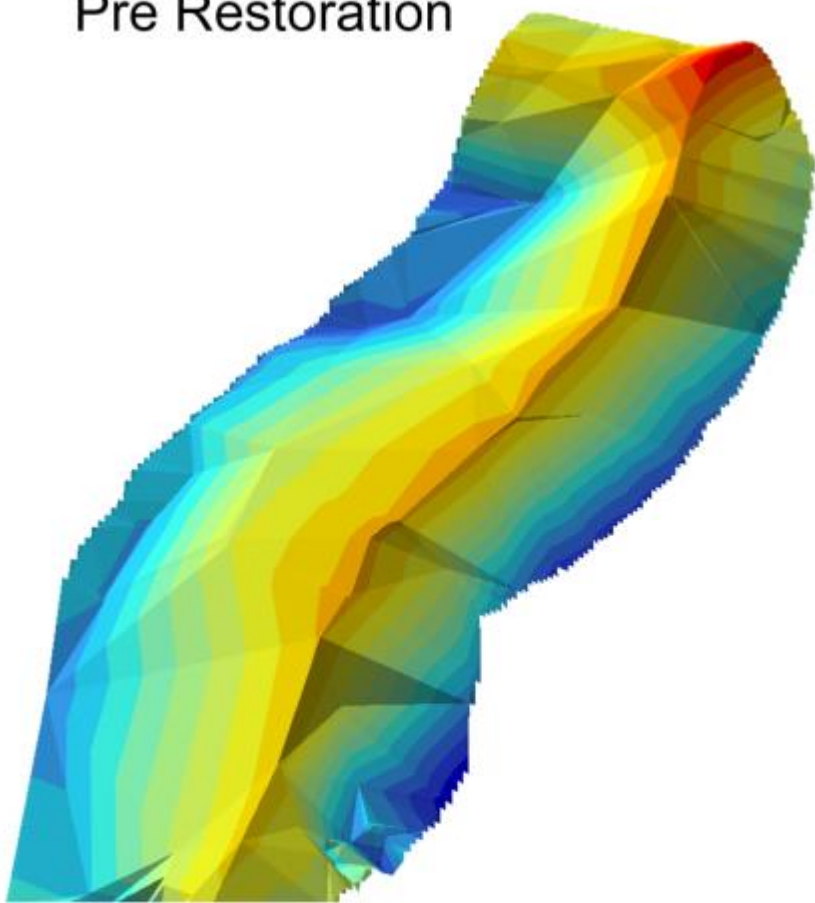






Pre Restoration

Post Restoration





12 mo.



12 mo.







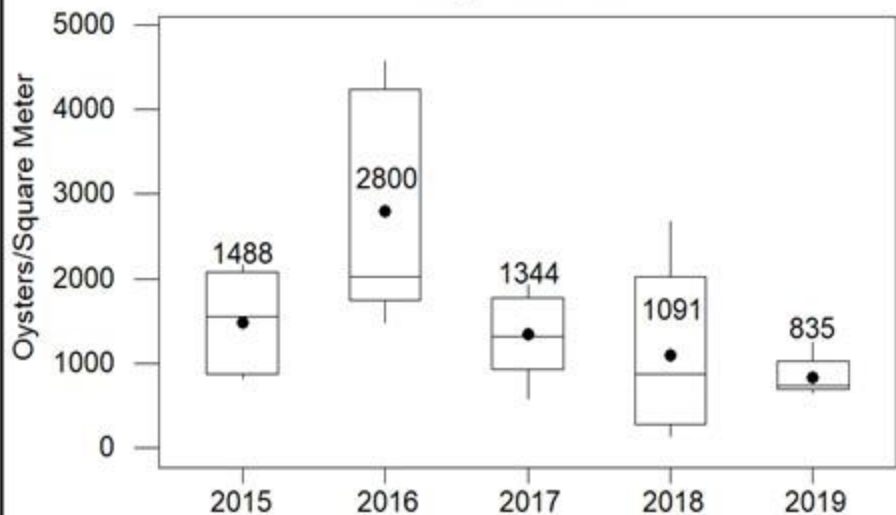
12 mo.



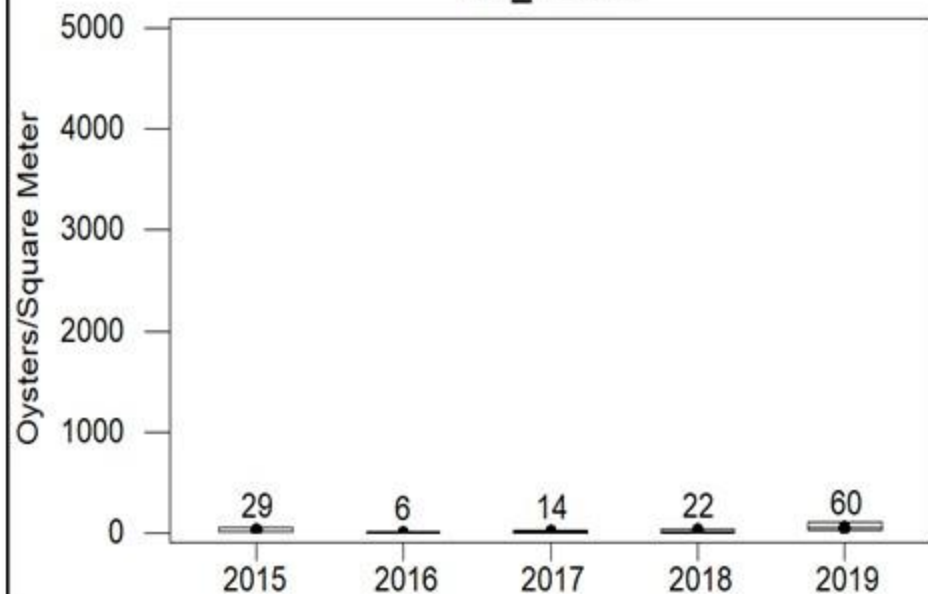


1.6 yr

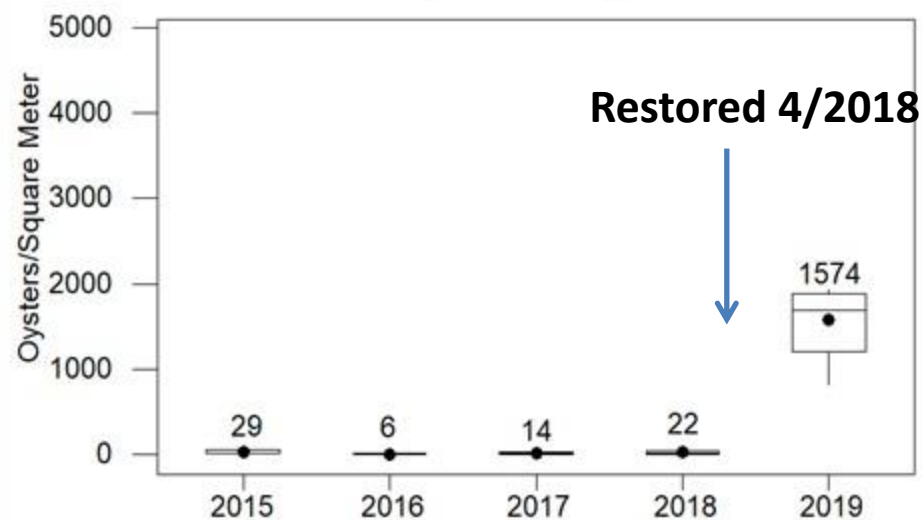
MP\_Reference



MP\_Control



MP\_Restoration\_Site2



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