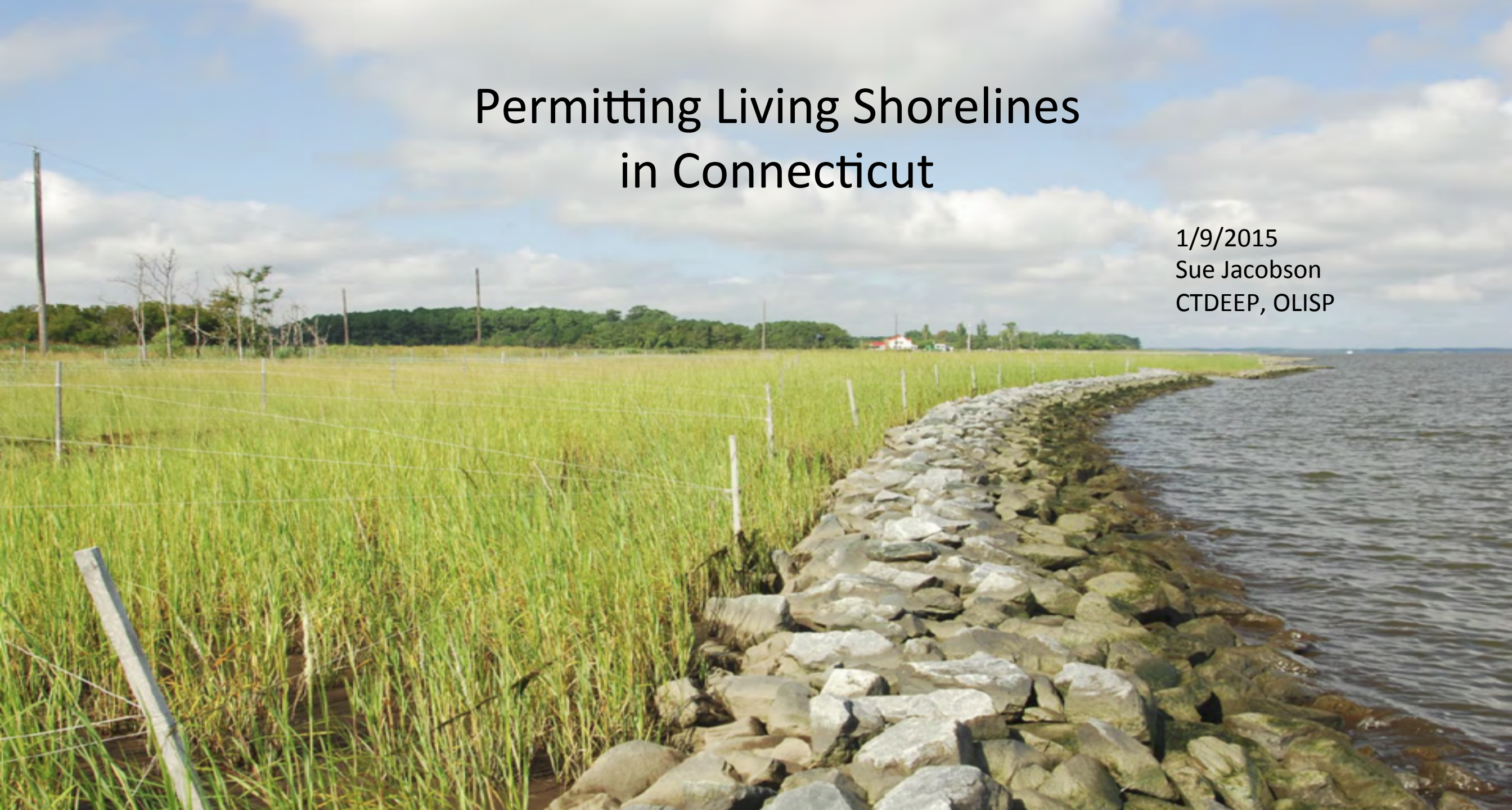


Permitting Living Shorelines in Connecticut

1/9/2015

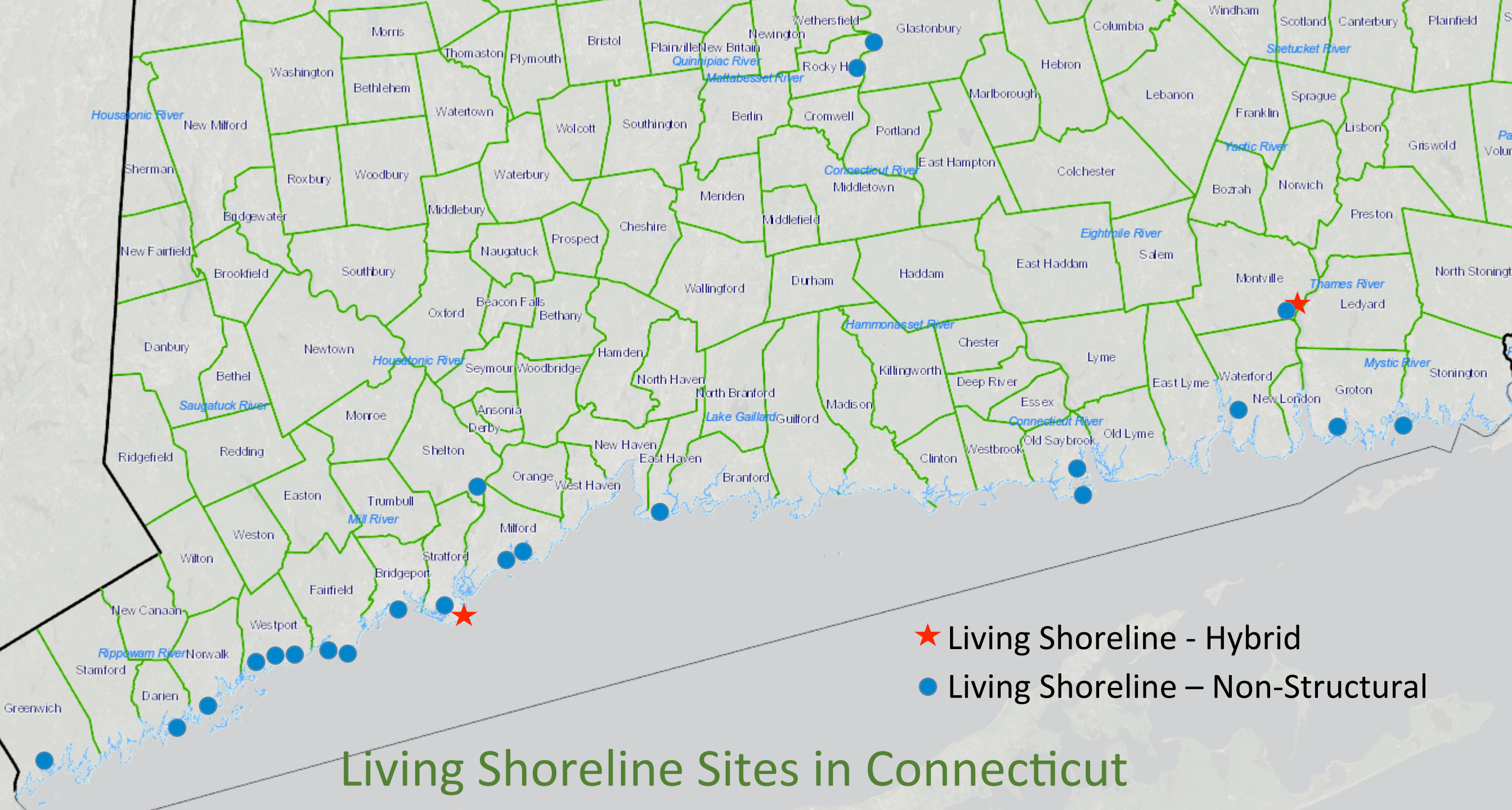
Sue Jacobson
CTDEEP, OLISP





CT Working Definition of Living Shoreline:

A shoreline erosion control management practice which also restores, enhances, maintains or creates natural coastal or riparian habitat, functions and processes. Coastal and riparian habitats include but are not limited to intertidal flats, tidal marsh, beach/dune systems, and bluffs. Living shorelines may include **structural features** that are combined with natural components **to attenuate wave energy and currents.**

