The Apalachicola Bay System Initiative (ABSI)

Sandra Brooke Ph.D.
ABSI Science Director
Research Faculty, FSUCML

ABSI science update
November 12, 2020

Hatchery completed September 2020

Hired hatchery technician Shannon Kirk

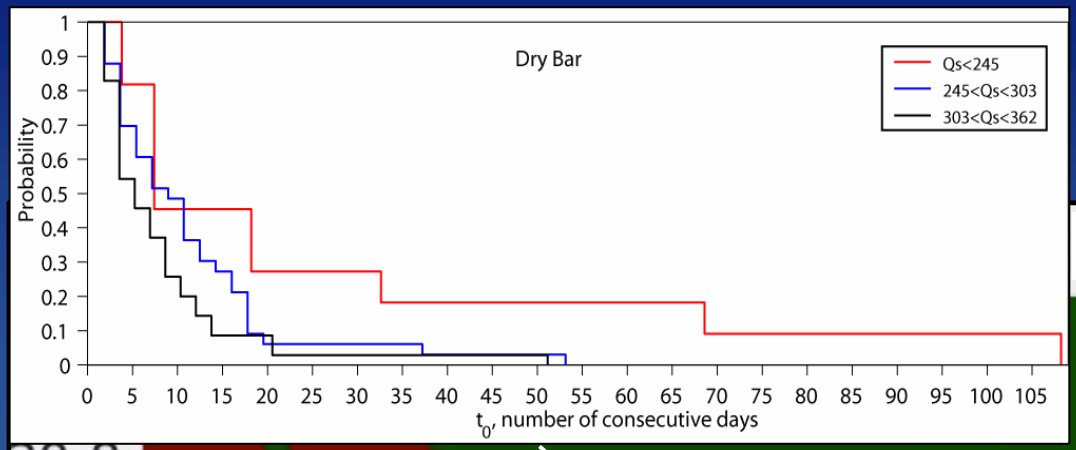
First spawn attempted October 6-12

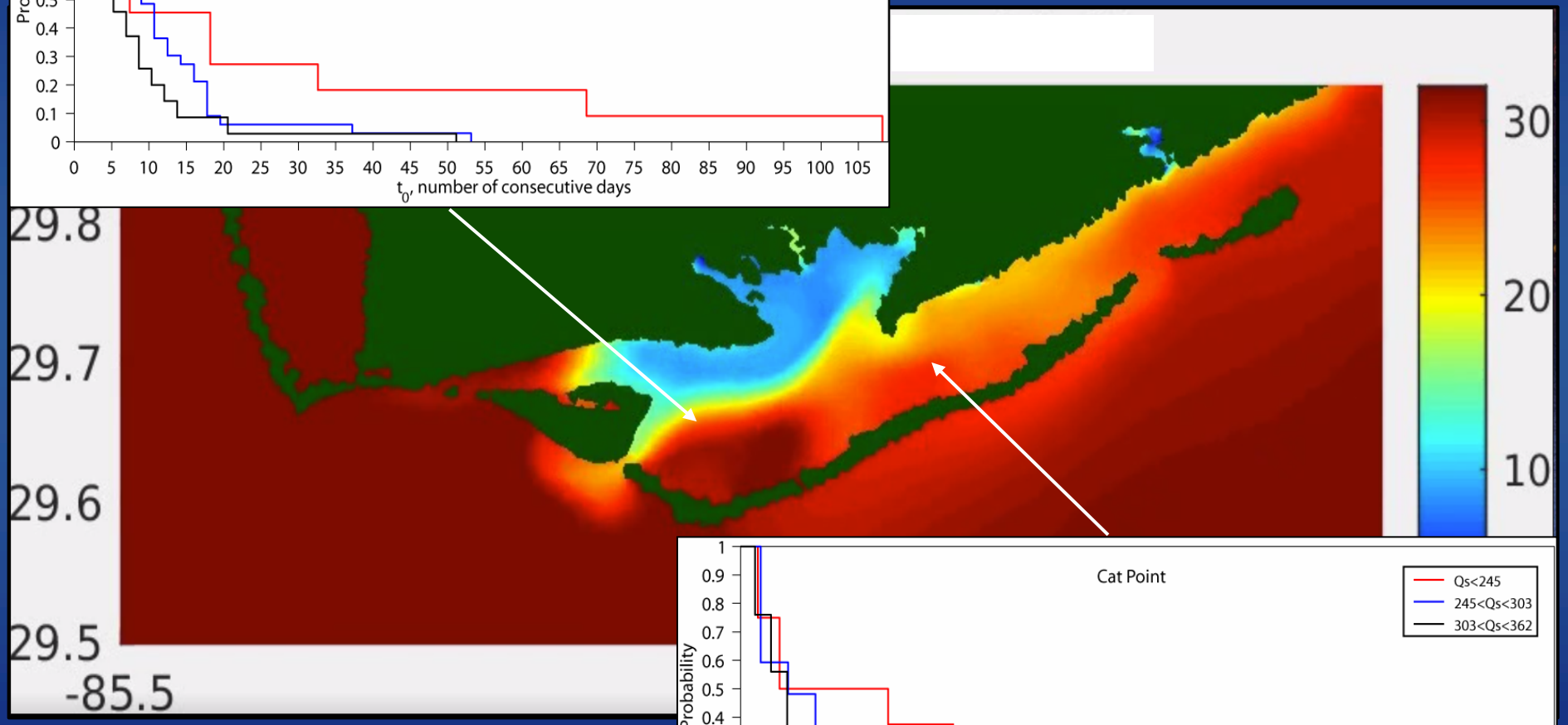
Males spawned, females did not cooperate

