Monitoring Apalachicola's Oyster Populations

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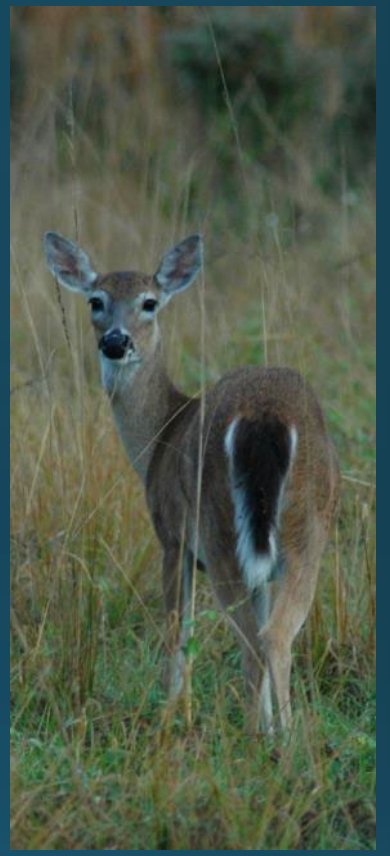
Florida Fish and Wildlife Conservation Commission

Habitat & Species Conservation

Marine Fisheries Management

Law Enforcement

Fish & Wildlife Research Institute



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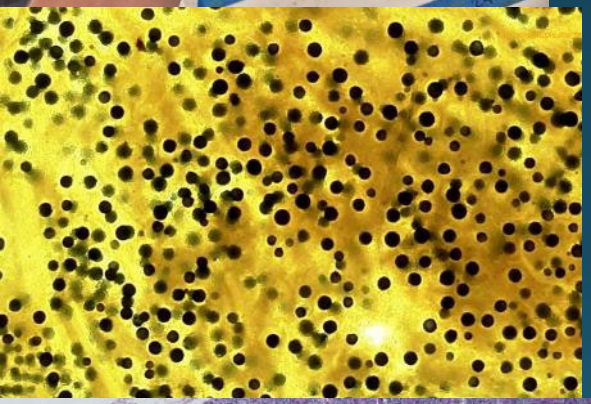

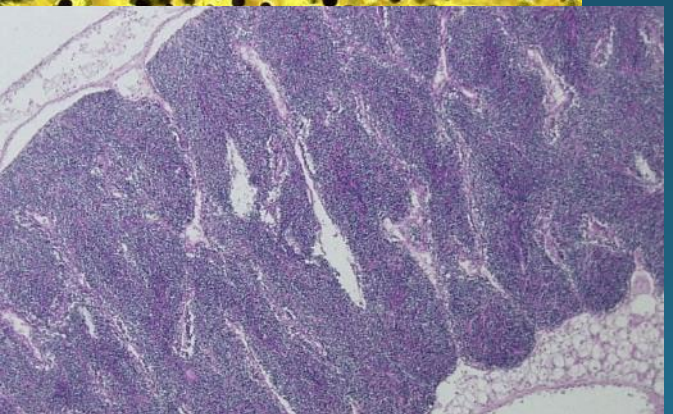

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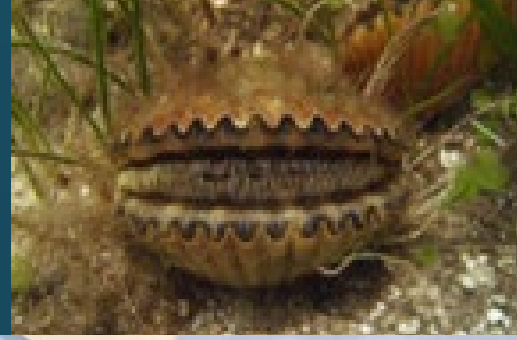
Shellfish Research

- Operate from the Apalachicola/Eastpoint Field Lab
- Scallops
  - Population Survey
  - Recruitment
- Oysters
  - Individual condition
  - Disease (Dermo)
  - Reproduction
  - Recruitment
  - **Population Survey**

