



THE APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)



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The ABSI seeks to gain insight into the root causes of decline of the Apalachicola Bay ecosystem, and the deterioration of oyster reefs
Ultimately, the ABSI will help develop a management and restoration plan for oyster reefs and the long-term health of the bay

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

Manuscript submitted to Coasts and Estuaries on May 13th
Analysis used 19 years of FWC Fisheries independent monitoring data

1 **Analysis of multidecadal nekton communities in a regulated**
2 **river-fed estuary: assessing temporal changes relative to**
3 **river flow rates in the Apalachicola Bay System, Florida**

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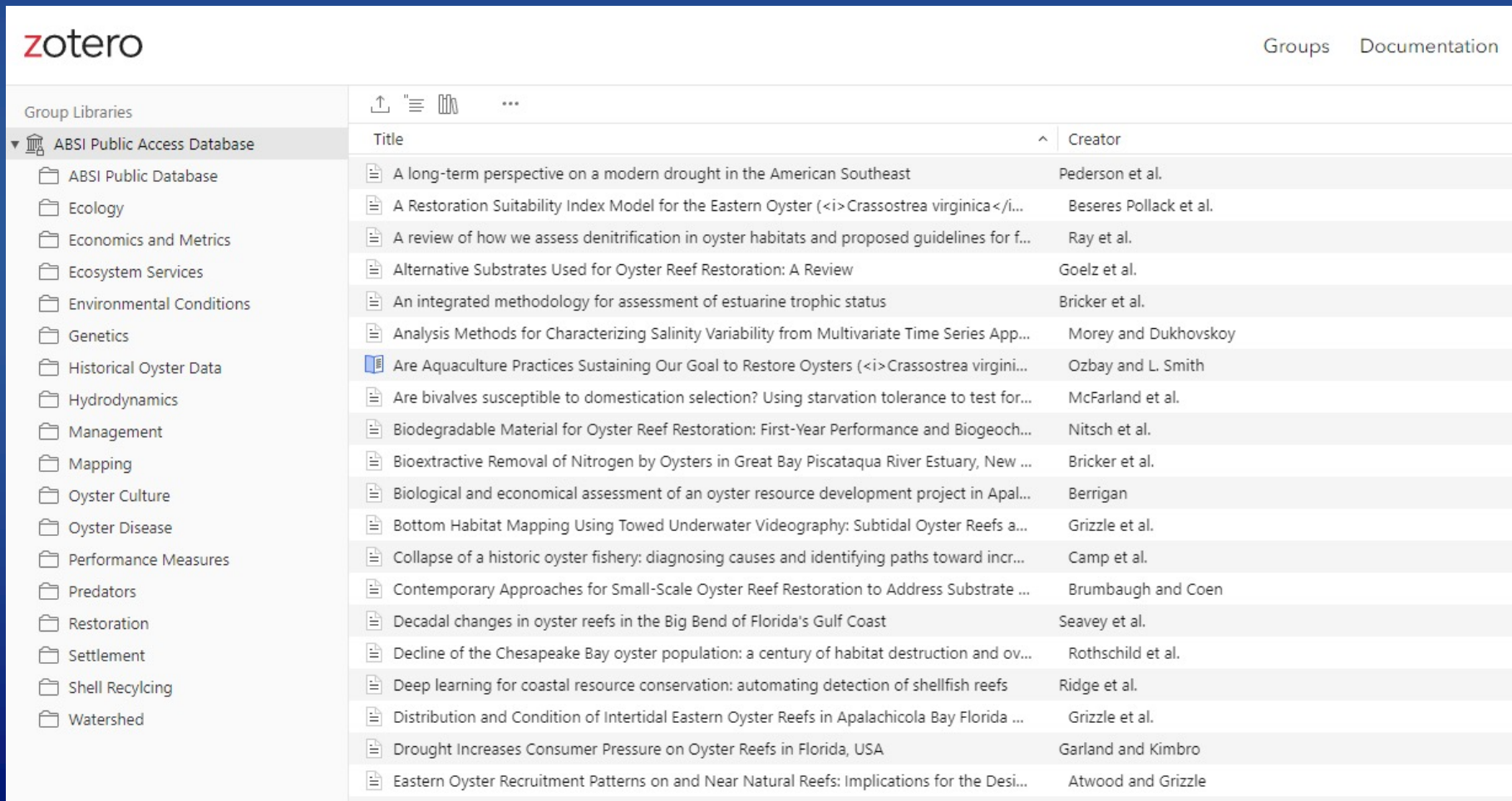
16 Submission date: 5/13/2022