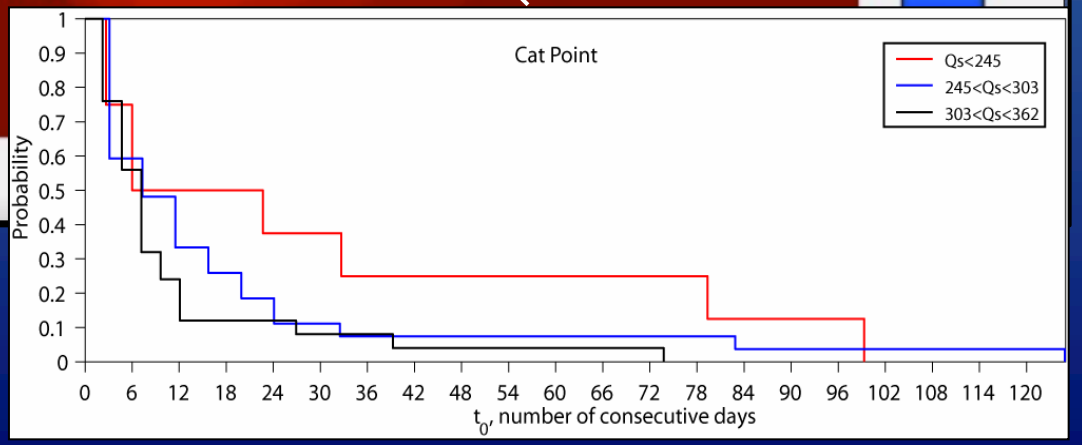
First major spawn spring 2021

Watershed modeling

Next task is to develop estuarine metrics….