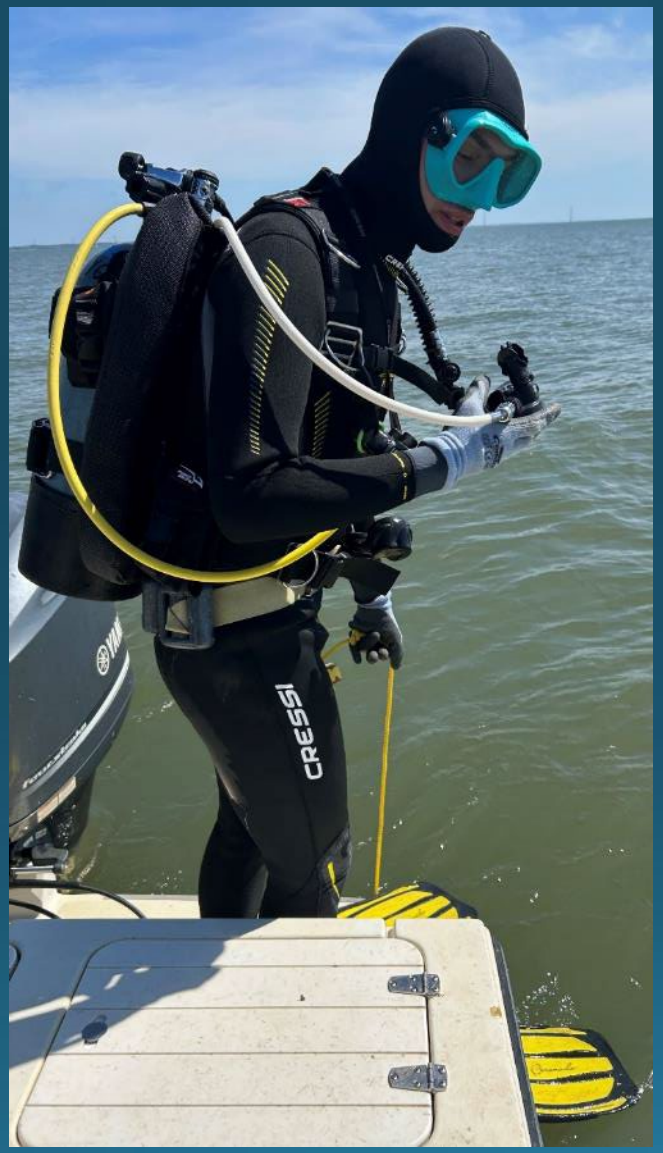


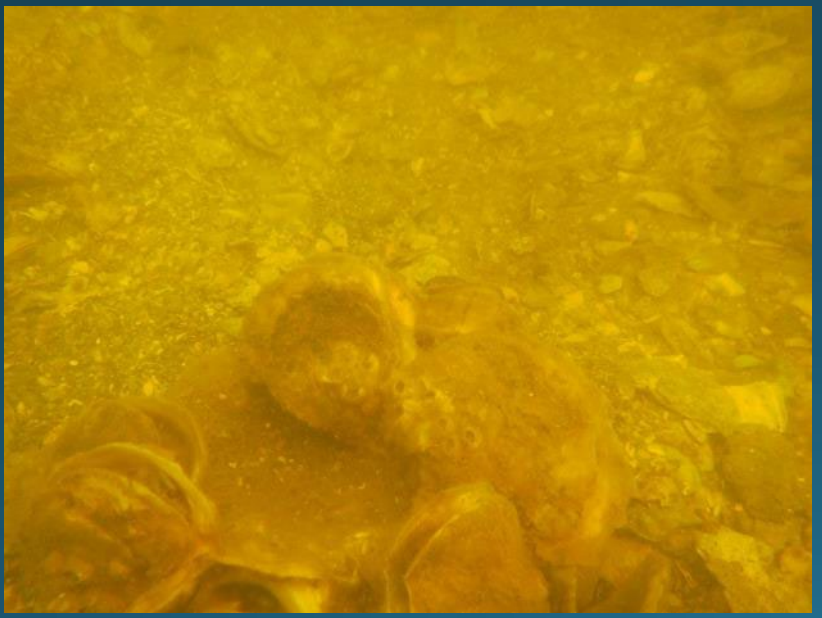
Subtidal Oyster Population Survey

- SCUBA divers use ¼ meter² quadrats
- Data recorded:
  - Substrate Weight
  - Number and size of live oysters
  - Number of recently dead oysters
  - Number of legal (>= 75 mm SH) oysters
  - Number of oyster drills
  - Shell heights of first 50 oysters encountered
- Detailed field methods online
  - Chapter 11 of Oyster Integrated Mapping and Monitoring Program (OIMMP) Report

