



# THE APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)



Sandra Brooke PhD  
Research Faculty FSUCML  
ABSI Principal Investigator

Community Advisory Board October 18, 2022

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# Restoration Experiments

*Objective: Identify optimal location, materials and configuration for restoration success*



# Reefball and Layer Cake modules

Stable substrate with high habitat complexity will support community development

4 Reefballs + 4 Layer Cakes and instruments to measure water quality



# Reefball and Layer Cake modules

Reefballs photographed and 3-D models created

Reefballs deployed in April 2022

Reefballs recovered and photographed Sept-Oct 2022

Models will be made and growth calculated

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Layer Cakes photographed and 3-D models created July-Aug 2022

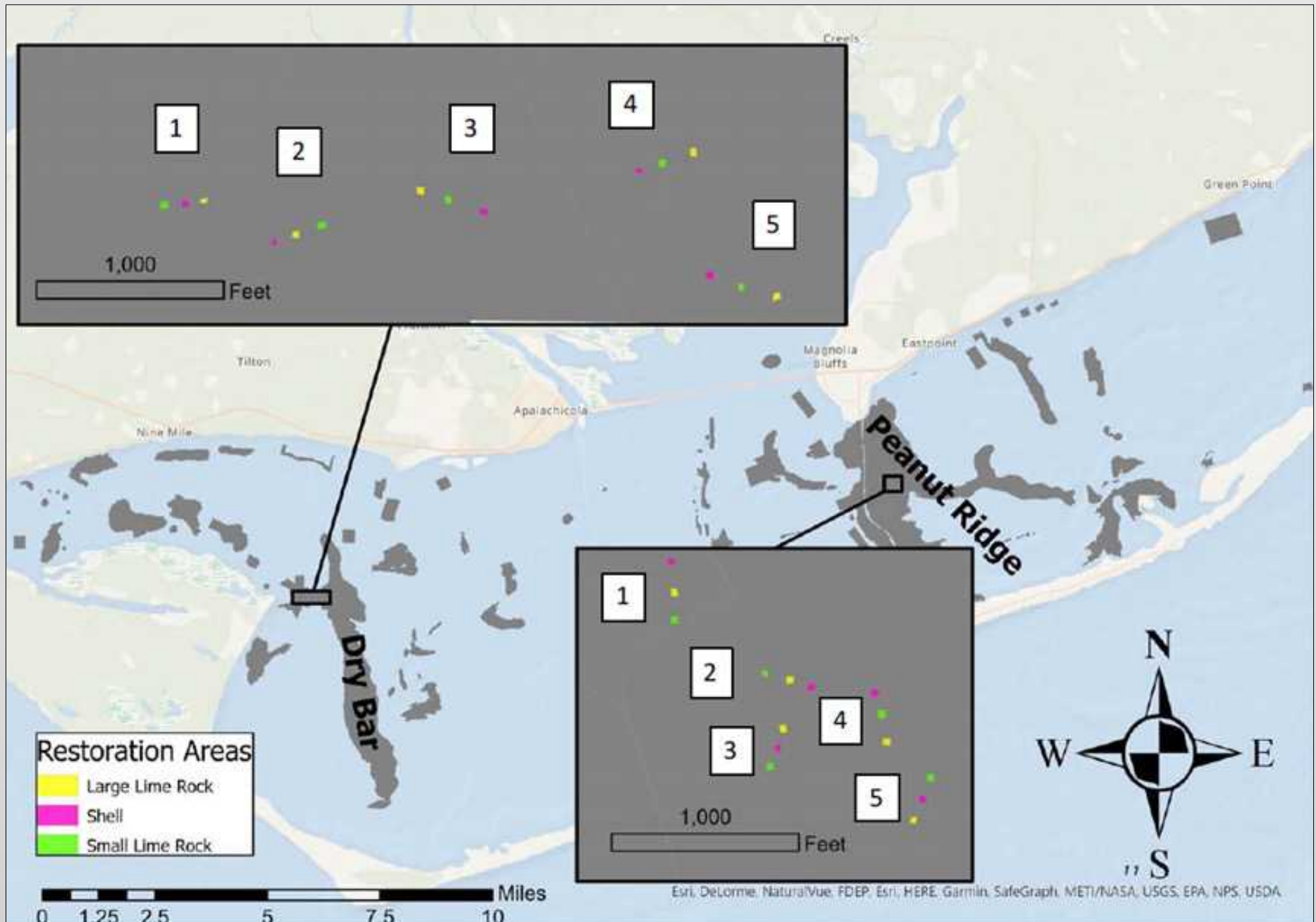
Layer Cakes currently being deployed

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Photography and modeling will be repeated every 6 months.