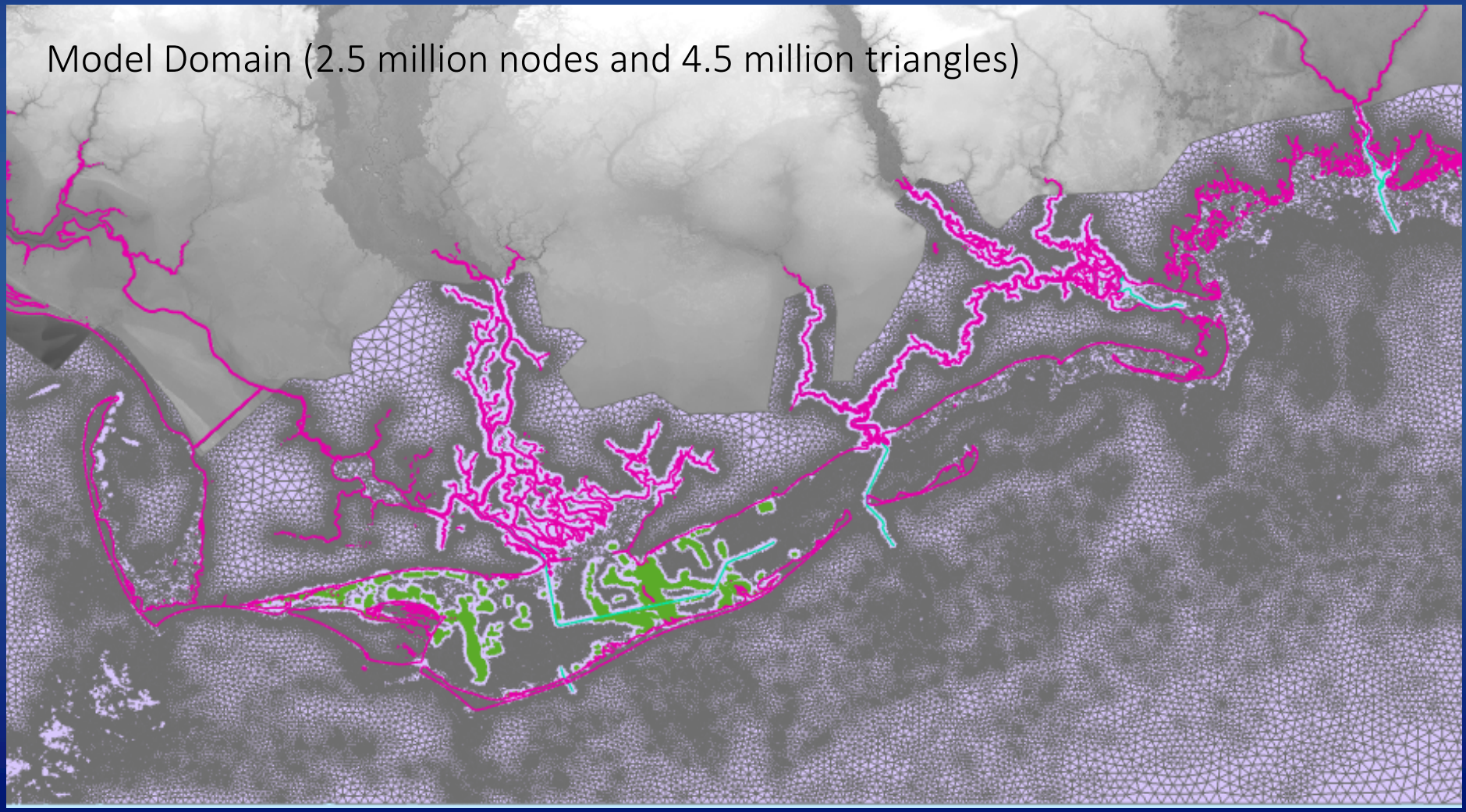






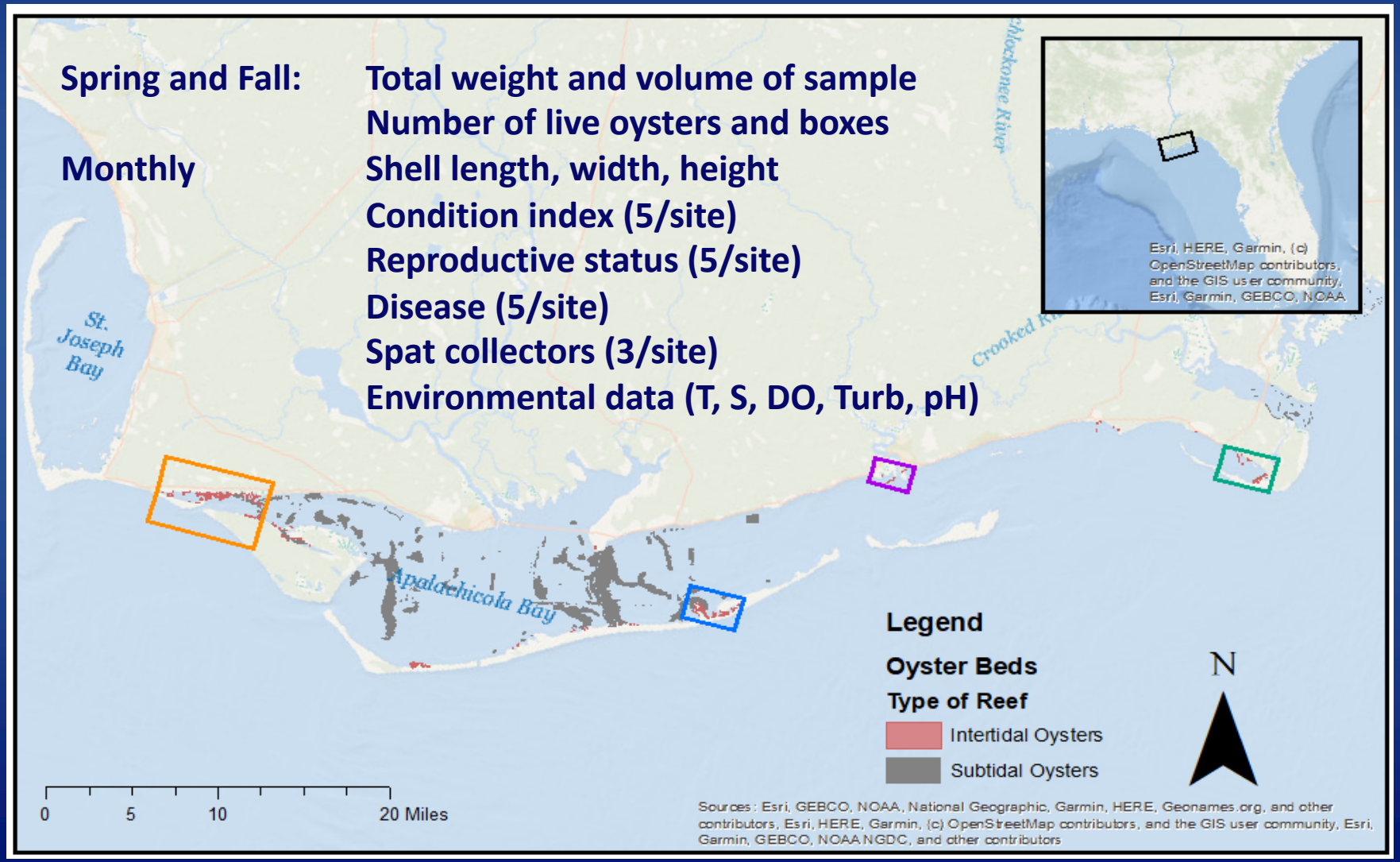
Biophysical modeling

Dr. Morey's group has created a very high resolution grid within the ABSI area of interest, which will allow fine-scale predictions of flow and larval dispersal. This