Scaling-up Sponge Community Restoration in South Florida: its Efficacy and Ecosystem Implications

Progress Report
Fall 2016

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Scaling-up Sponge Community Restoration

(1) *Test whether sponge nurseries as donor sources are an efficient, and environmentally sound method for large-scale sponge restoration Florida Bay*

(2) *Test in a field experiment whether sponge restoration can restore natural sponge filtration*

(3) *Test whether aggregation of restoration sites nearby one another improves sponge reproductive success and recruitment, as well as the effectiveness of restoration sites as essential fish habitat*

(4) *Develop and incorporate community participation and a coordinated public outreach and education component*

(5) *Undertake a large-scale sponge restoration effort*

(6) *Estimate the cost to conduct large-scale sponge restoration*

Florida Keys Environmental Fund, Inc.

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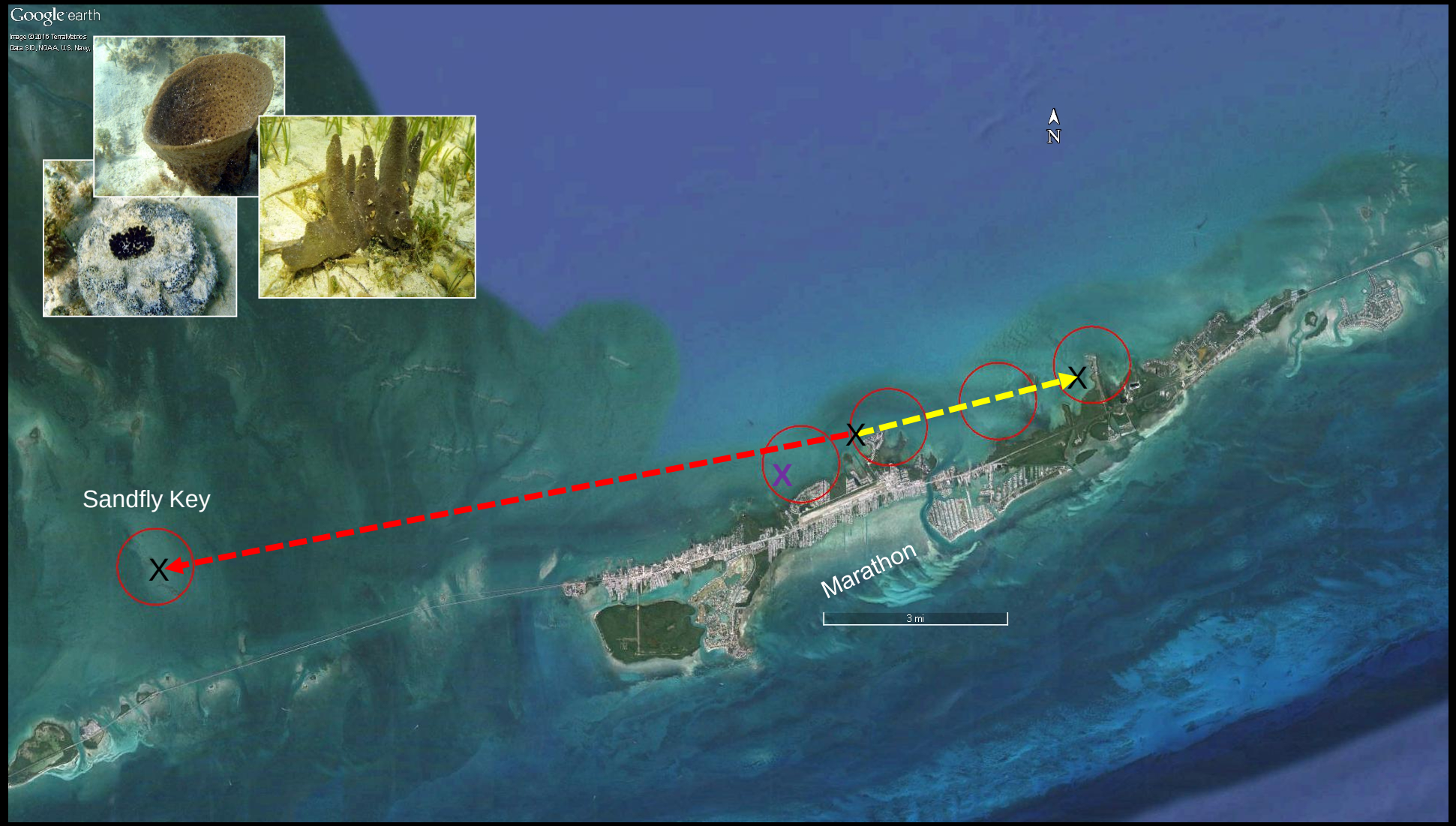
Testing Sponge Nurseries

- Establish a series of sponge nurseries
- Specific questions about survival and growth rates of nursery-propagated sponges:
  - Can newly-propagated sponges be moved directly to restoration sites
  - How does attachment material & elevation above the substrate affect growth & survival of sponge cuttings
  - How does propagation effect “donor” sponges

