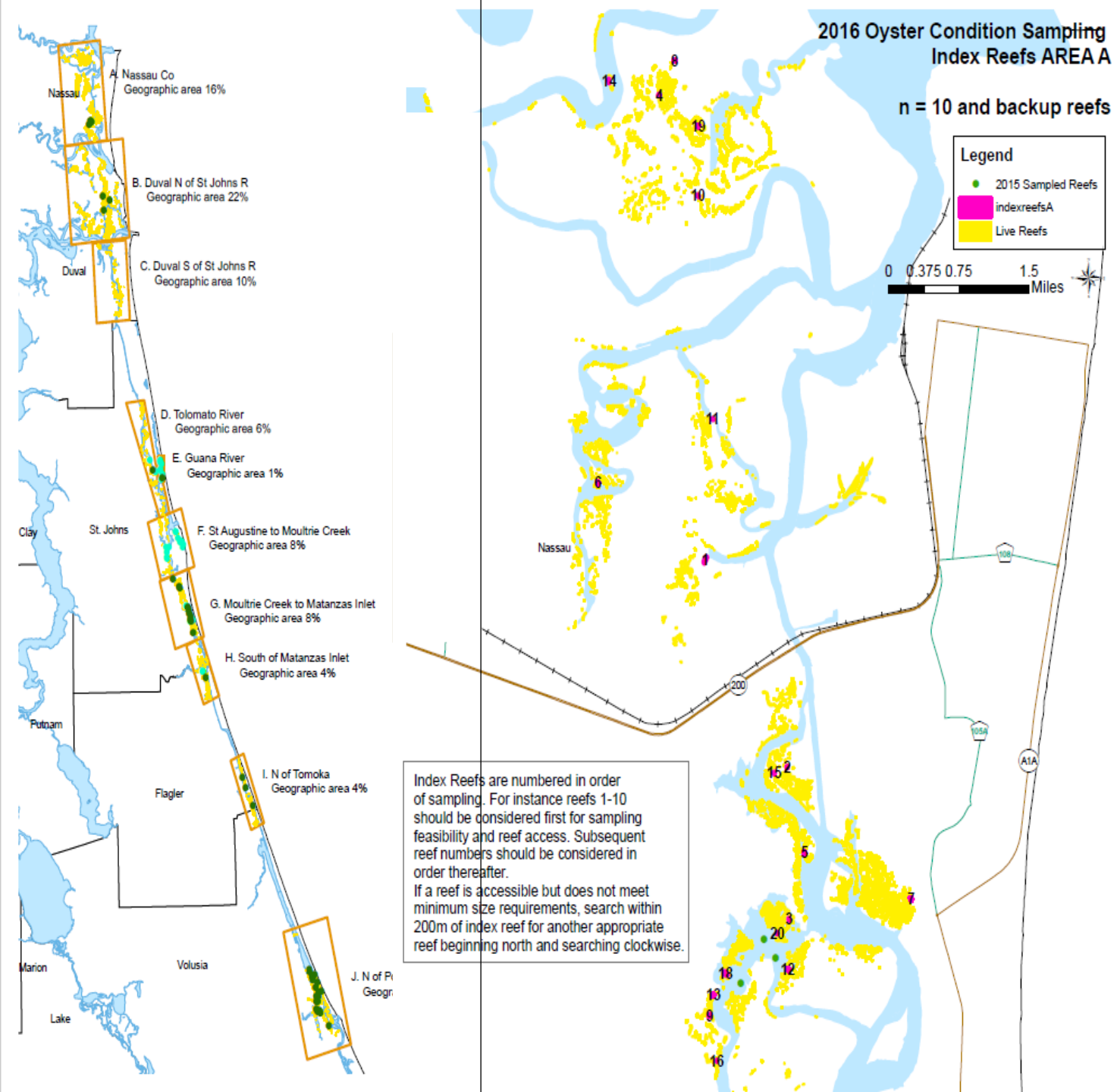
METHODS

Northeast Florida Oyster Condition Assessment (OCA)

