

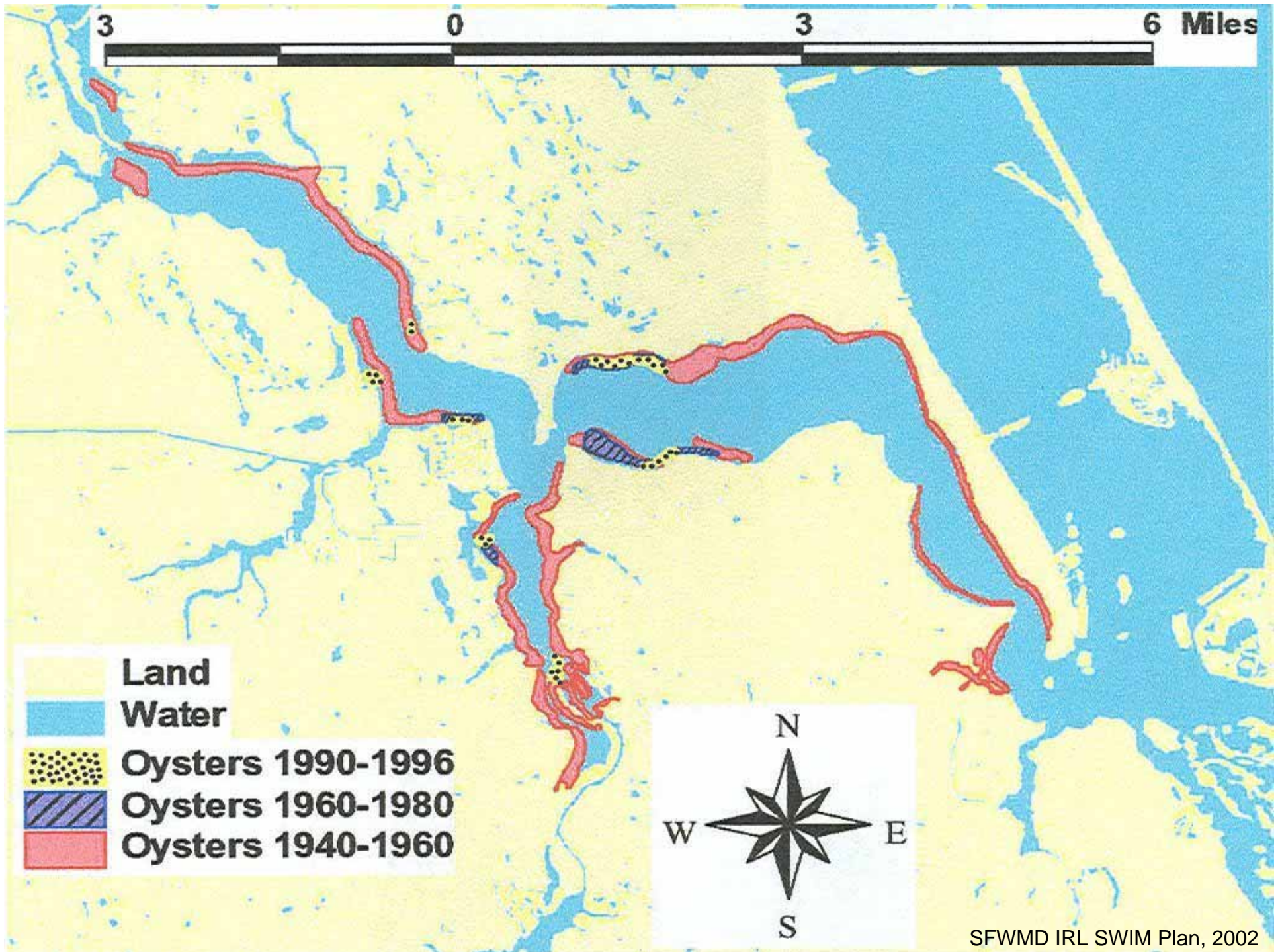
# St. Lucie Estuary Oyster Gardening and Restoration