# Restoration Experiment Update

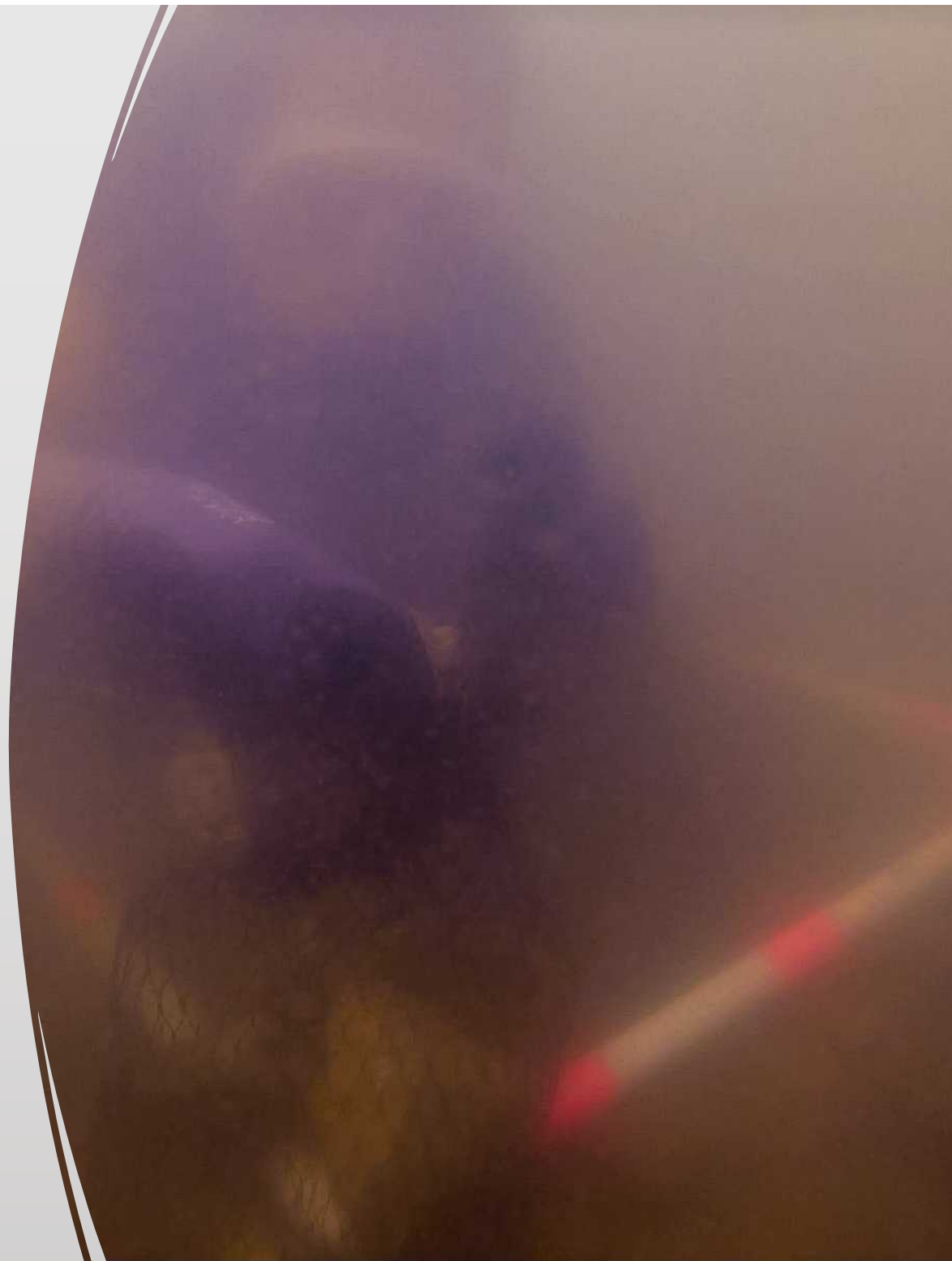


# Diver sampling of ABSI restoration experiments

August 2022

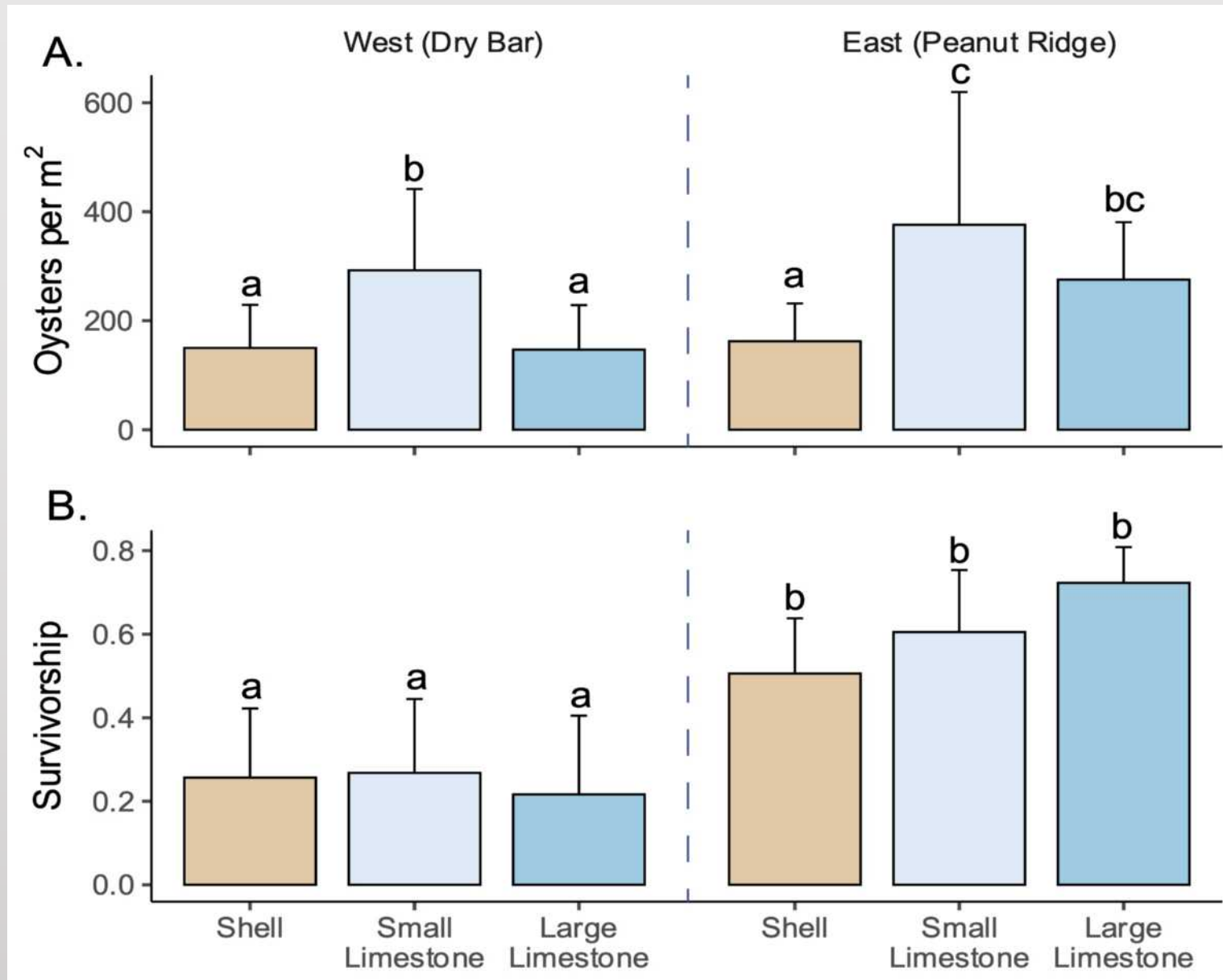


- Five x 0.25 m<sup>2</sup> quadrat samples per reef
- Volume: Rock, dead shell, live oysters
- Counted and measured live oysters and boxes