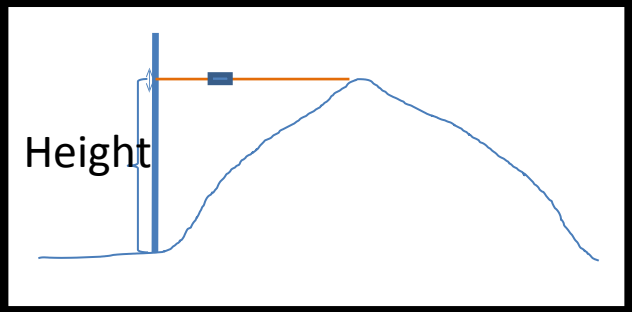
Protocol available at:
http://ocean.floridamarine.org/OIMMP/Resources/Walters%20et%20al%202016.pdf

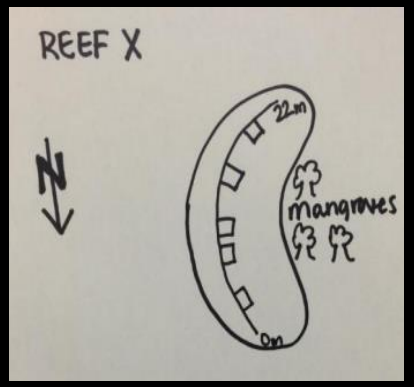

For intertidal reefs
only

Site Selection



Reef Characteristics





Quadrat Placement

Sampling

1 m X 1 m

<u>Non- Destructive</u>

- Percent Cover
  - *Live*
  - *Dead Shell*
  - *Box**
  - *Mud*
  - *Other*
- Cluster density
- Crown conchs & other large gastropods

Sampling

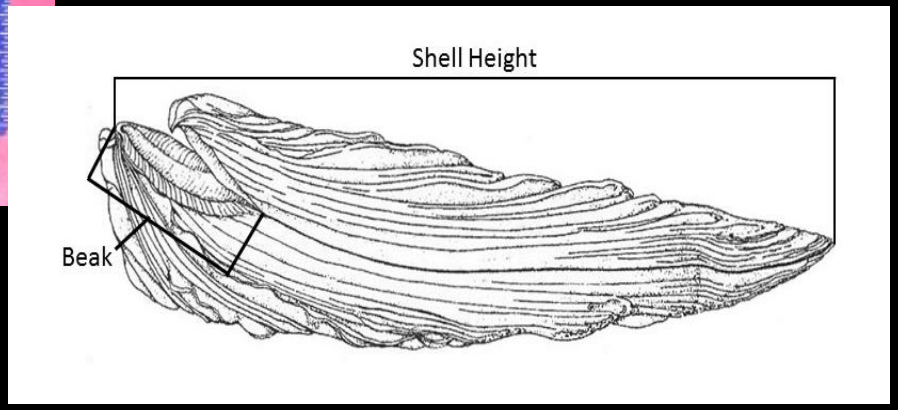
0.25 m X 0.25 m

Non-Destructive

- Reef thickness

Sampling

0.25 m X 0.25 m



<u>Destructive</u>

- Oyster burial depth
- Live oyster density
- Oyster shell height
- Sizes of other inverts

