Assessing coastal restoration for science and education: Meeting both objectives
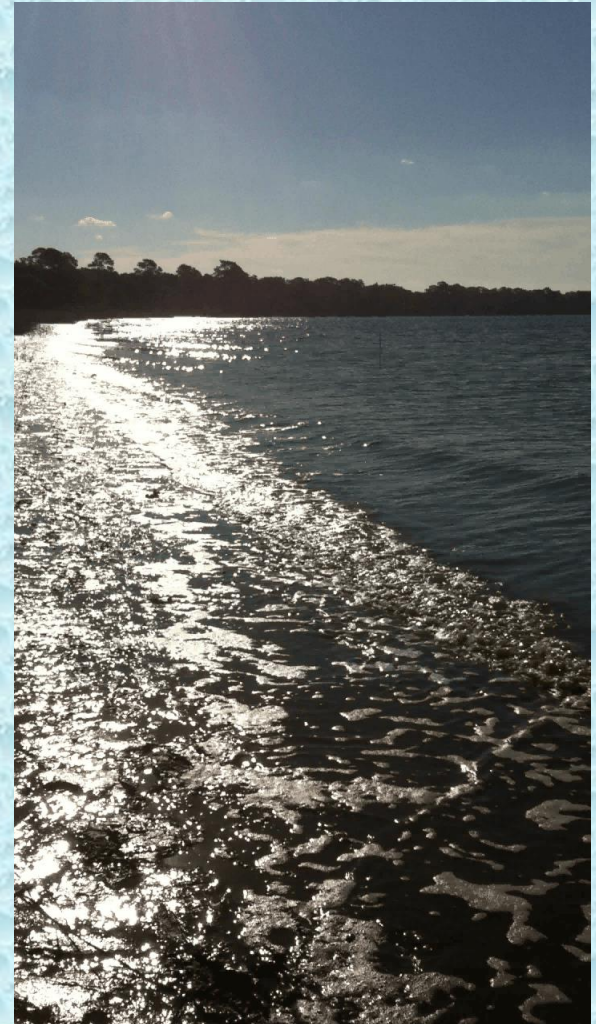
Dr. Kelly Smith

Coastal systems: stressors?

- **Large scale: Sea level rise, Subsidence**
- **Local scale: Storm waves, Dredging, Wake damage**

- **Impact: coastal shift/loss**

What is the role of restoration ecology?

- **Objectively assess impacted environments**
- **Identify appropriate reference and target systems**
- **Address best practices based on likelihood of success.**
- **Avoid value decisions – let policy makers focus on that! Science, not advocacy.**

Why is a restoration project a good system for learning?

- **Experiential or hands on**
- **Community based, moving students out of college environment**

- **Addresses system complexity and uncertainty**
- **Problem solving approach**

Student activities and outcomes

- **Student teams monitored biota and habitat, providing background data for upcoming restoration**

- **Later groups will assess success of project**

- **Developed & implemented monitoring protocols**

- **Evaluated restoration criteria**

- **Present results in public forum**

- **Attend the poster session to see results of student activities!**

Fish monitoring

- **Seine sampling**

- **Trapping**
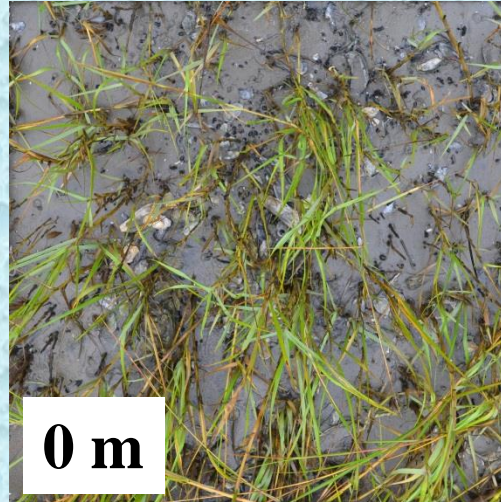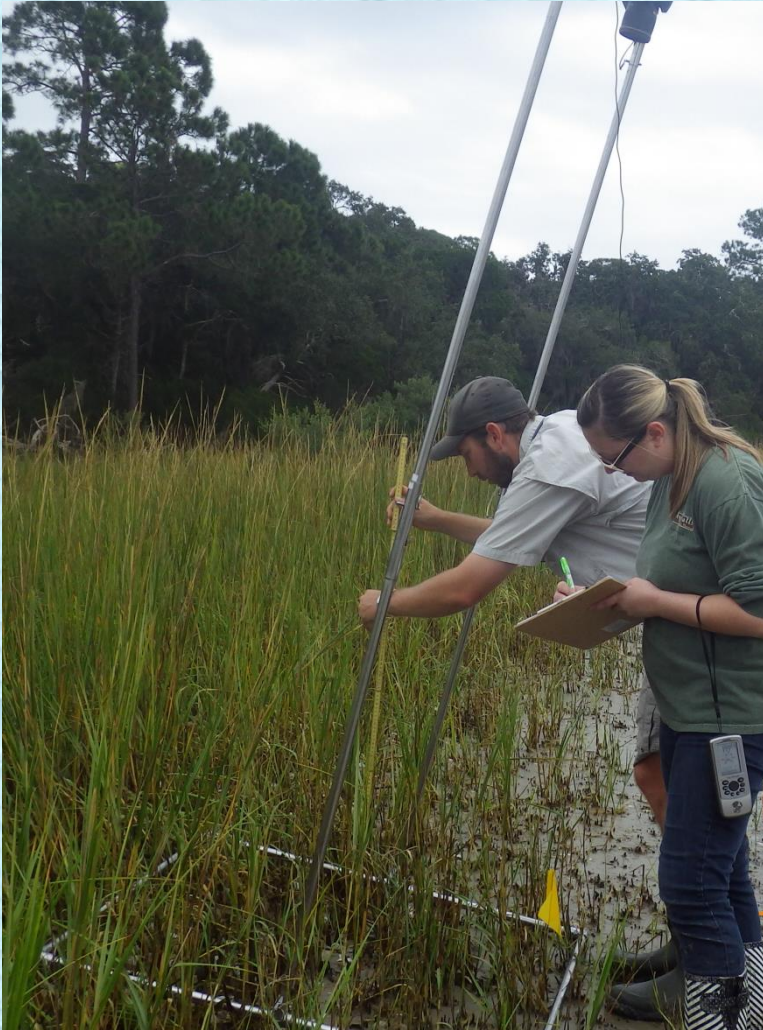
- **Benthic trays**