https://myfwc.com/research/habitat/coastal-wetlands/oimmp/

Subtidal Oyster Population Survey

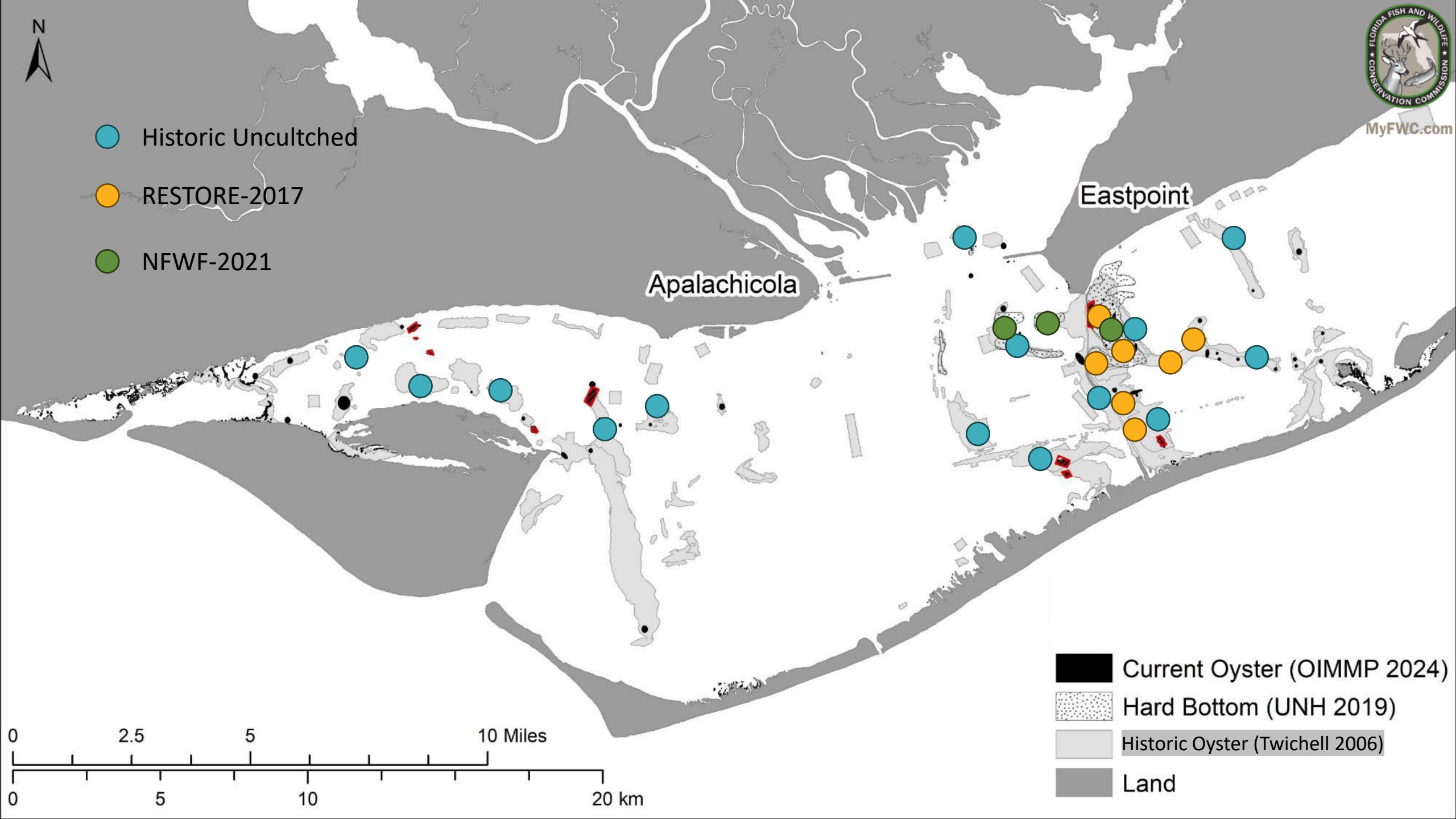




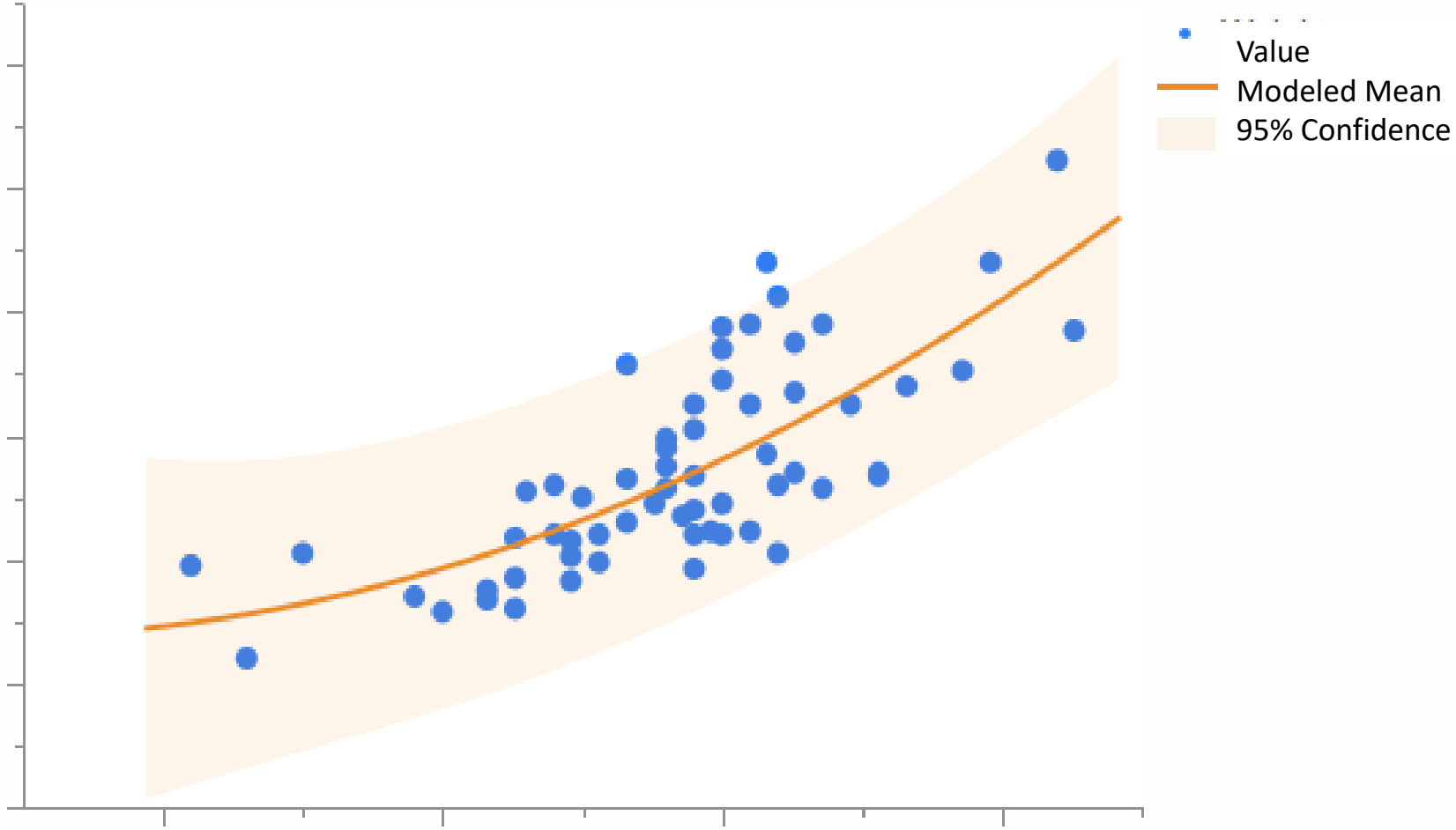
- **Surveys performed annually between March and June**