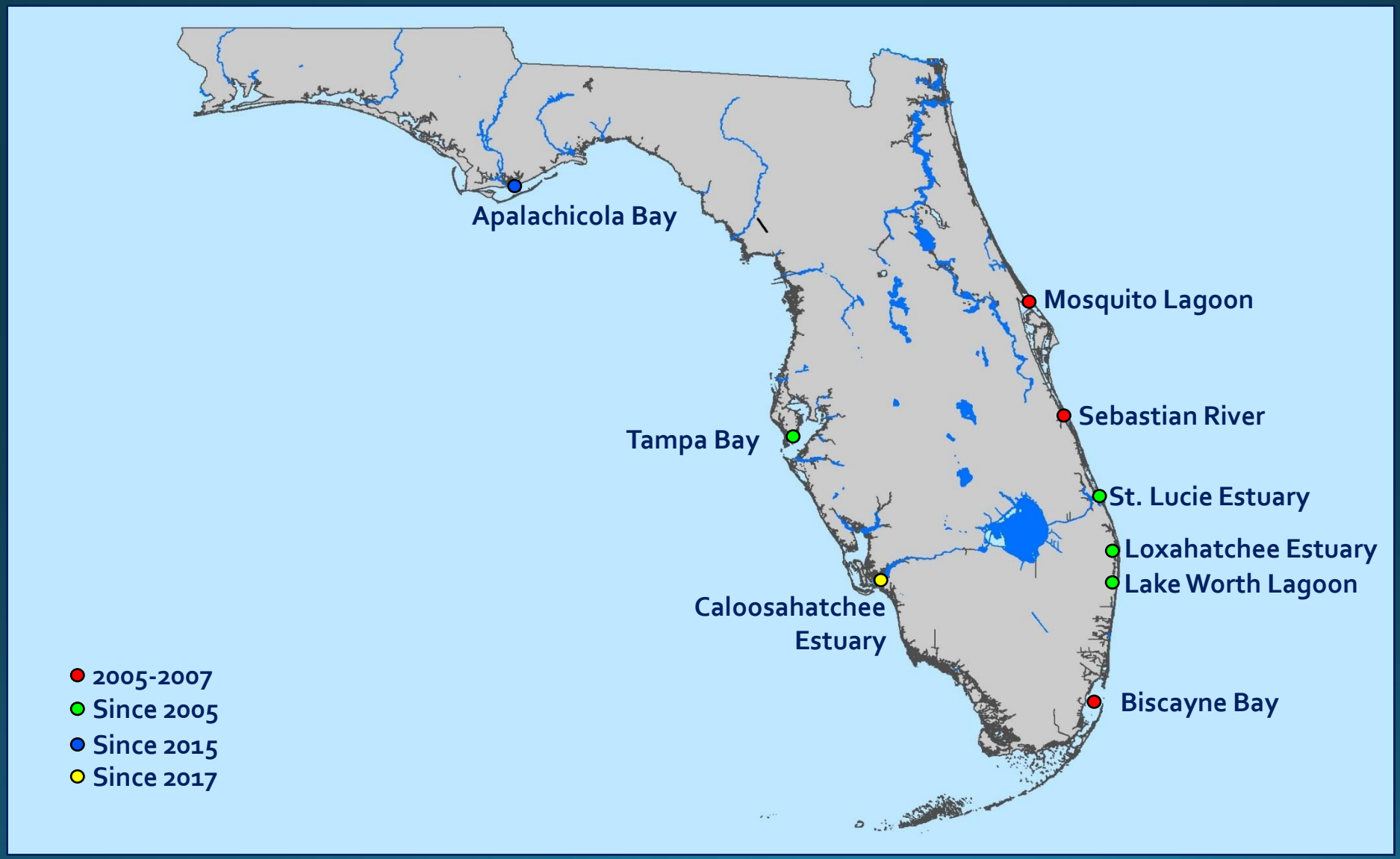
FWRI Oyster Program Methods

Melanie Parker

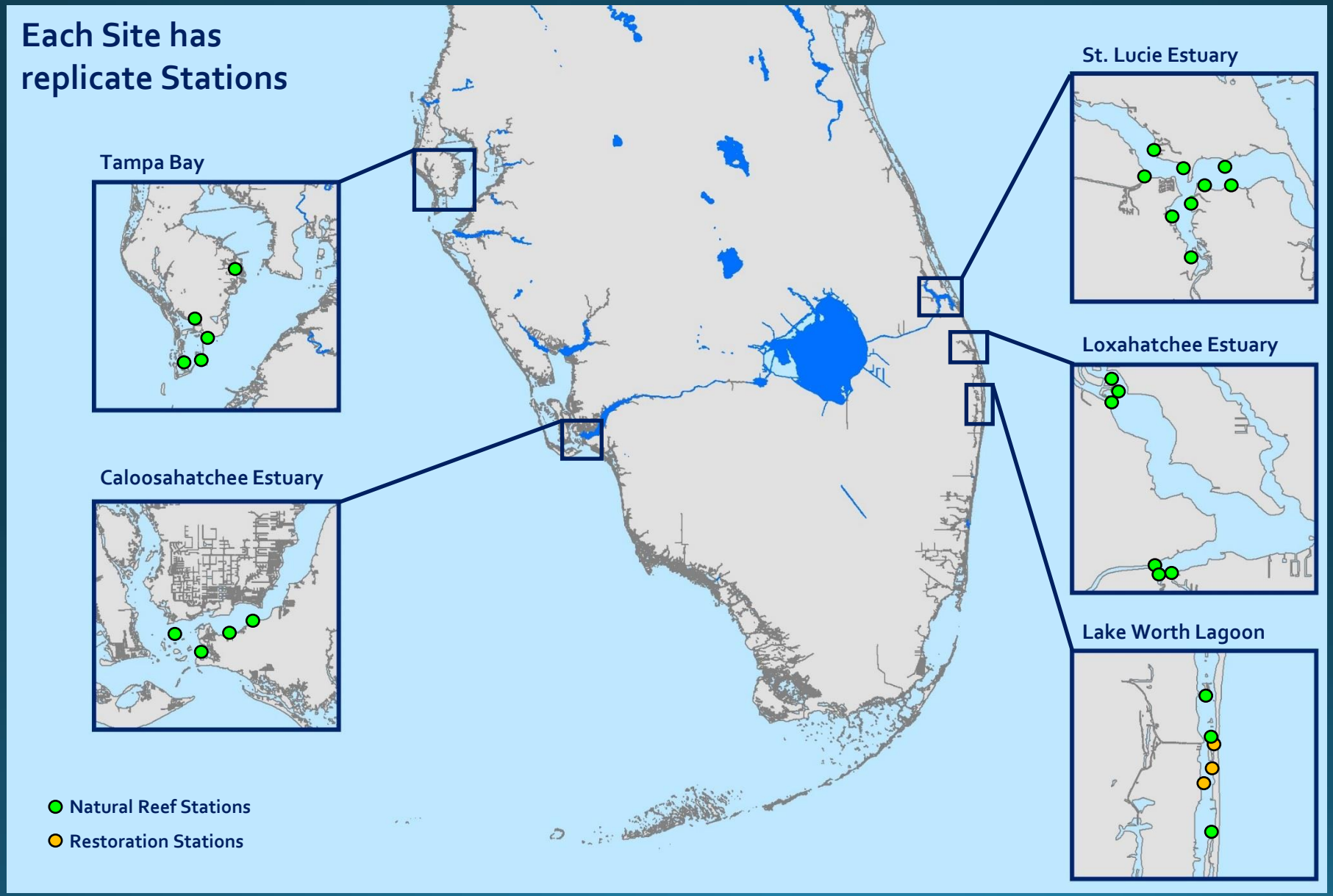
2019 OIMMP Workshop

January 22-24, 2019

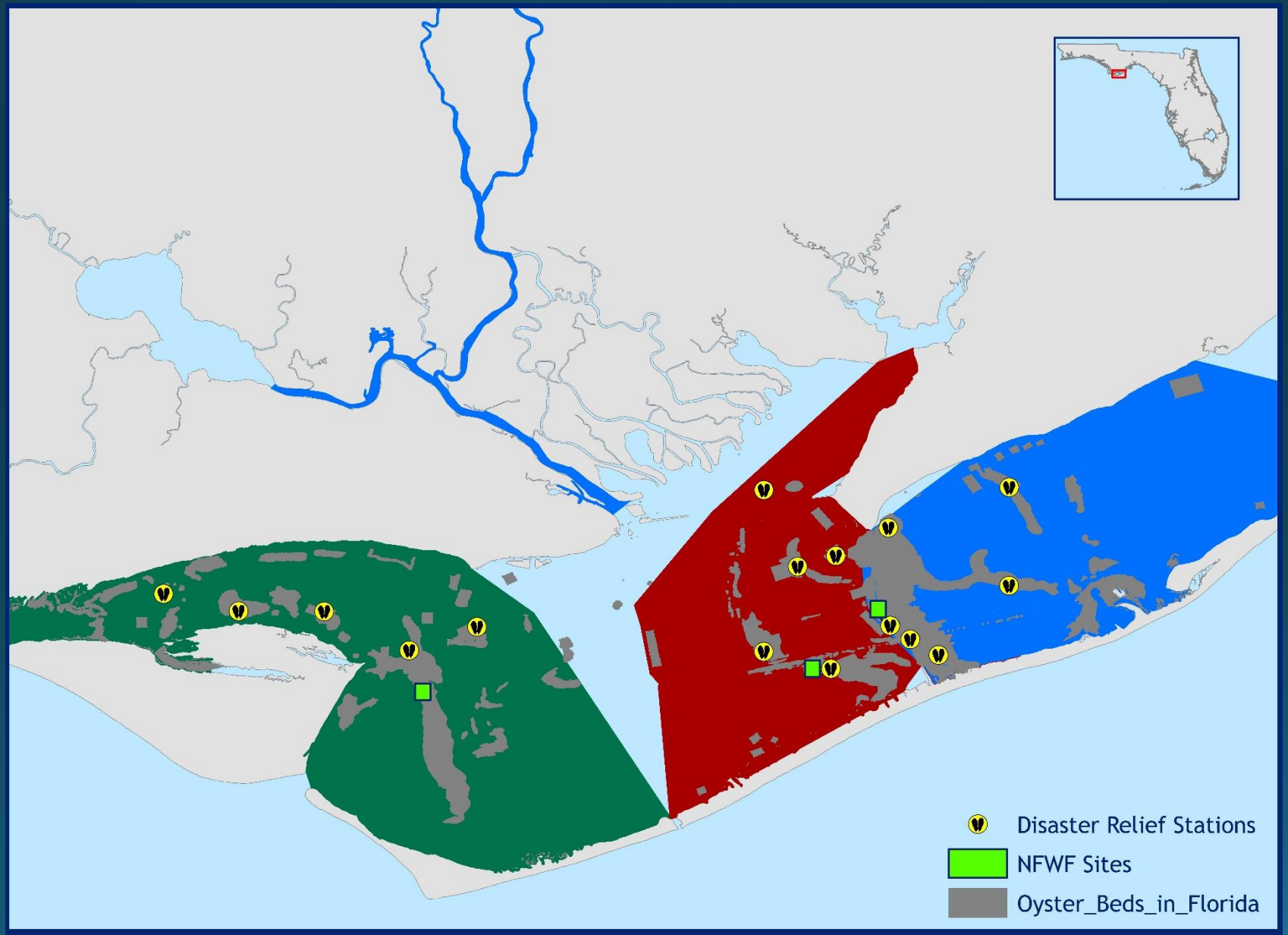