Heather Hitt

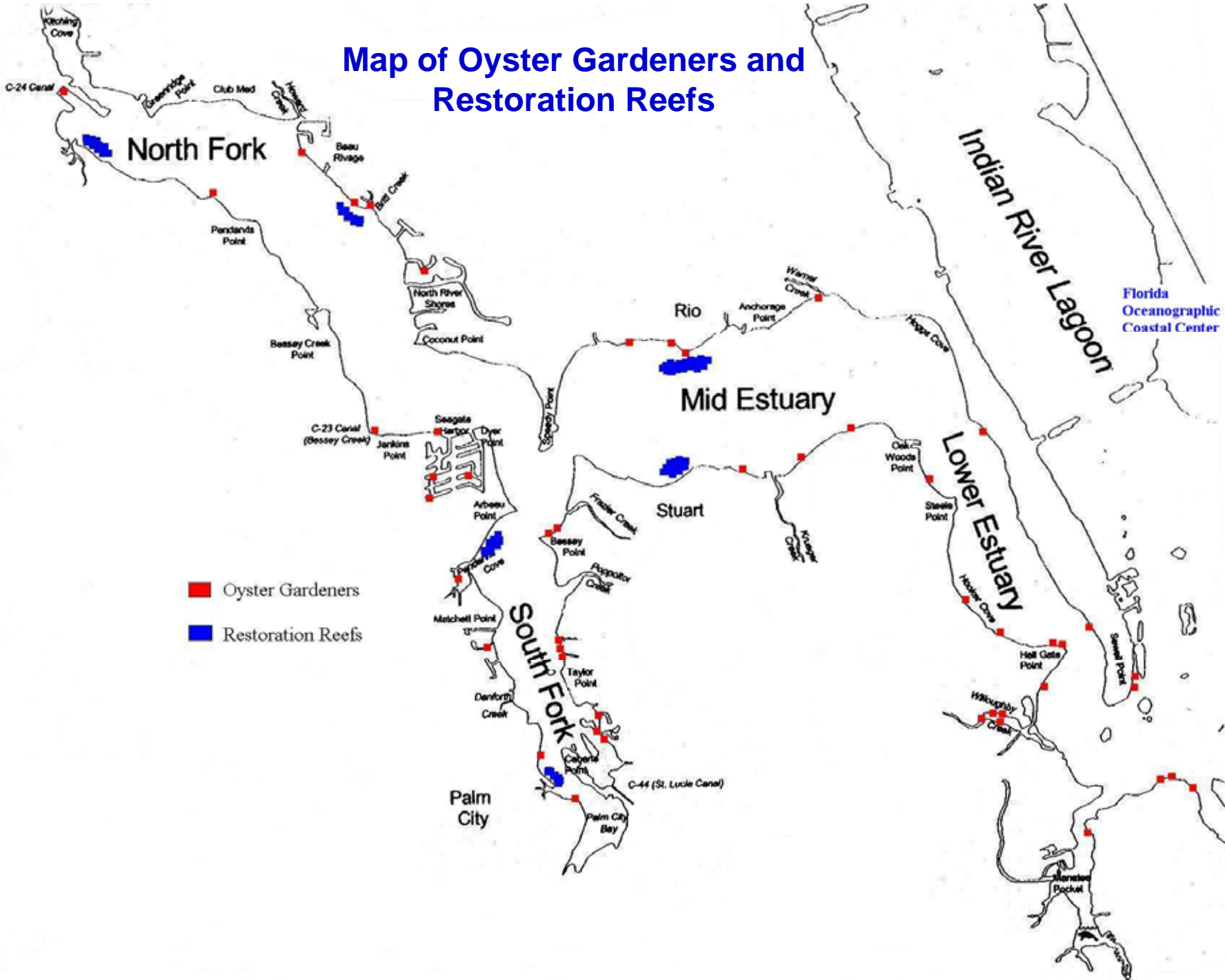
Research Assistant







# Map of Oyster Gardeners and Restoration Reefs





# Oyster Gardening



- Grown at Research Aquaculture, Inc. until 4 mm in shell length

- Spawn adults collected from SLE every 3 months



# Oyster Gardening



- Place 750 oysters in each cage (measure length of sub-sample)