Testing Sponge Nurseries

Experiment Initiated Feb 2016



Testing Sponge Nurseries

Sponge Propagation Process

Feb – Apr 2016

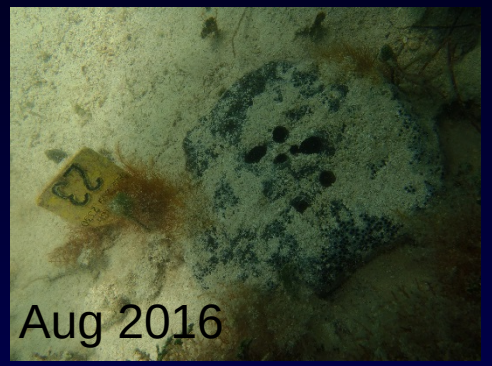
Loggerhead “Donor” Sponge

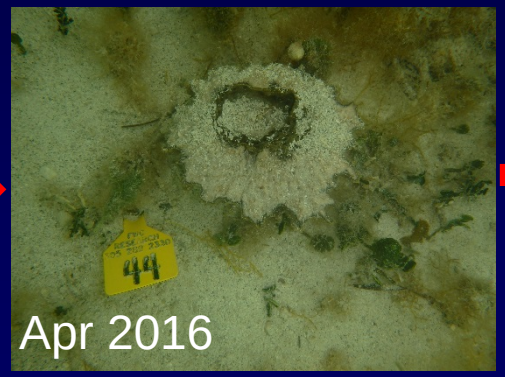

Loggerhead & Vase Sponge “Cuttings” on Limestone

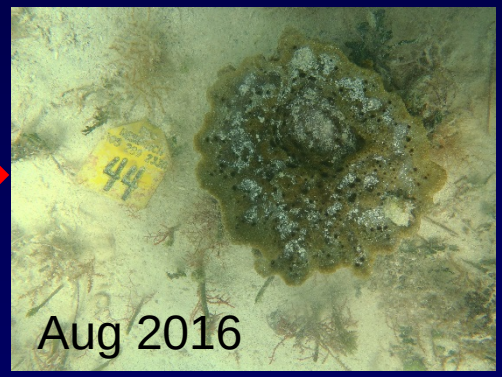

Loggerhead “Cuttings” on Block

Monitoring Donor Sponges

- Nearly all surviving as of August 2016







Nursery Growth & Survival

- Survival of Cuttings > 90%; May be Site-Related Differences
- Growth Evident

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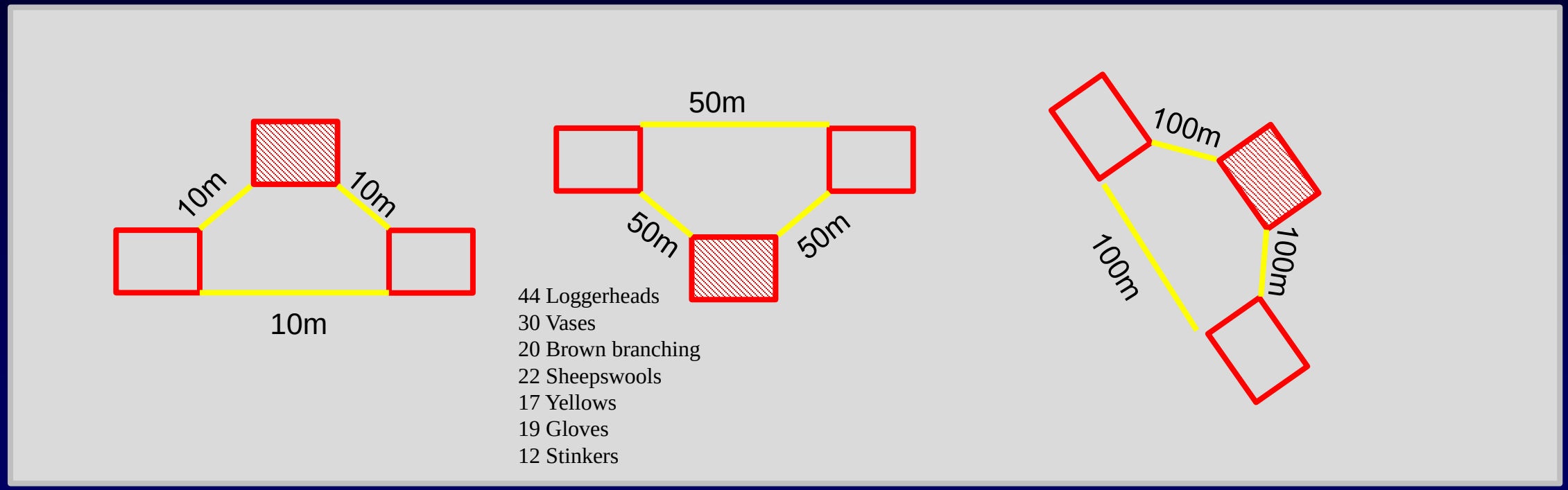
Sponge Recruitment Study

- **Established a series of “Triads**
- **Use existing ODU restoration sites as one leg of the ‘triad’**
- **Sites around Long Key, Lignumvitae Basin, Matecumbe Bight**



- **March – Combined sponge propagation effort**
  - **~ 3,000 sponges**

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Large-Scale Sponge Restoration Effort

- **Sponge Propagation Feb – June 2016**
- **More than 4,200 sponge cuttings**
- **Propagation will resume in fall of 2016**

Scaling-up Sponge Community Restoration
Stay Tuned…

Questions?

Bonefish & Tarpon Trust

Florida Keys Environmental Fund, Inc.

The Nature Conservancy

NOAA

Old Dominion University

Florida Fish and Wildlife Conservation Commission

Sea Grant Florida