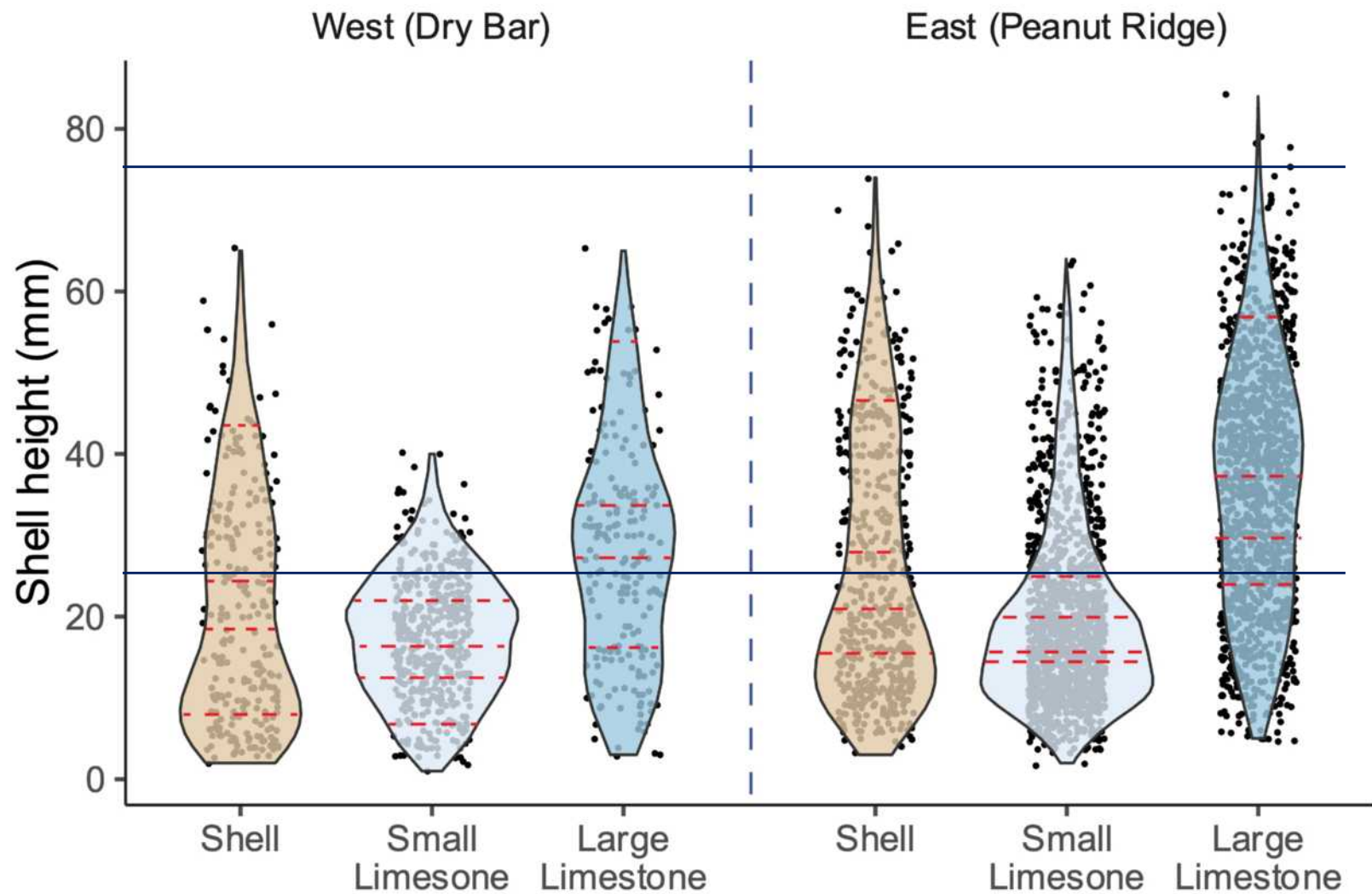
# Restoration reefs – 14 months post-deployment

## Density and Abundance



# Restoration reefs – 14 months post-deployment

## Shell Height





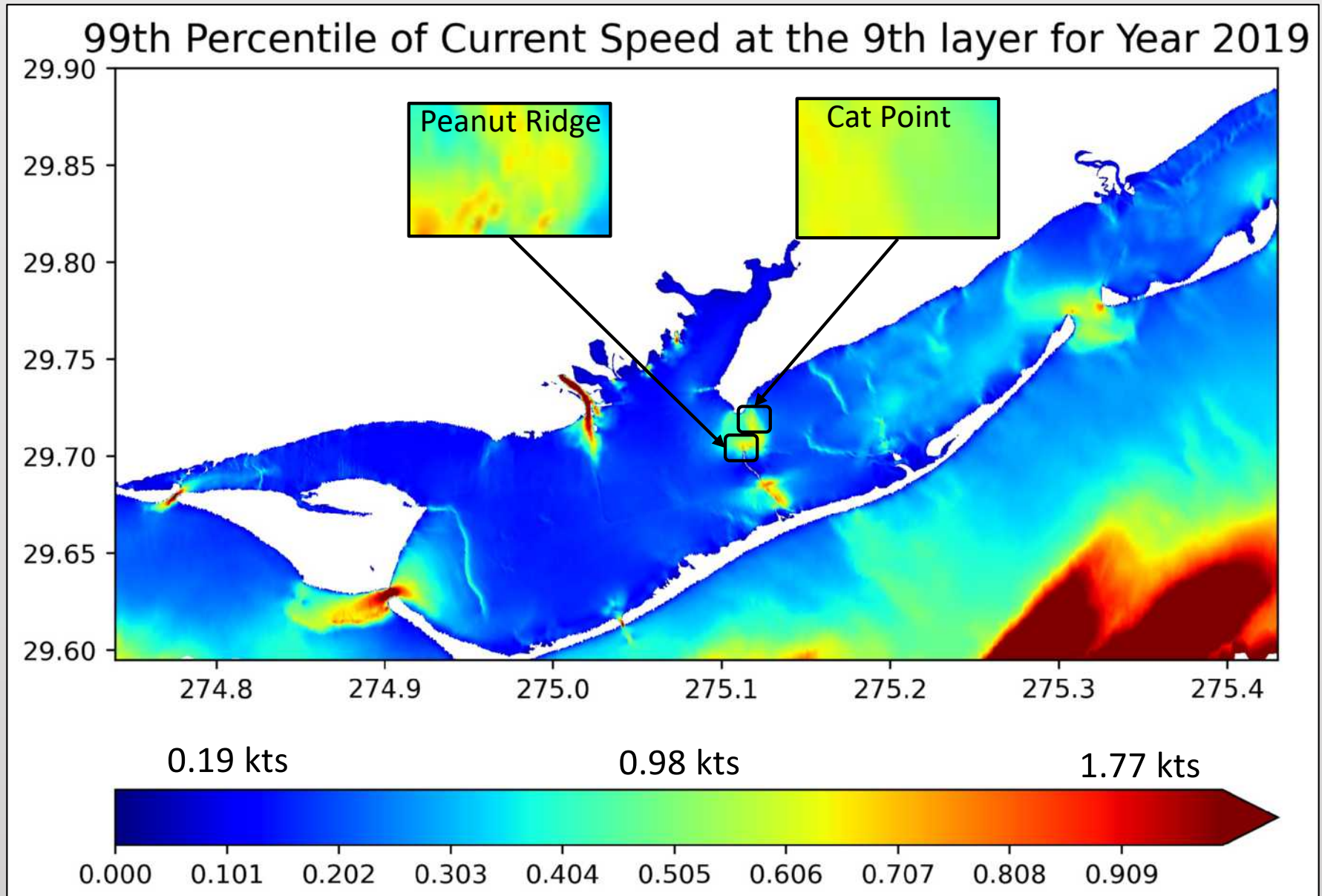
# Tong sampling of ABSI restoration experiments