- Hang 2 to 4 cages at each dock for 3 months



# Oyster Gardening



- Retrieve oysters from cages after 3 months

- Measure length of sub-sample and estimate mortality rate



# Oyster Gardening



- Scatter oysters over historic reefs near docks where they were gardened

- Monitor density and growth on oyster reefs every 3 to 6 months



# Gardening Results

## June to September Growth and Mortality of Gardened Oysters in the St. Lucie Estuary

|                        | Willoughby Creek | Lower Estuary | Middle Estuary | North Fork | South Fork |
|------------------------|------------------|---------------|----------------|------------|------------|
| End length (cm)        | 3.50             | 4.14          | 5.13           | 2.96       | 2.65       |
| Start length (cm)      | 0.64             | 0.64          | 0.64           | 0.48       | 0.48       |
| Total growth (cm)      | 2.86             | 3.50          | 4.49           | 2.48       | 2.17       |
| Average % dead         | 25               | 10            | 5              | 50         | 50         |
| Average Salinity (ppt) | 24               | 28            | 19             | 11         | 11         |

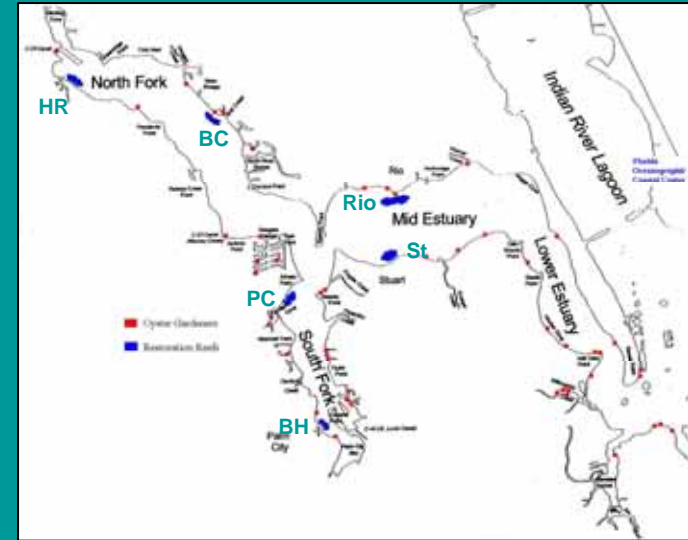
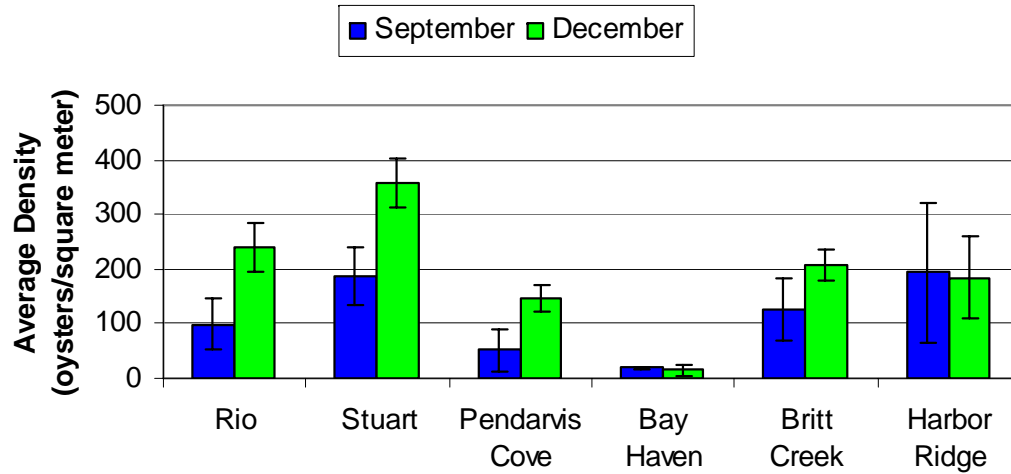
## September to January Growth and Mortality of Gardened Oysters in the St. Lucie Estuary