model will be used to examine distribution of estuarine metrics under different river flow scenarios



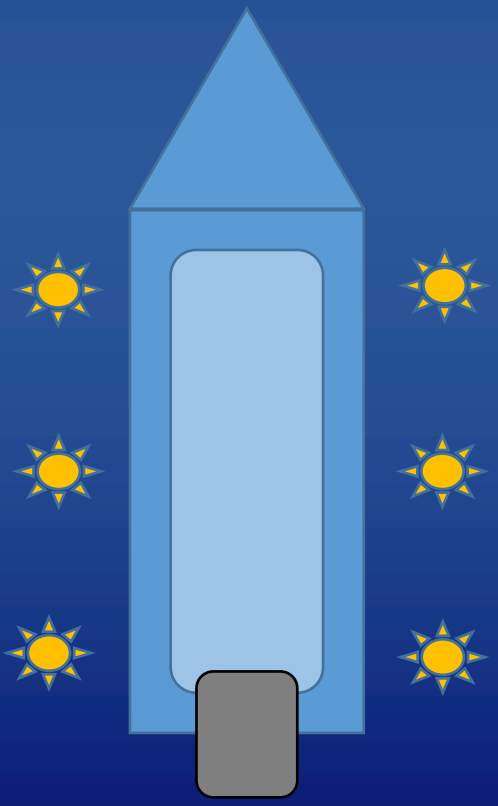
Inter-tidal oyster populations

Indian Lagoon, East Cove, Carabelle, Alligator Harbor
Five x 0.25 m^2 quadrats per site