Aug-Sept 2022



# ABSI Restoration Experiment Fall 2022

## Location



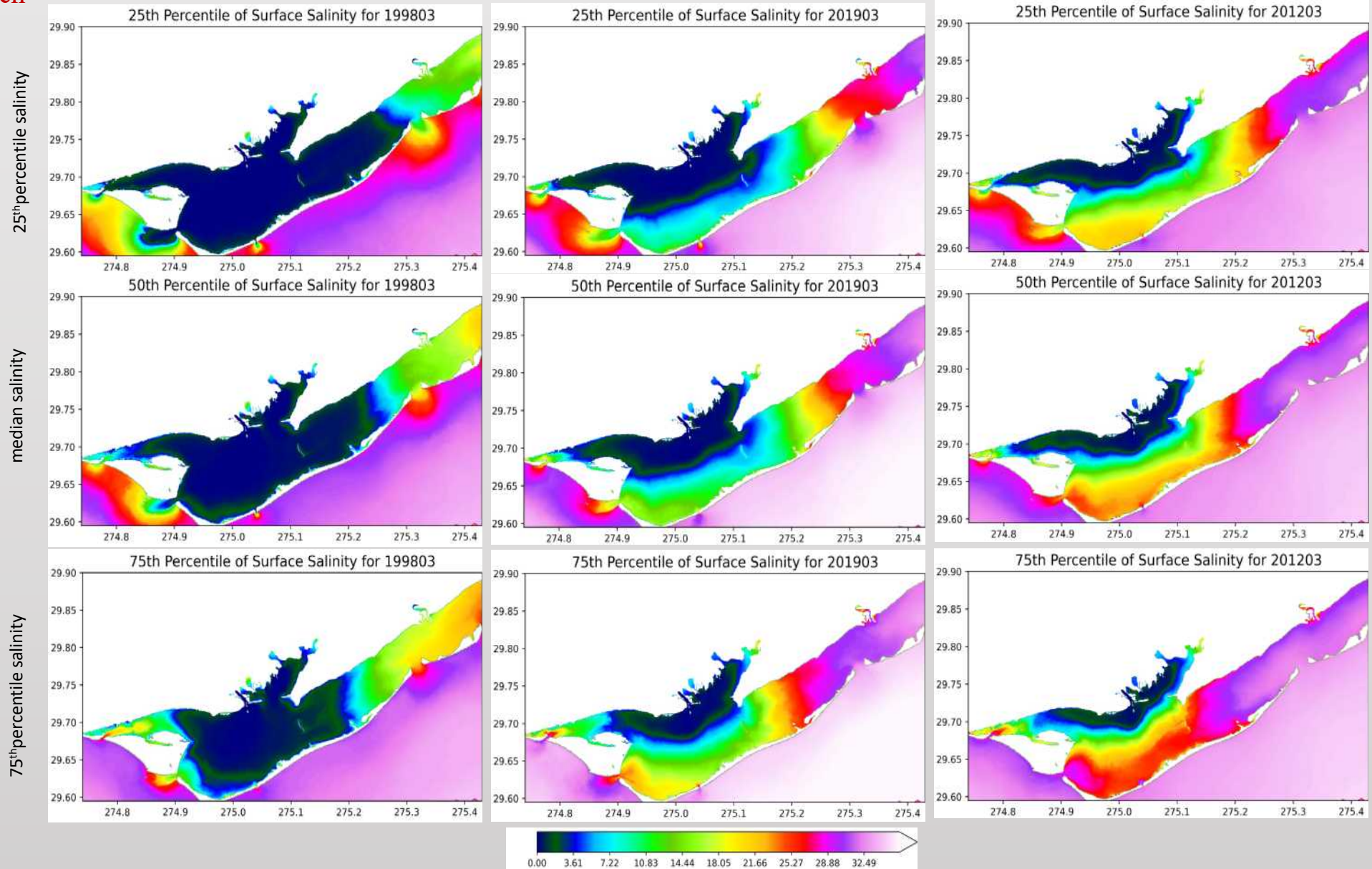
# Maps of salinity quantiles (median, 25<sup>th</sup> percentile, 75<sup>th</sup> percentile) corresponding to wet, normal, and dry March.

