Oyster Reef Habitat Restoration in St. Andrew Bay, FL

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Aquatic Habitat Conservation and Restoration
Project Location: St. Andrew Bay, Bay County, Florida
Project Location: West Bay, St. Andrew Bay, Bay County, Florida
Restoration Goals

Create Habitat

~4 acres of subtidal oyster reefs

- Increase oyster population
- Enhance fisheries habitat
- Attenuate wave energy
- Provide shoreline protection
- Improve water quality
- Create conditions more suitable for seagrass recruitment & recovery in adjacent historic habitat
Restoration Goals

Test new materials and reef designs

Coir fiber
Coir Fiber Oyster Shell Bags

340 volunteer hours / acre
Oyster Bag Wall with Cultch Center

**OVERTHEAD VIEW**

**CROSS SECTION VIEW**

- Oyster shell in biodegradable coir fiber bags
- Loose recycled oyster shell
- Existing substrate
- Height: 10-16"
Coir Mattress with Oyster Shell Layer

Completed mattress: 15’ x 5’
1,540 volunteer hours / acre
Coir Mattress with Oyster Shell Layer

**OVERHEAD VIEW**

**CROSS SECTION VIEW**

Biodegradable coir fiber mattress with recycled oyster shell layer

- Coir Mattress
- Oyster Shell Layer
- Biodegradable fibers
- Recycled oyster shells
- Height: ~4"
- Existing substrate
Restoration Monitoring

- Reef areal dimension
- Reef height
- Oyster density
- Oyster size-frequency distribution
- Habitat enhancement for resident & transient species
- Water quality
- Changes in adjacent seagrass coverage

Baggett et al. 2014
Oyster Shell Bags vs. Mattresses

Mean percent coverage of oysters
Shell Bags 92%
Mattresses 37%
Results: Oyster density & size-frequency distribution

- Live oyster density
  1386/m² (37%)
- Shell height:
  Mean 45.0 ± 1.2 mm
  Range 3 - 110 mm
- 15.9 oysters per size class
Results:
Oyster size-frequency distribution
Results: Resident & Transient Species

- 13 invertebrate species
- 18 fish species
Results: Resident & Transient Species
Lessons learned
Lessons learned

- **Pilot Phase** – 0.75 acre
  - Two designs; Volunteer driven
  - $444,868 / acre ($24,000 / reef)

- **Implementation Phase** – 3.0 acres
  - Oyster bag & loose shell design; Contracted work
  - $246,400 / acre ($14,000 / reef)
Thank you!

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FL Fish and Wildlife Conservation Commission

Aquatic Habitat Conservation & Restoration

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Selected References