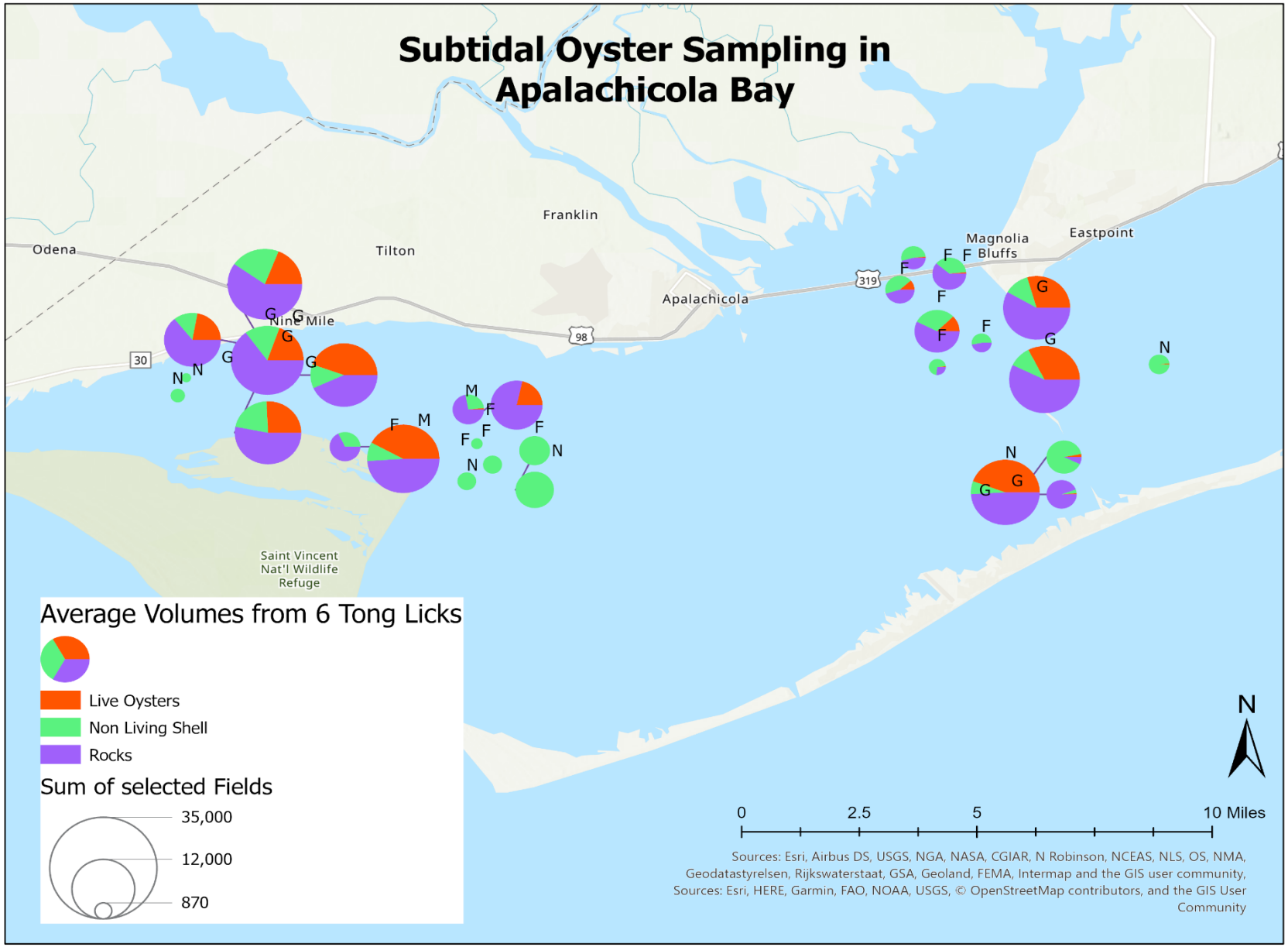


Sub-tidal oyster populations

Subtidal surveys using tongs
6 samples per site
Volume: Rock, dead shell, live oysters
Counted: spat, adults, market, boxes
Measured: live oysters (<25, 25-76, >76)



Preliminary data



Historical Finfish Community Analysis

Results so far

Community structure varies among years, but drivers are unclear

- No clear relationships among environmental variables and sampling years
- River flow (high/med/low) had a significant, but weak, relationship with the otter trawl data

There is strong seasonality in community structure for all gear types likely related to temperature

- Additional environmental variables associated with community structure include salinity, depth, and water clarity

Current analyses are focused on using river flow rate as a continuous variable (rather than categories), to better understand influence of flow on patterns of community structure through the 18-year time series

Additional ongoing projects

Use high resolution drone imagery for rapid assessment of intertidal oysters

Assess genetic population structure within and outside of the ABSI region

Develop a predictive habitat model for oysters in the ABSI region

Examine isotopic values of oysters, fishes, plankton and sediments to compare with previous study in 1992-94 (Chanton and Lewis 2002)