- **Historic Uncultched**:
  - No cultching since 2015.
  - Fifteen quadrat samples collected at each reef.
- **RESTORE-2017:**
  - Limestone cultch material in 2017.
  - Thirty to fifty quadrat samples collected at each reef.
  - Reefs vary in size between 12 and 50 acres.
- **NFWF-2021**:
  - Limestone cultch material in 2021.
  - Thirty quadrat samples were collected at each reef.
  - Reefs vary in size between 9 and 18 acres.

Reef Name	Old name	Acreage
RESTORE-01	Cat Point	50
RESTORE-02	Monkeys Elbow	27
RESTORE-03	Peanut Ridge	21
RESTORE-04	Cat Spur	12
RESTORE-05	Platform	22
RESTORE-06	Bulkhead South	24
RESTORE-07	Easthole	43
NFWF21-01	Lighthouse	11
NFWF21-02	East Lumps	9
NFWF21-03	Cat Point	18


N
Historic Uncultched
RESTORE-2017
NFWF-2021
Apalachicola
Eastpoint
MyFWC.com
Current Oyster (OIMMP 2024)
Hard Bottom (UNH 2019)
Historic Oyster (Twichell 2006)
Land
0
2.5
5
10 Miles
0
5
10
20 km

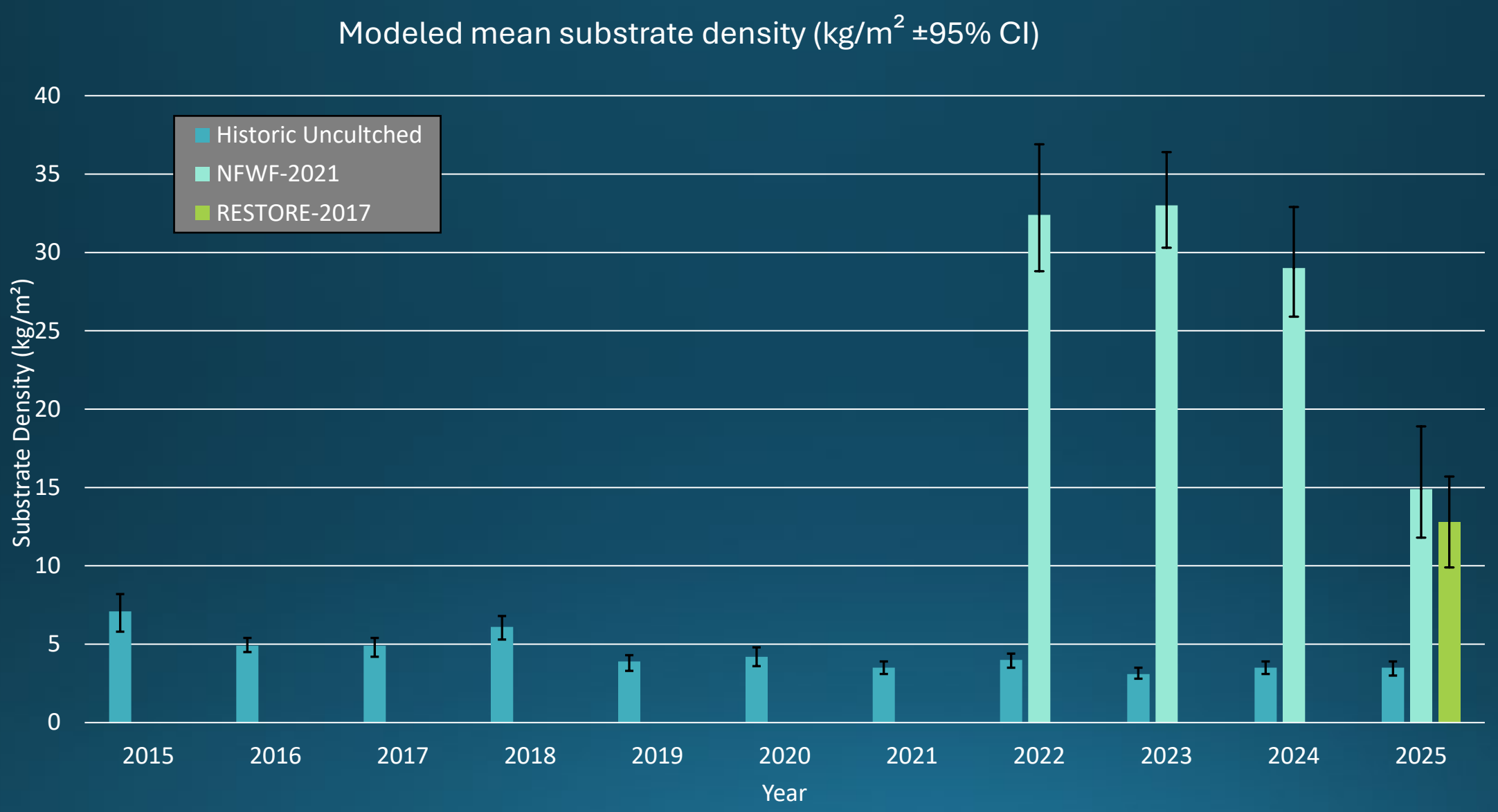
How We Estimate Oyster Densities



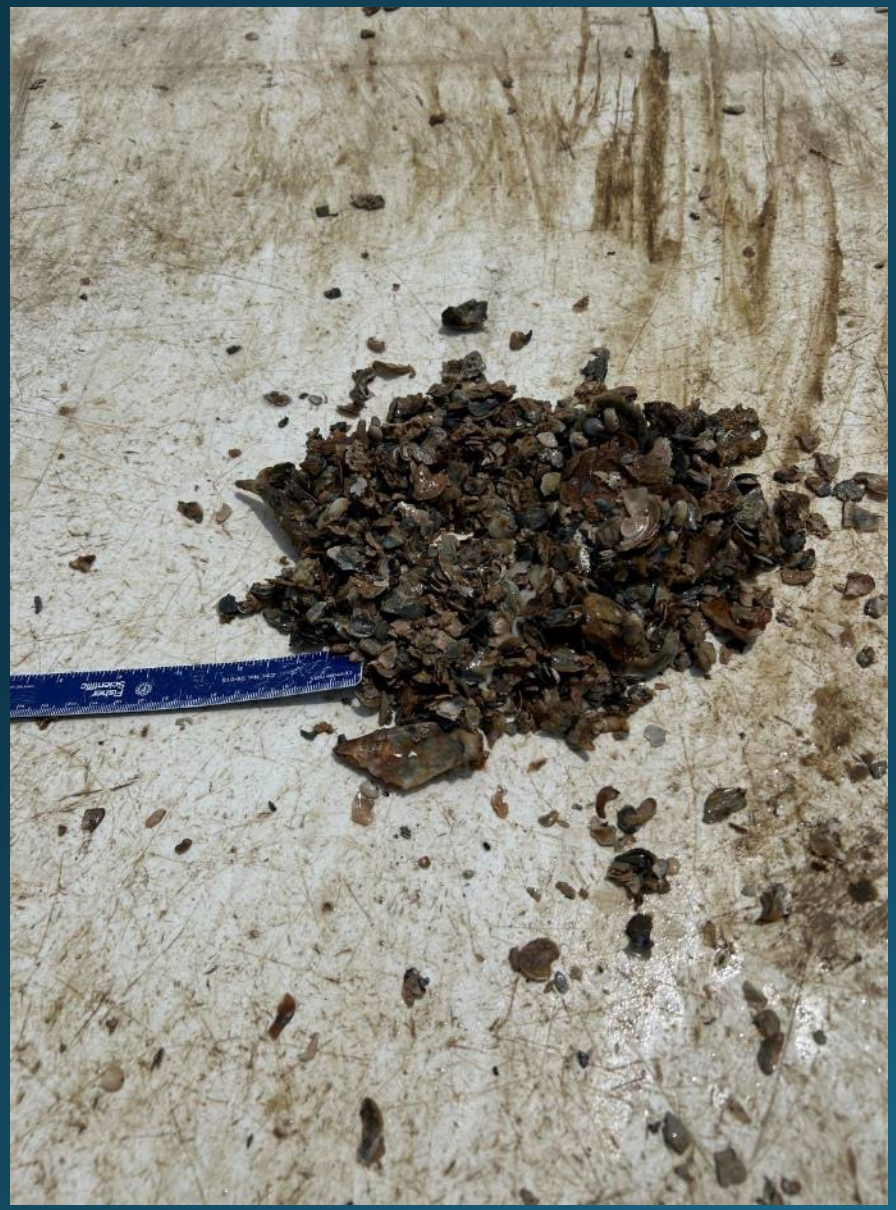
- Modeled means
- 95% confidence intervals
- Accounts for site and year variation