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Literature Database

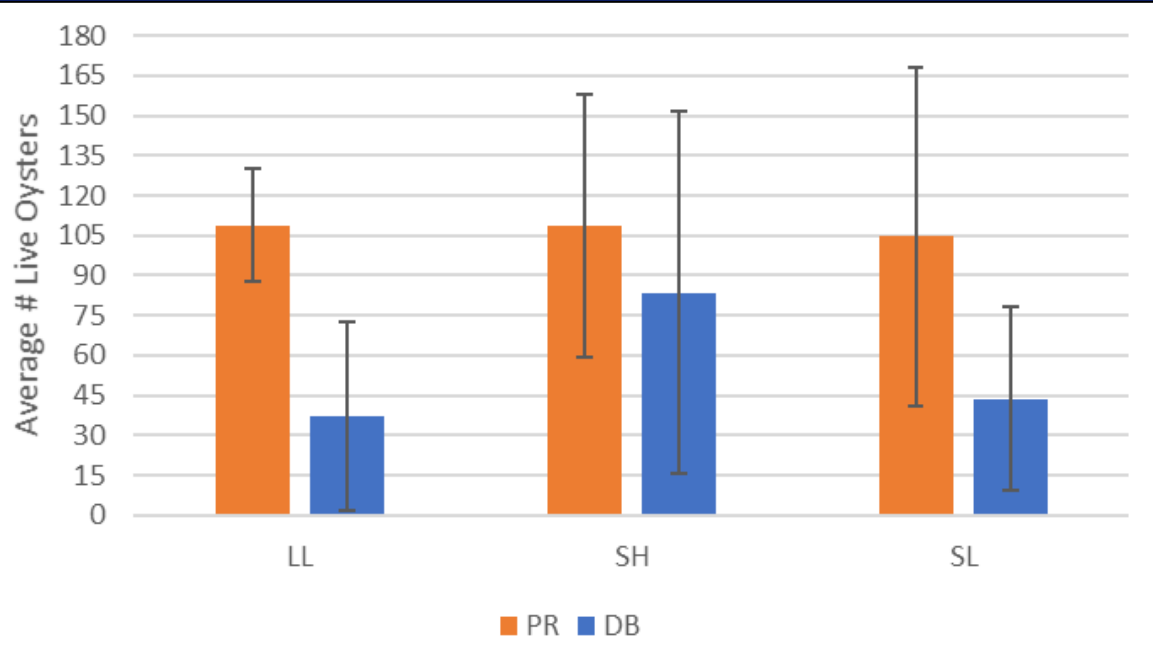
- 76 citations with associated documents
- 17 different categories, searchable database
- Free software (Zotero.org)
- The database will be posted on the ABSI website in the near future



The screenshot displays the Zotero web interface. On the left, there is a sidebar with a tree view of 'Group Libraries'. The 'ABSI Public Access Database' is expanded, showing 17 sub-libraries: ABSI Public Database, Ecology, Economics and Metrics, Ecosystem Services, Environmental Conditions, Genetics, Historical Oyster Data, Hydrodynamics, Management, Mapping, Oyster Culture, Oyster Disease, Performance Measures, Predators, Restoration, Settlement, Shell Recycling, and Watershed. The main content area shows a table of publications with columns for 'Title' and 'Creator'. The table contains 17 rows of data, each with a document icon, a title, and the author(s).