March

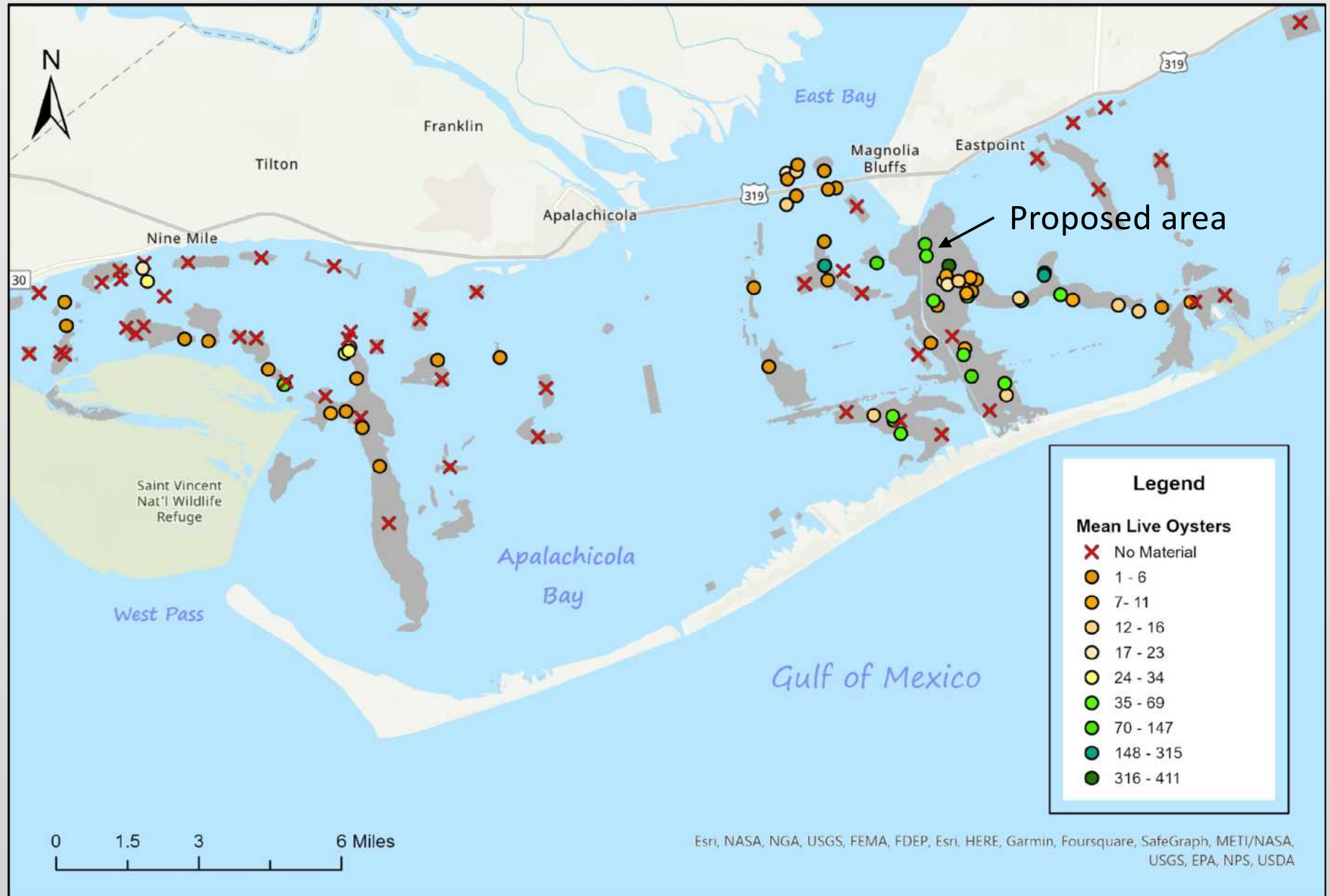
Wet (1998)

Normal (2019)

