The Apalachicola Bay System Initiative (ABSI)

Sandra Brooke PhD
Research Faculty FSUCML
ABSI Principal Investigator

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ABSI funding is provided by Triumph Gulf Coast Inc. and Florida State University
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

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

Layer Cakes currently being deployed

Photography and modeling will be repeated every 6 months.
Restoration Experiment Update
Diver sampling of ABSI restoration experiments
August 2022

- Five x 0.25 m² 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

A. West (Dry Bar) vs. East (Peanut Ridge)

- Oysters per m²
  - West (Shell): a
  - West (Small Limestone): b
  - West (Large Limestone): a
  - East (Shell): a
  - East (Small Limestone): c
  - East (Large Limestone): bc

B. Survivorship

- Survivorship
  - West (Shell): a
  - West (Small Limestone): a
  - West (Large Limestone): a
  - East (Shell): b
  - East (Small Limestone): b
  - East (Large Limestone): b
Restoration reefs – 14 months post-deployment
Shell Height
Tong sampling of ABSI restoration experiments
Aug-Sept 2022
ABSRI Restoration Experiment Fall 2022

Location

99th Percentile of Current Speed at the 9th layer for Year 2019

- Peanut Ridge
- Cat Point

Values:
- 0.19 kts
- 0.98 kts
- 1.77 kts
Maps of salinity quantiles (median, 25\textsuperscript{th} percentile, 75\textsuperscript{th} percentile) corresponding to wet, normal, and dry March.
Sub-tidal tonging survey 2021-2022
Proposed area – Cat Point

Proposed location close to other restored areas
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)
ABS 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