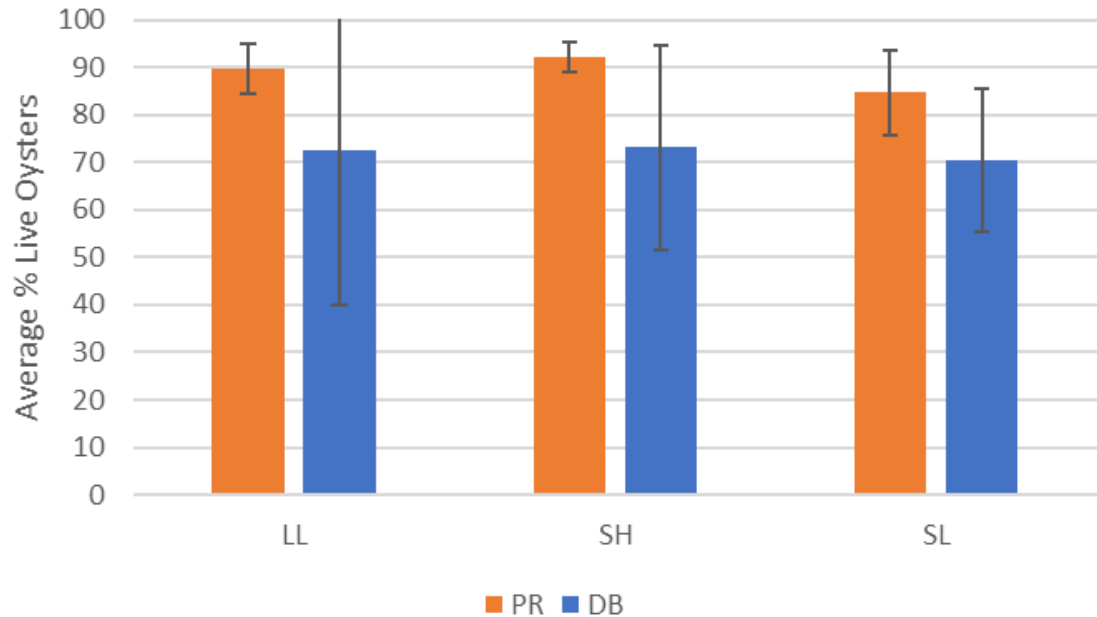
Title	Creator
A long-term perspective on a modern drought in the American Southeast	Pederson et al.
A Restoration Suitability Index Model for the Eastern Oyster (<i>Crassostrea virginica</i>...)	Beseres Pollack et al.
A review of how we assess denitrification in oyster habitats and proposed guidelines for f...	Ray et al.
Alternative Substrates Used for Oyster Reef Restoration: A Review	Goelz et al.
An integrated methodology for assessment of estuarine trophic status	Bricker et al.
Analysis Methods for Characterizing Salinity Variability from Multivariate Time Series App...	Morey and Dukhovskoy
Are Aquaculture Practices Sustaining Our Goal to Restore Oysters (<i>Crassostrea virgini...	Ozbay and L. Smith
Are bivalves susceptible to domestication selection? Using starvation tolerance to test for...	McFarland et al.
Biodegradable Material for Oyster Reef Restoration: First-Year Performance and Biogeoch...	Nitsch et al.
Bioextractive Removal of Nitrogen by Oysters in Great Bay Piscataqua River Estuary, New ...	Bricker et al.
Biological and economical assessment of an oyster resource development project in Apal...	Berrigan
Bottom Habitat Mapping Using Towed Underwater Videography: Subtidal Oyster Reefs a...	Grizzle et al.
Collapse of a historic oyster fishery: diagnosing causes and identifying paths toward incr...	Camp et al.
Contemporary Approaches for Small-Scale Oyster Reef Restoration to Address Substrate ...	Brumbaugh and Coen
Decadal changes in oyster reefs in the Big Bend of Florida's Gulf Coast	Seavey et al.
Decline of the Chesapeake Bay oyster population: a century of habitat destruction and ov...	Rothschild et al.
Deep learning for coastal resource conservation: automating detection of shellfish reefs	Ridge et al.
Distribution and Condition of Intertidal Eastern Oyster Reefs in Apalachicola Bay Florida ...	Grizzle et al.
Drought Increases Consumer Pressure on Oyster Reefs in Florida, USA	Garland and Kimbro
Eastern Oyster Recruitment Patterns on and Near Natural Reefs: Implications for the Desi...	Atwood and Grizzle