FWRI Oyster Monitoring Sites



South Florida Oyster Monitoring



Apalachicola Bay Monitoring

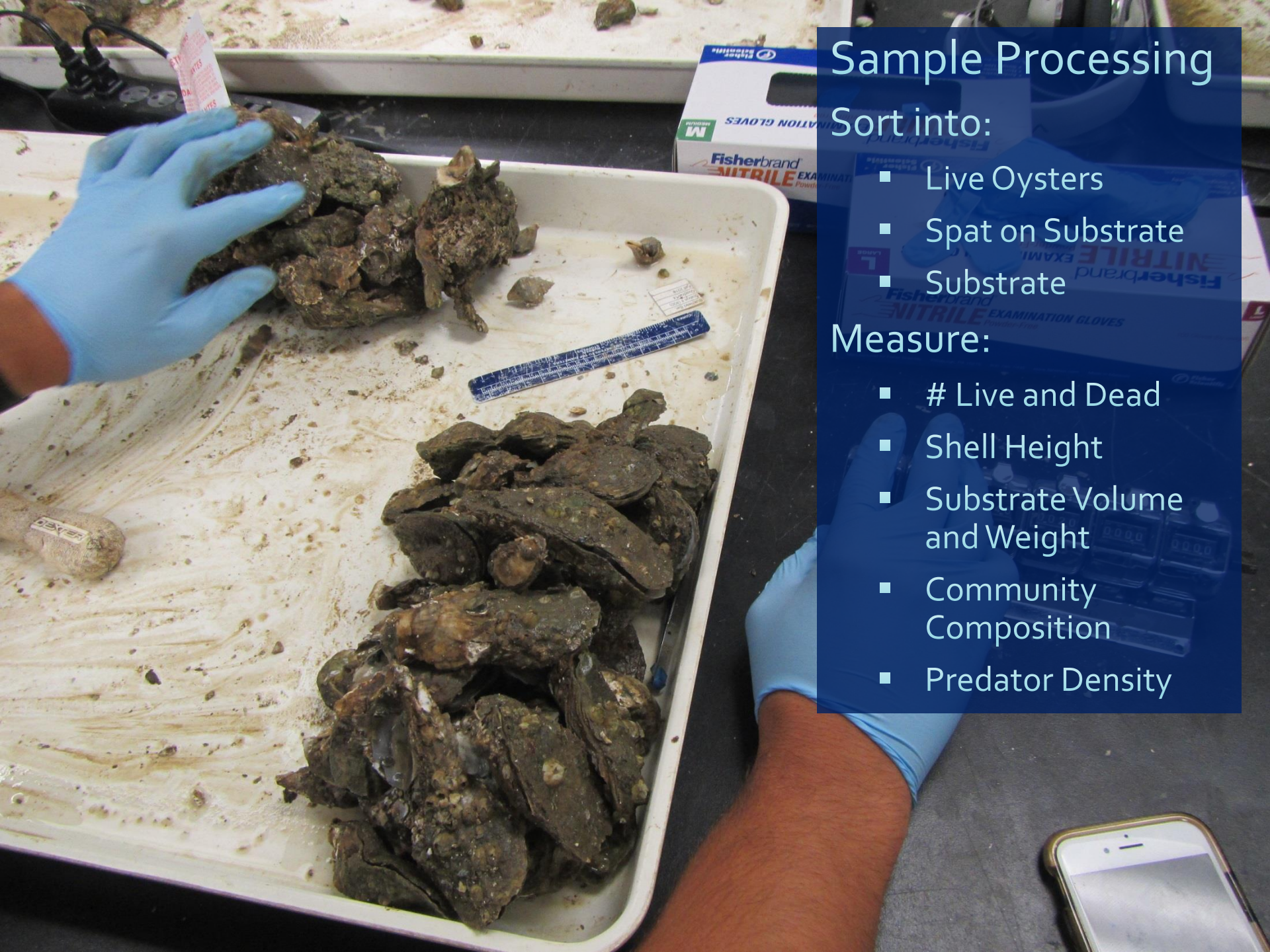


Quadrat Surveys

- Oyster Density and Size Distribution
- Conducted Semi-Annually or Quarterly
- Intertidal and subtidal reefs
- 15 randomly deployed quadrats per station
- Count all live and dead with articulated shells
- Measure shell height of live oysters
- For some projects, record weight/volume of substrate in each quadrat

Diver Collection


250



Sample Processing

Sort into:

- Live Oysters
- Spat on Substrate
- Substrate

Measure:

- # Live and Dead
- Shell Height
- Substrate Volume and Weight
- Community Composition
- Predator Density