Results

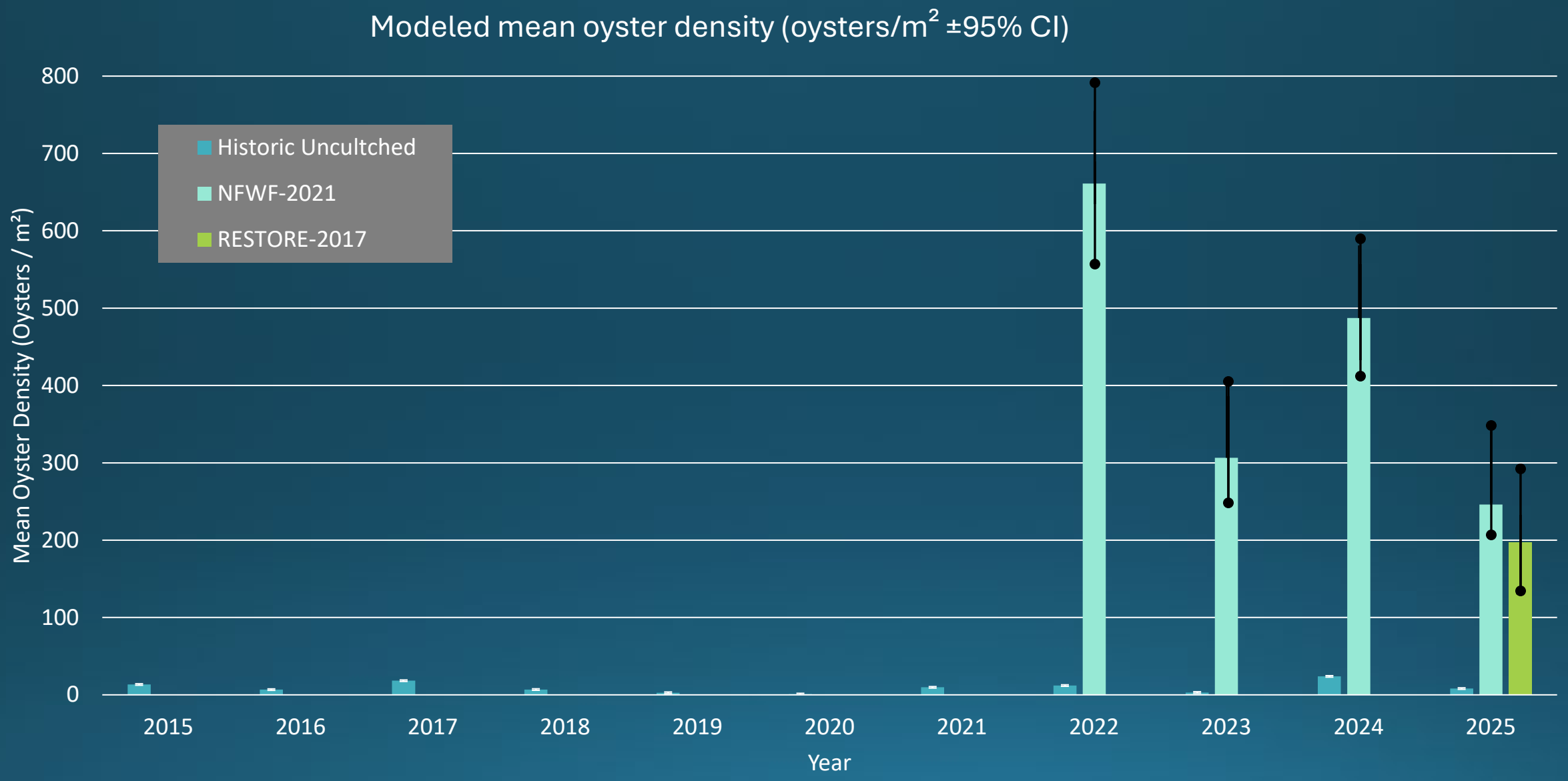
- April and May 2025
- Twenty-four reefs surveyed
  - Fourteen Historic Uncultched reefs
  - Seven RESTORE-2017 reefs
  - Three NFWF-2021 reefs
- 550 quadrats processed
  - 1,350 kgs of material processed
  - 20,361 oysters counted
  - 13,981 oysters measured for shell height.