Tonging data for restoration reefs



Average number of live oysters (per tong) by treatment and site

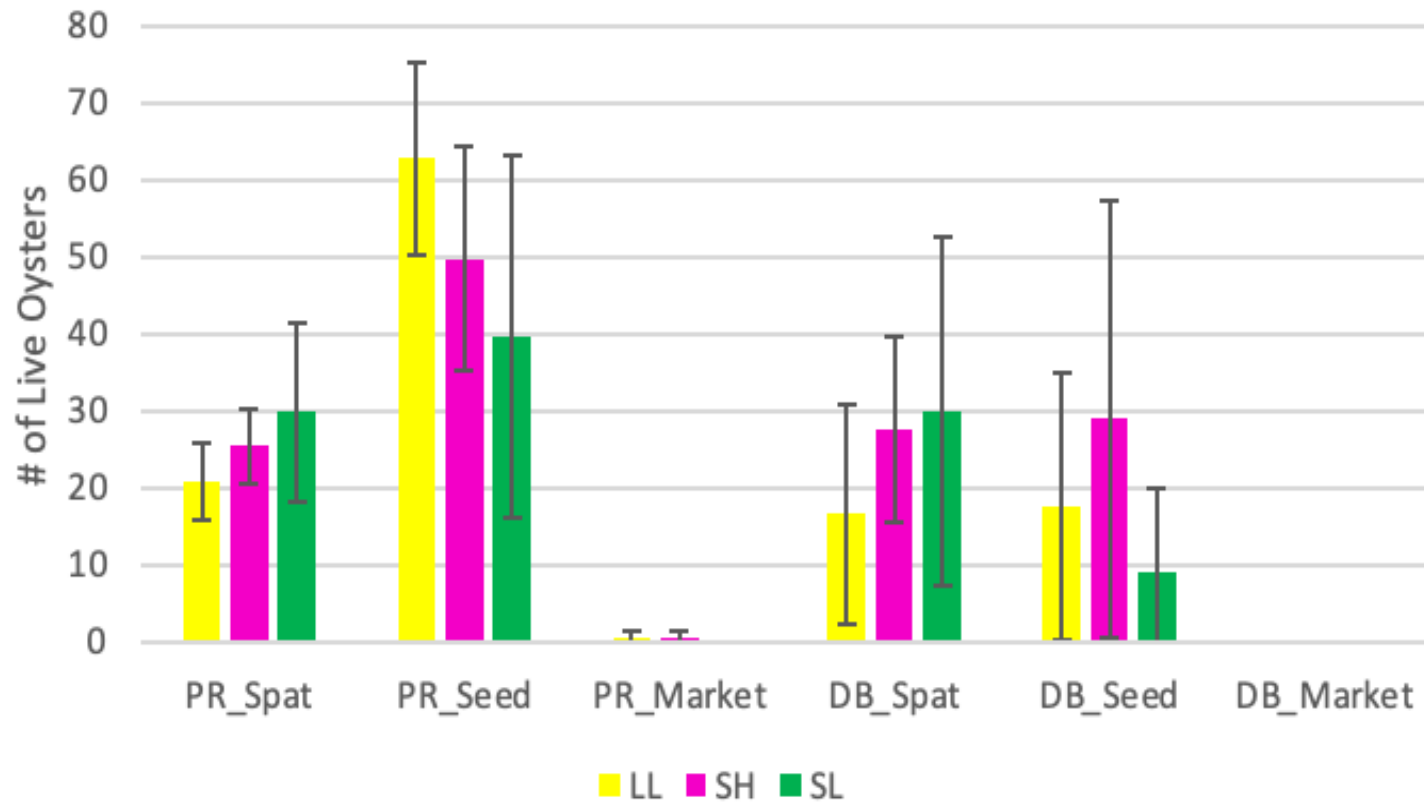
Average % live oysters (per tong) by treatment and site