Spat Recruitment

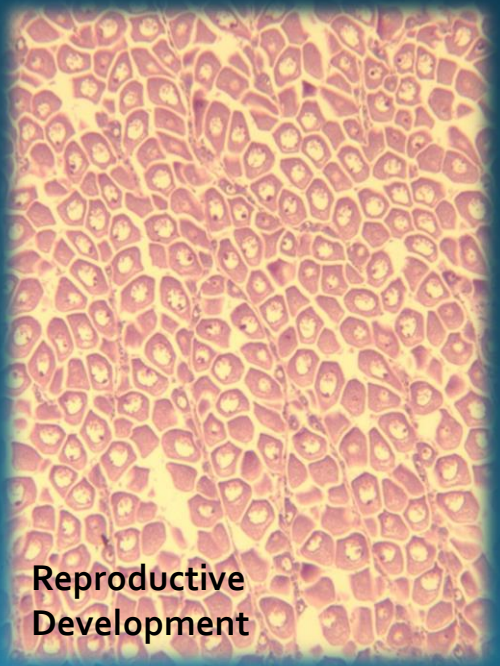
- Deployed and retrieved monthly
- Intertidal and subtidal reefs
- 3 T-bars per station

Monthly Dissections

- Collect live oysters from each station and return to lab for dissections
- 10-12 per station
- All oysters are cleaned and SH measured
- Subset processed for Condition Index
- Subset processed for Dermo Prevalence and Intensity as well as Reproductive Development


Disease Analyses


Physiological Condition


Reproductive Development

Protocol Comparison

Parameter	FWC monitoring protocol	Northeast Coast Oyster Condition Assessment (OCA) Protocol
Site selection	Repeat sampling of 3 to 5 stations at each of 10 sites	Randomized reef selection within areas of interest, no repeat sampling thus far
Quadrat arrangement	15 0.5x0.5-m quadrats randomly placed on reef	5 1x1-m quadrats randomly placed along transect through densest section of reef with nested 0.25x0.25-m quadrats
Density of live oysters	Live oysters and boxes counted within 0.5x0.5-m quadrats	Number of live oysters counted within 0.25x0.25-m quadrats
Shell height	Measure 10 to 50 live oysters per quadrat on site or in lab	Measure 50 live oysters per 0.25x0.25-m quadrat in lab

Protocol Comparison

FWC-specific metrics

Parameter	FWC monitoring protocol	Northeast Coast Oyster Condition Assessment (OCA) Protocol
Water quality	Water quality, secchi depth, flow rates	not monitored*
Disease	*Perkinsus marinus* prevalence and intensity determined in 5 oysters per station	not monitored
Reproductive state	Histological examination used to classify oysters by reproductive state	not monitored
Recruitment	Spat monitoring arrays used to calculate recruitment rates	not monitored*
Mortality rates	90 wild oysters left in open cages for one month; results used to calculate mortality rates	not monitored**

*Monitored by GTMNERR, although not in OCA protocol

**Monitored by visiting scientists in GTMNERR

Protocol Comparison

OCA-specific metrics

Parameter	FWC monitoring protocol	Northeast Coast Oyster Condition Assessment (OCA) Protocol
% cover	not monitored	% cover by live oysters, shell, sediment, and other invertebrates determined in 1x1-m quadrats
Reef height	not monitored	Reef height and slope recorded, as well as reef thickness* in each 0.25x0.25-m quadrat
Burial	not monitored	Burial depth recorded for all live oysters and live oyster clusters in each 0.25x0.25-m quadrat*
Clusters	not monitored	Density of oyster clusters (groups of > 5 oysters) recorded in each 1x1-m quadrat
Associated fauna	Number and biomass of macrofaunal species at select sites	Species and lengths of other mollusks in 1x1-m quadrat and other invertebrates* in 0.25x0.25-m quadrat recorded
Invasive species	not monitored	Invasive species collected and preserved for DNA extraction*

*Metric not used in GTMNERR monitoring