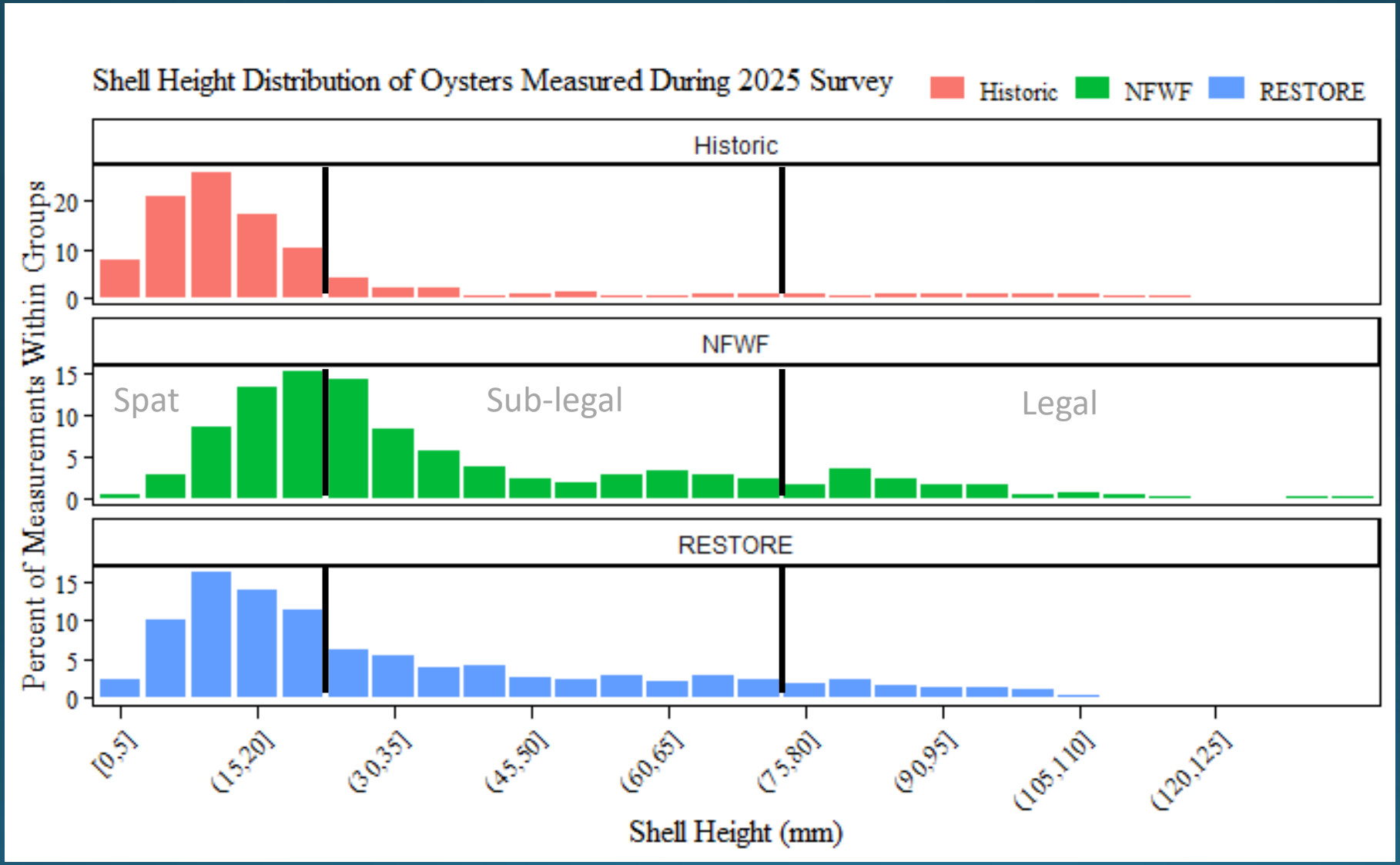

Modeled mean substrate density (kg/m² ±95% CI)
Historic Uncultched
NFWF-2021
RESTORE-2017
Substrate Density (kg/m²)
40
35
30
25
20
15
10
5
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Year