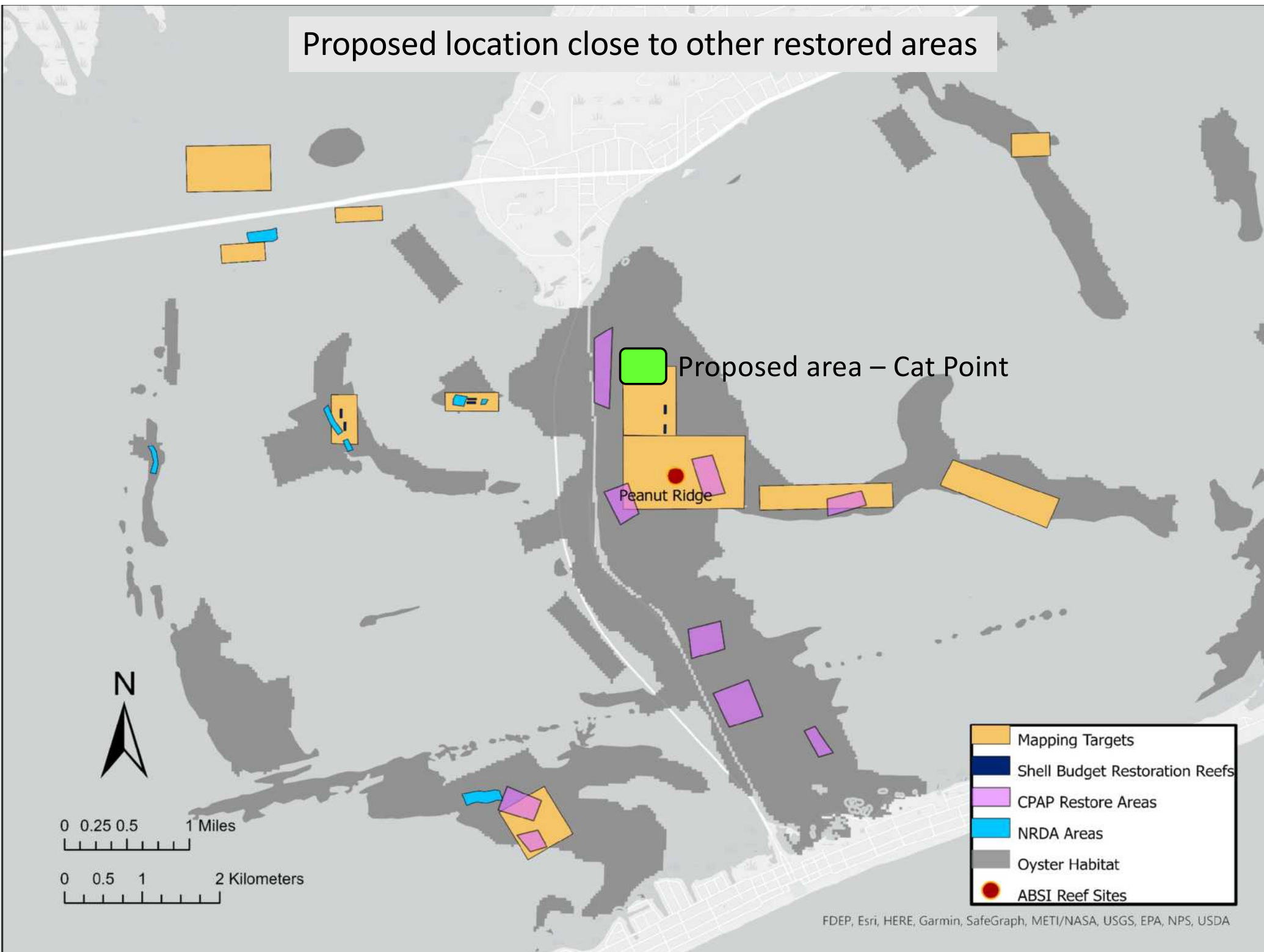
Dry (2012)