Benthic monitoring

Vegetation monitoring

Example: transect 4

0 m

12 m

Experimental Living Shoreline

From Delaware Estuary Living Shoreline Initiative (DELSI)

CROSS-SECTION
Living Shoreline:
Coir log and Oyster Reef Combined

Coir mat with *Spartina* seedlings

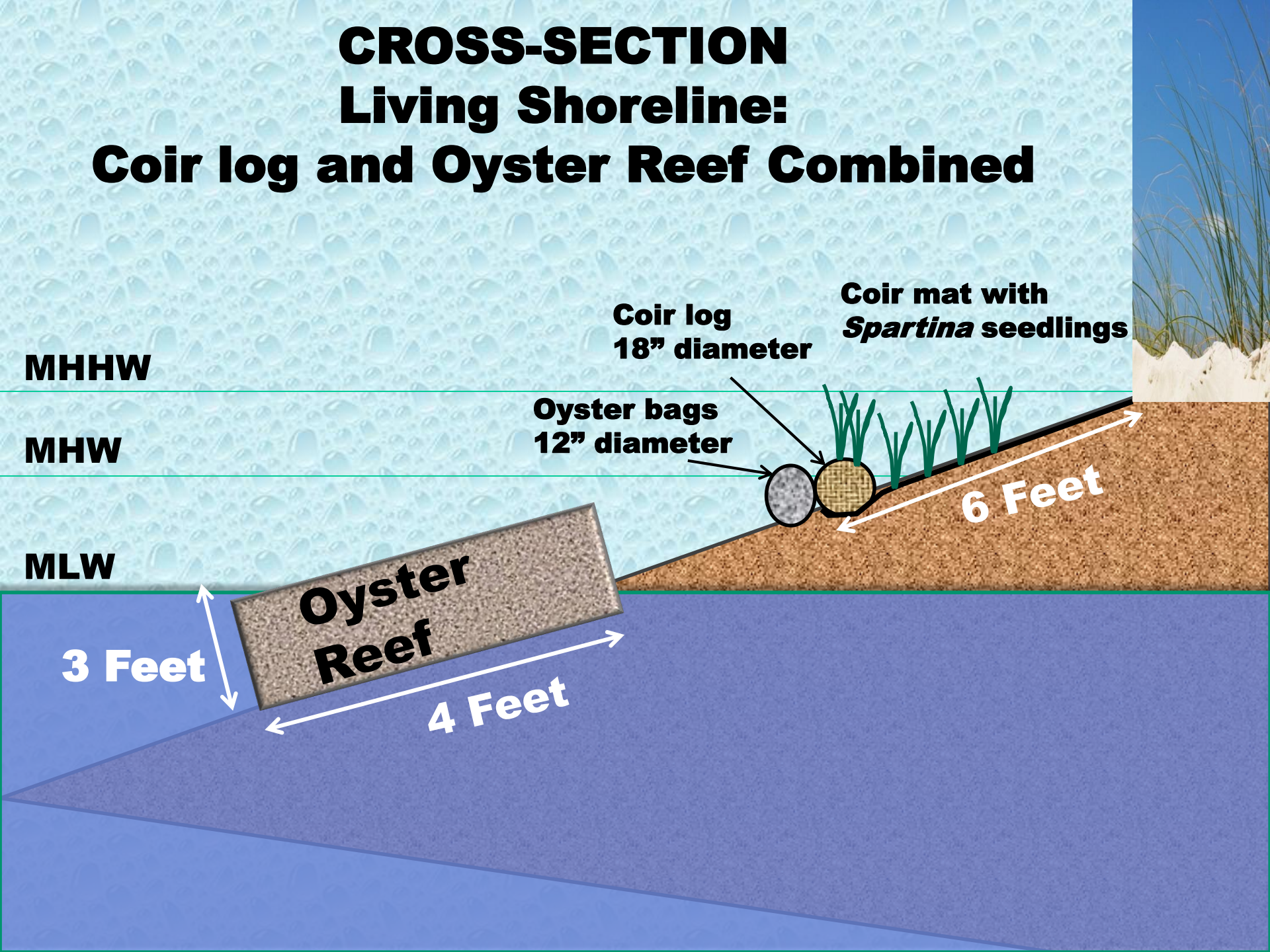Coir log
18" diameter

MHHW

Oyster bags
12" diameter

MHW

6 Feet

MLW

Oyster
Reef

3 Feet

4 Feet

Community Participation?

- **Volunteers needed!**
  - **Oyster collection & bagging**
  - **Preparing mats**
  - **Transporting materials to site**
  - **Installing reef structure**
  - **Plantings**

Maurice River, NJ

Gerhard 2013

October 2012

Future opportunities?

- Monitoring response until July 2015
- Additional restoration opportunities?
- Additional plantings?

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Thank you.

Questions?