Tonging data for restoration reefs

Average size class distribution
by treatment and site

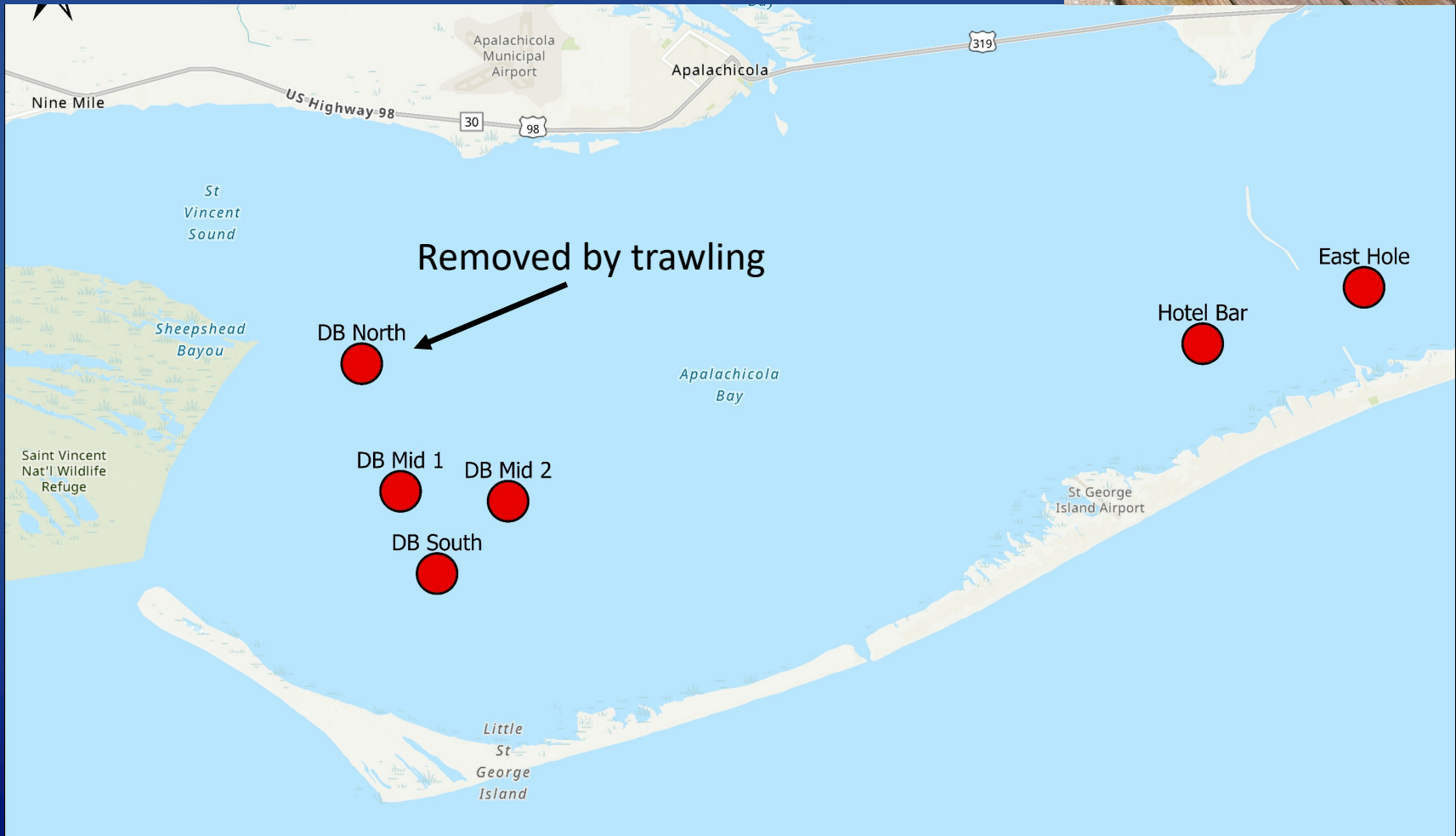
- Spat = < 25 mm
- Seed = 25-75 mm
- Market = >75 mm



Reefball experiments

Deployed April 2022

- 4 units per site
- 1 tray of shell for community analysis
- Units and trays removed and analysed quarterly



Hatchery Operations



Spawned early May with Peanut Ridge broodstock

Most were females (> 2 inches)

Few males – very small (< 2 inches)

Male gonads infected with trematodes (*Bucephalus* sp) – parasitic flatworms

First spawn ready to set – will be used for experiments

Next spawn mid-June

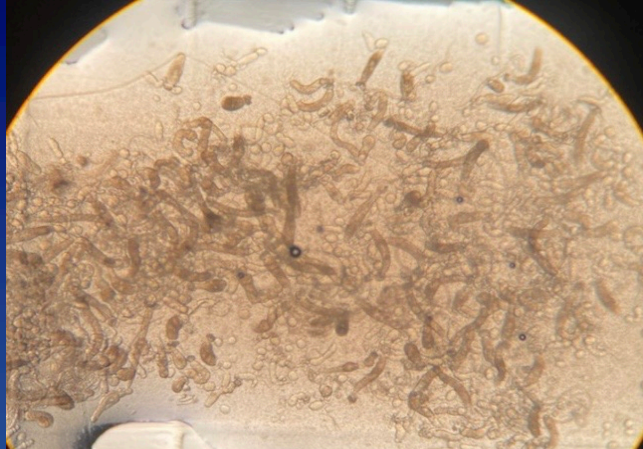
Interns hired May 24th – 2 FSU graduates