|                        | Willoughby Creek | Lower Estuary | Middle Estuary | North Fork | South Fork |
|------------------------|------------------|---------------|----------------|------------|------------|
| End length (cm)        | 3.12             | 3.66          | 3.43           | N/A        | N/A        |
| Start length (cm)      | 0.52             | 0.52          | 0.52           | N/A        | N/A        |
| Total growth (cm)      | 2.60             | 3.14          | 2.91           | N/A        | N/A        |
| Average % dead         | 26               | 41            | 25             | N/A        | N/A        |
| Average Salinity (ppt) | 29               | 32            | 24             | 18         | 16         |

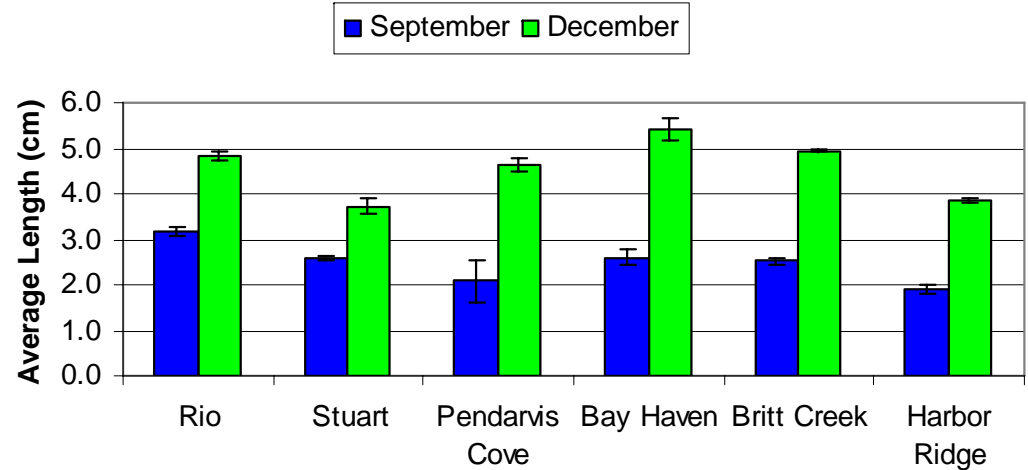


# Oyster Reef Results

Density of Live Oysters



Oyster Length





# Permitting Process

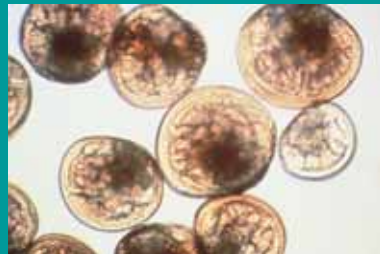


1. Apply for Stock Collection and Release Permit as part of a Special Activity License from FWC
2. Submit request for a release authorization 3 weeks ahead of each oyster exchange
3. Send sub-sample of oysters (3 to 5 mm shell length) to a USDA or FDA certified lab to be tested
4. Forward certificate of health for release authorization
5. Complete oyster release within 30 days of receiving authorization
6. Report the numbers released and the GPS coordinates of release areas within 30 days



# Future Plans

- Continue and expand Oyster Gardening Project
- Deploy recycled oyster shell and seed with eyed larvae inside containment booms (requires a Dredge and Fill Permit from DEP)





# Acknowledgments

- Community Foundation for Palm Beach and Martin Counties
- Oyster Gardening Volunteers
- Tom McCrudden, Research Aquaculture, Inc.
- Stephanie Reynolds, Chesapeake Bay Foundation
- SFWMD, IRL License Plate Funding
- Dan Haurert, SFWMD
- Bill Arnold, FWC
- Leroy Creswell, FL Sea Grant