# Sub-tidal tonging survey 2021-2022

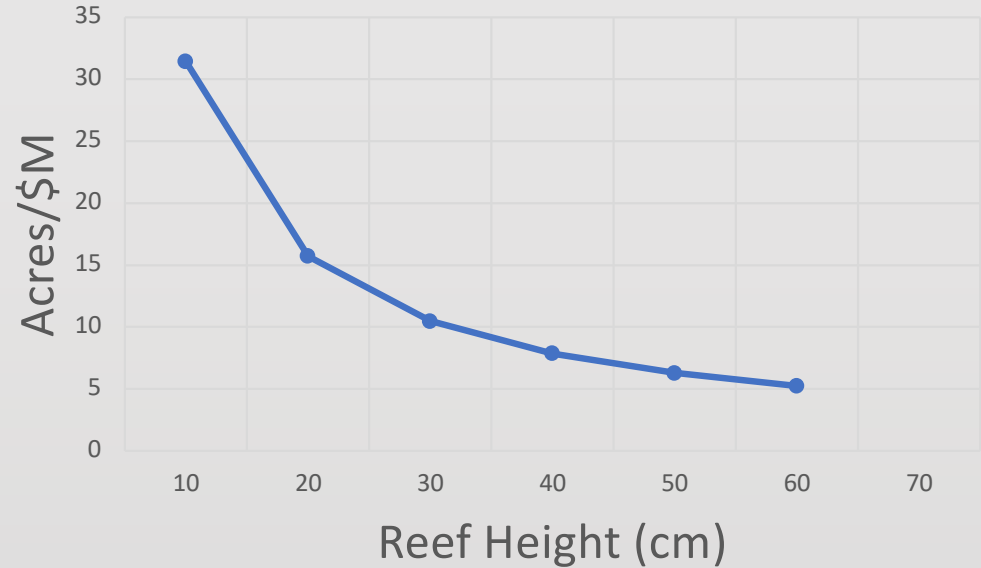
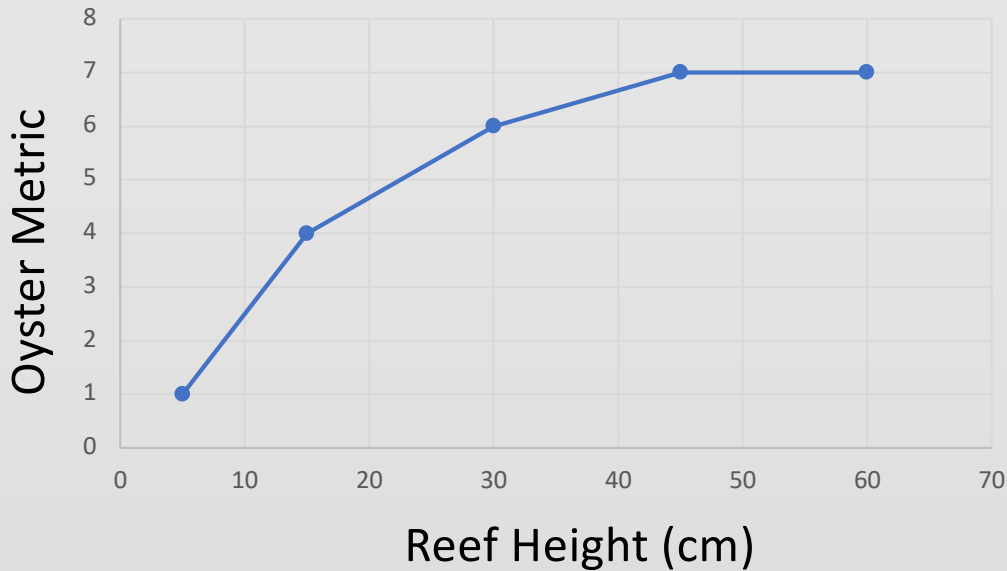


# Proposed location close to other restored areas



# ABSI Restoration Experiment Fall 2022

**Hypothesis:** Benefits of increasing reef height will reach an asymptote



**Objective:** identify optimal (cost-benefit) reef height

## Reef Height

- 15 cm (6 inches)
- 25 cm (10 inches)
- 50 cm (20 inches)

# ABSI Restoration Experiment Fall 2022

## Material Size and Type

**Hypothesis:** Material size and type will influence oyster recruitment, survival and growth

**Objective:** identify optimal material

### Material Size Options

5 cm (2 inches) = Small

15-20 cm (6-8 inches) = Medium

30 cm (12 inches\*) = Large

### Material Type Options

Limerock = occurs naturally in NW Florida, relatively stable

Granite = natural stone, not found locally, heavy, stable, more expensive?

Concrete = not natural, readily available, less expensive

# Proposed ABSI Restoration Experiment Fall 2022

## **OPTION 1: Examine reef height**

### **Location**

NE Cat Point: 4 treatments, 5 replicates = 20 reefs (15 x 15 m)

### **Reef Height**

25 cm (10 inches)

50 cm (20 inches)

### **Material Size**

15-20 cm (6-8 inches) = Medium

### **Material Type**

Limerock = occurs naturally in NW Florida, relatively stable



# Proposed ABSI Restoration Experiment Fall 2022

## **OPTION 2: Examine different materials**

### **Location**

NE Cat Point: 4 treatments, 5 replicates = 20 reefs (15 x 15 m)

### **Reef Height**

25 cm (10 inches)

### **Material Size**

15-20 cm (6-8 inches) = Medium

### **Material Type**

Limerock = occurs naturally in NW Florida, relatively stable

Concrete = not natural, readily available, less expensive



QUESTIONS?

FOR ADDITIONAL INFORMATION:

ABSI website: <https://marinelab.fsu.edu/absi/>

ABSI email: [fsucml-absi@fsu.edu](mailto:fsucml-absi@fsu.edu)