4 OysterCorps students

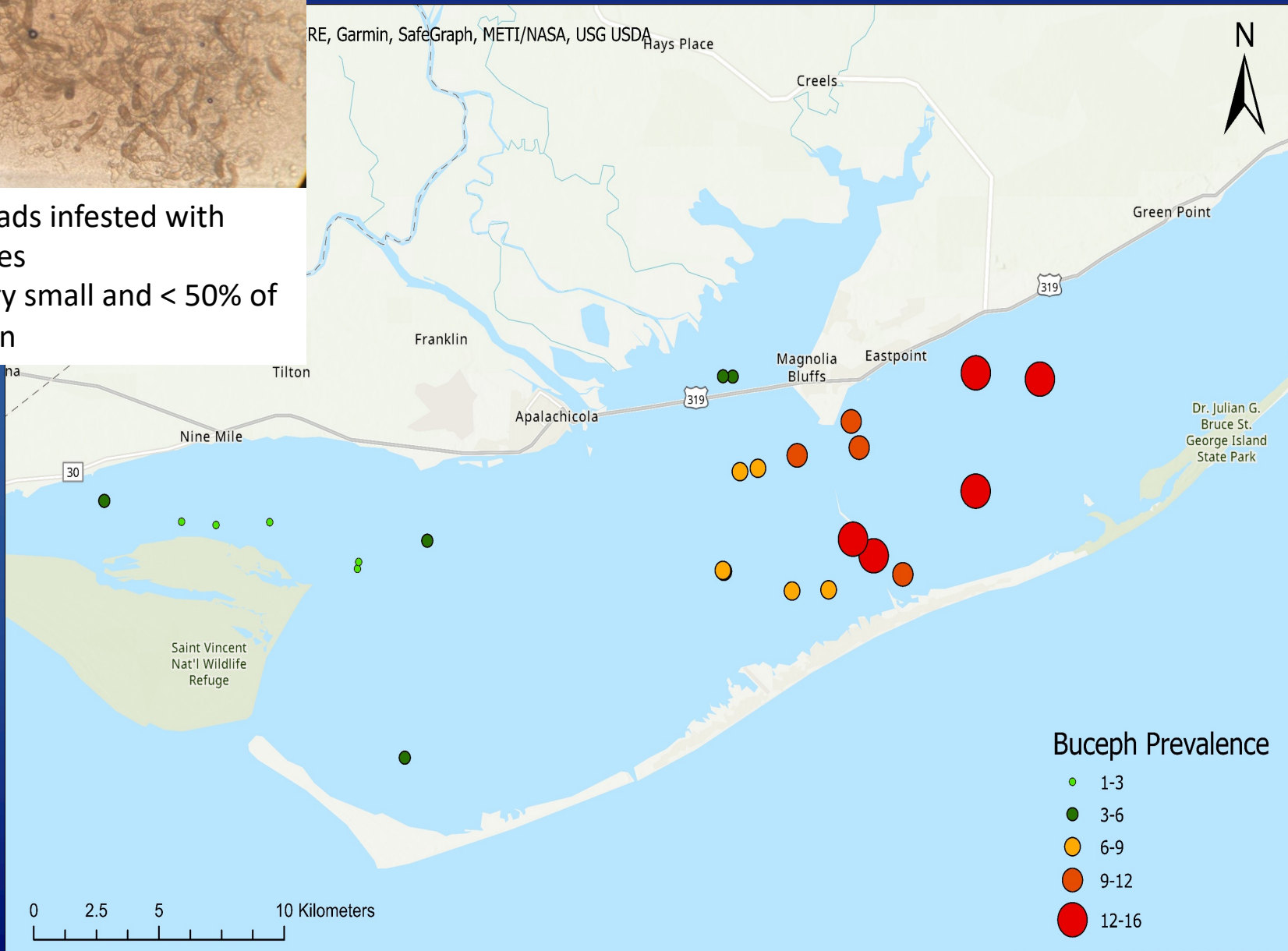


Trematode infections

Bucephalus sp



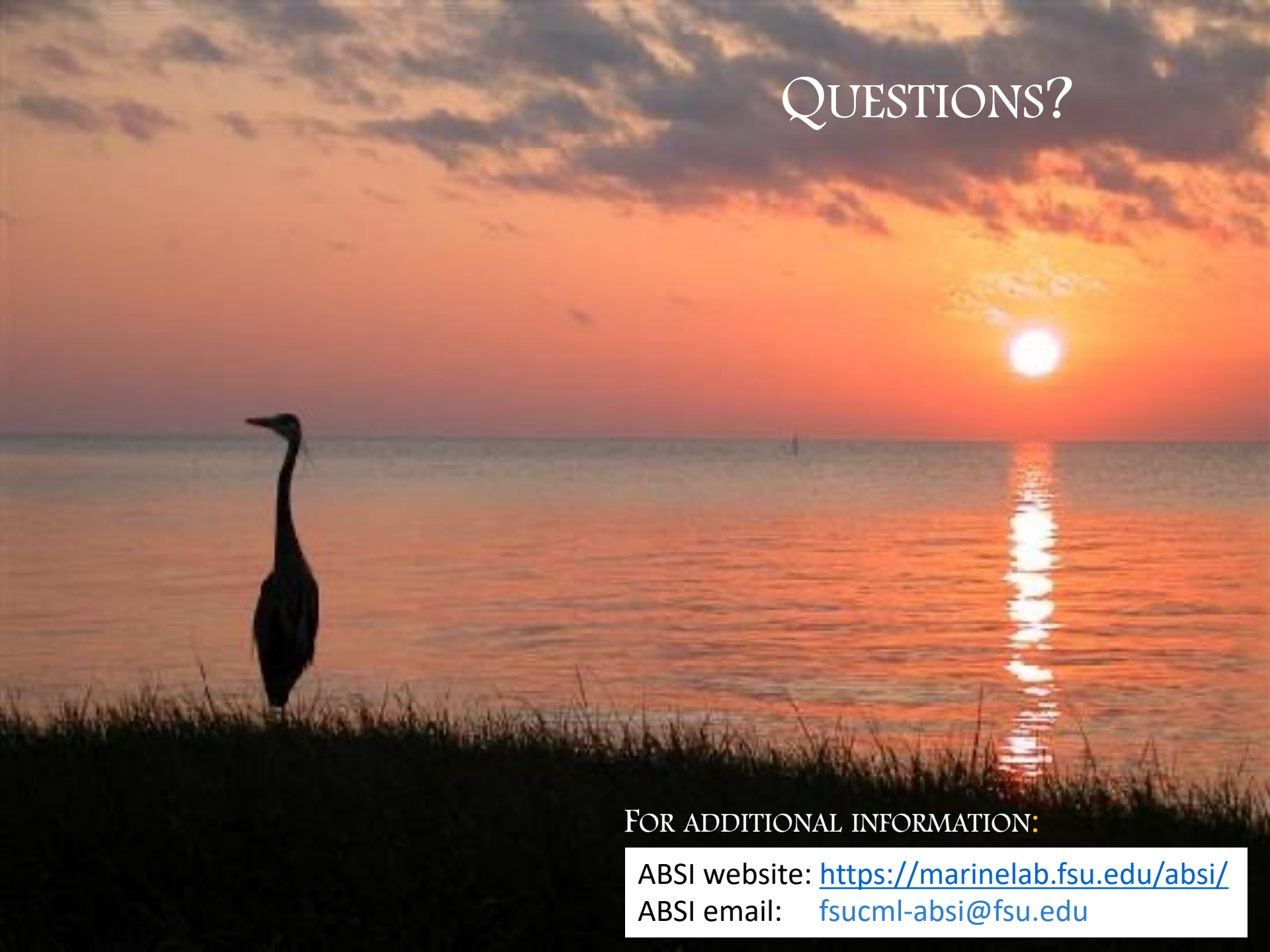
- Male gonads infested with trematodes
- Males very small and < 50% of population



Future priority tasks

- Monthly collections at 5 reefs at 4 intertidal sites for condition index, *Perkinsus marinus* (Dermo) and *Bucephalus*. Deploy spat traps
- Begin larval dispersal modeling
- Repeat spat deployment experiment with adjusted methods
- Deploy Multiparameter datalogger on aquaculture leases in the miles.
- Develop conceptual model and options for interactive tools.

QUESTIONS?



FOR ADDITIONAL INFORMATION:

ABSI website: <https://marinelab.fsu.edu/absi/>

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