Historic

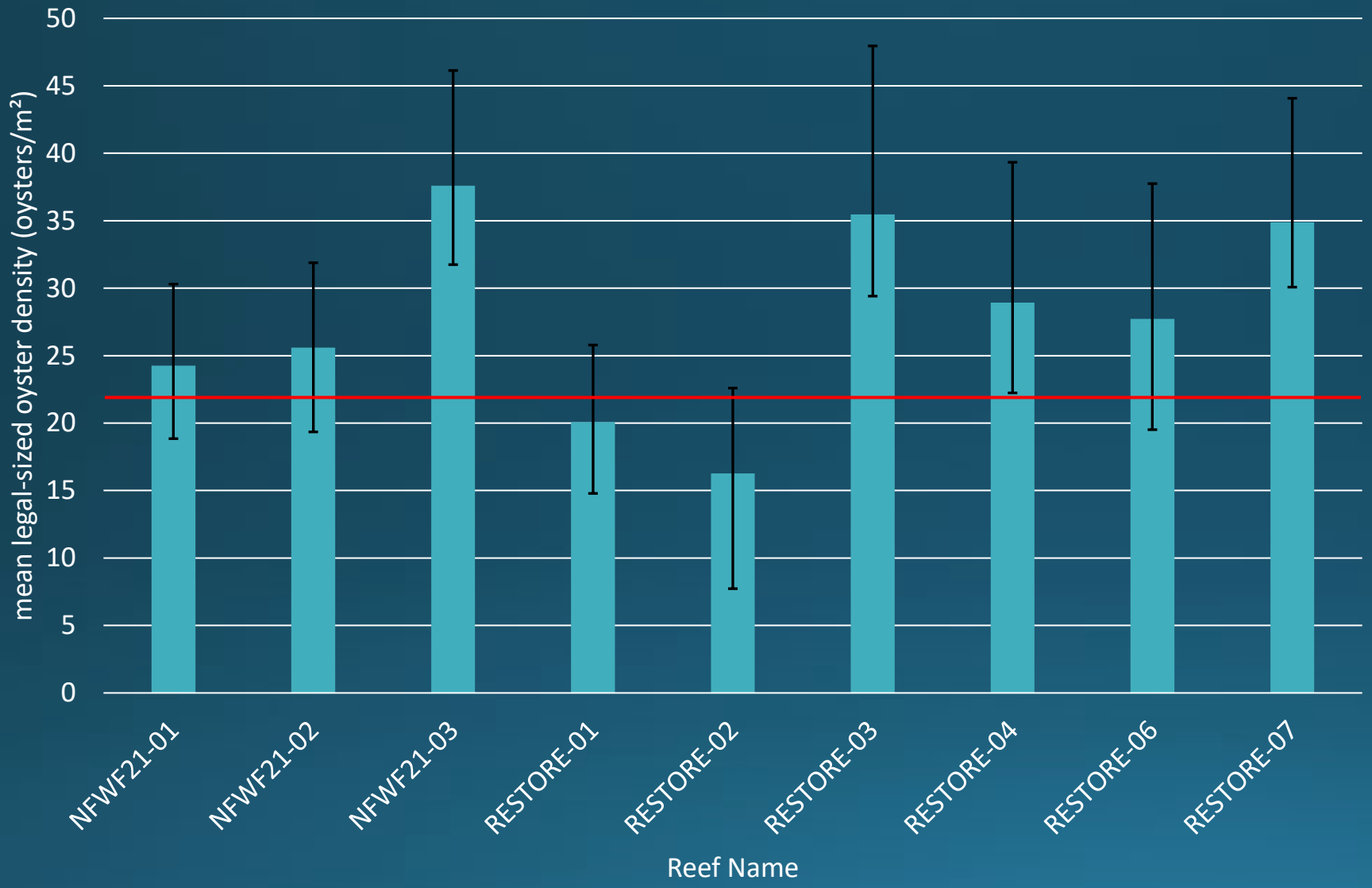


RESTORE-2017


Modeled mean oyster density (oysters/m² ±95% CI)
Historic Uncultched
NFWF-2021
RESTORE-2017
Mean Oyster Density (Oysters / m²)
800
700
600
500
400
300
200
100
0
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Year


Shell Height Distribution of Oysters Measured During 2025 Survey
Historic
NFWF
RESTORE
Historic
NFWF
RESTORE
Spat
Sub-legal
Legal
Percent of Measurements Within Groups
0
5
10
15
20
[0,5]
(15,20]
(30,35]
(45,50]
(60,65]
(75,80]
(90,95]
(105,110]
(120,125]
Shell Height (mm)

Modeled mean legal-sized oyster (Shell Height >= 76mm) density (oysters/m^2 ±95% CI)



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22.2 legal-sized oysters / m^2 = 400 bags / acre

January 2026 Season Annual Harvest Levels

Oyster reef	Reef type	Total AHL	Commercial AHL	Recreational AHL
NFWF Cat Point	Subtidal	1042	989	52
RESTORE Cat Point Spur	Subtidal	498	473	24
RESTORE Easthole	Subtidal	2318	2202	115
RESTORE Peanut Ridge	Subtidal	1085	1030	54
Total	**--**	**4943**	**4694**	**245**

- Conservative harvest limits
- Utilizes lower 95% confidence interval
- Harvest of 10% legal-sized oysters
- Similar regulation to other gulf states

Future

- Mapping in 2006 suggested at least **12,000 acres** of potential oyster habitat.
- Sidescan Mapping in 2019 suggested **only ~600 acres remain**.
- Our 2025 data show **only ~70 acres** had potentially harvestable oyster densities.
- FWC and other partners continue to seek out grant funding for future cultching projects.
- $10 million dollars were spent to cultch ~75 acres in 2024.
- FWC is working to secure funding to reestablish a cultching program

Summary

- Historic Uncultched reefs
  - Low substrate densities
  - Low oyster densities dominated by spat.
- NFWF-2021 and RESTORE-2017 reefs
  - Higher substrate densities
  - Higher oyster densities and a broader size distribution
- Legal-size oysters remain a small fraction of the total population but are increasing on several reefs
- Efforts to secure funding for further and more consistent cultching are ongoing.

Restoration works — but scale and sustained investment will determine whether Apalachicola oysters truly recover


Questions?