Additional tasks

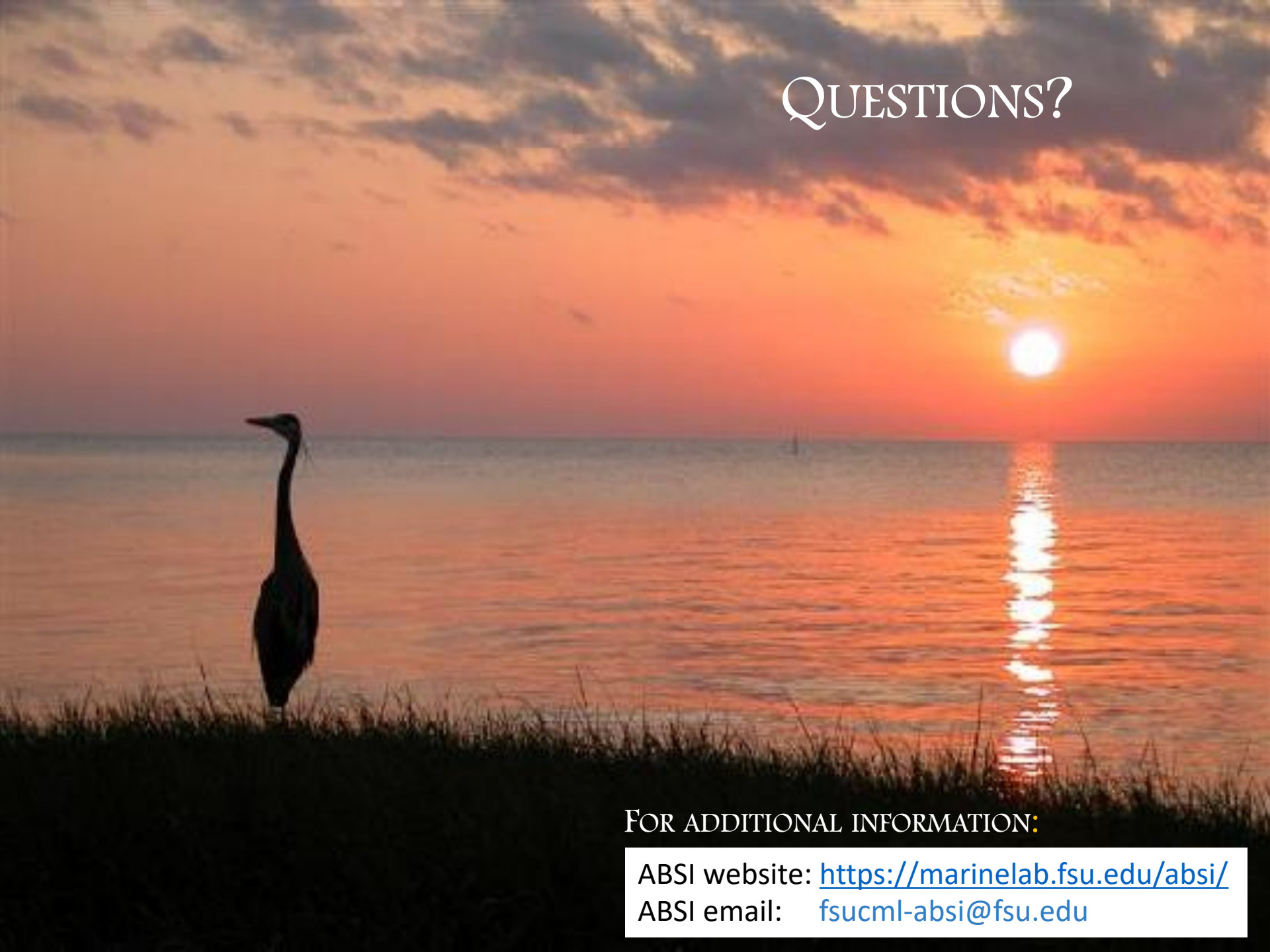
Assimilate data on

- Environmental conditions and nutrients (ANERR)
- Oyster populations (intertidal and subtidal)
- Restoration efforts: what was planted, how much, where, when and by whom?

Fill in sub-tidal mapping gaps

Develop a restoration experiment in collaboration with FWC

Deploy instruments – if the storms ever stop!!!



Questions?

For additional information:

ABSI website: https://marinelab.fsu.edu/absi/
ABSI email: fsucml-absi@fsu.edu