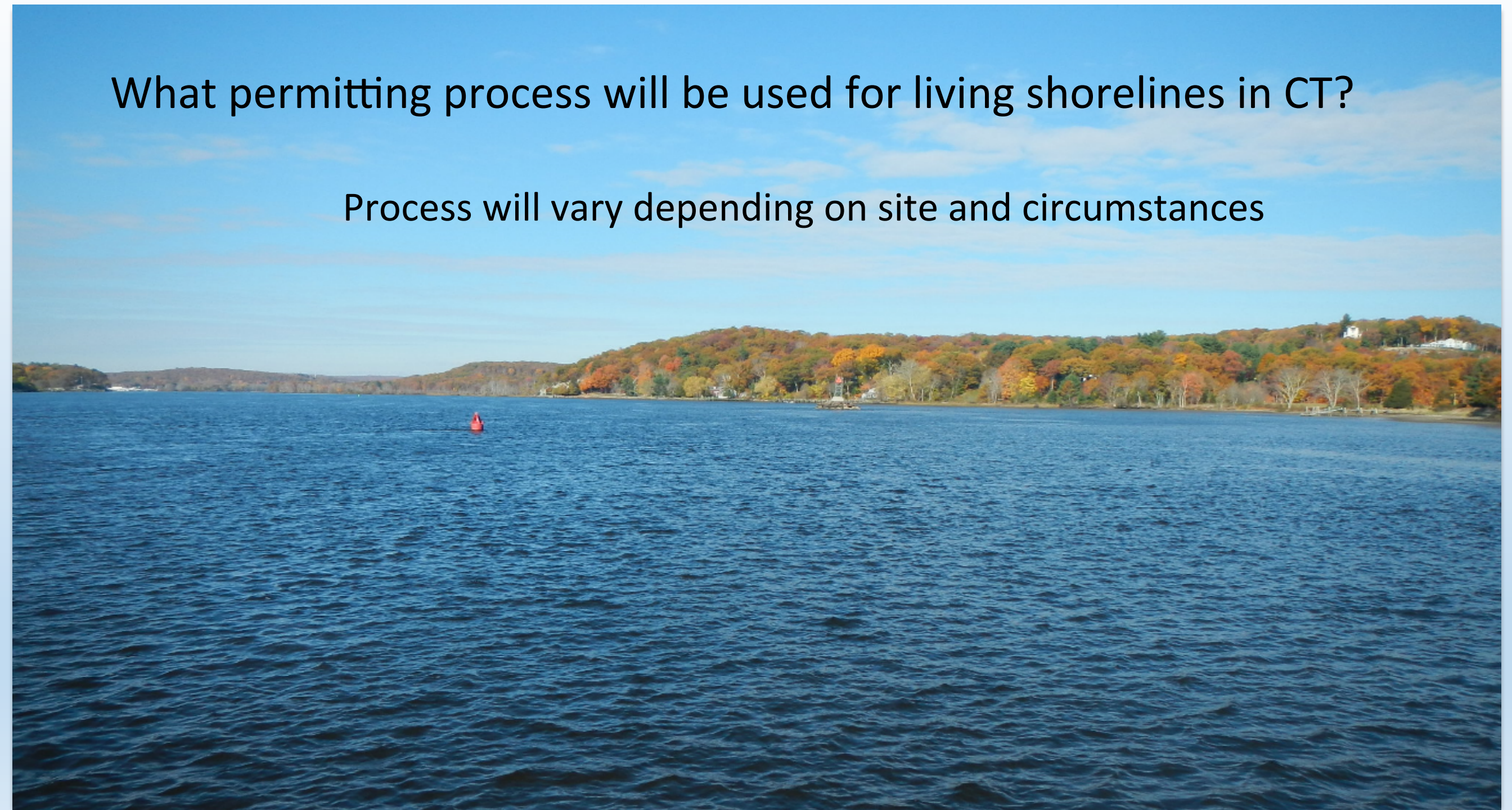


- ★ Living Shoreline - Hybrid
- Living Shoreline - Non-Structural

Living Shoreline Sites in Connecticut

What permitting process will be used for living shorelines in CT?

Process will vary depending on site and circumstances





Photos by John Hilts

Bridgeport
Wall removal
Vegetated slope
restored

Process:
Enforcement action





Compliments of

REMINGTON GUN CLUB

375-2526

Public Shooting except when Tournaments are held.

Operating Hours: TRAP & SKEET
End of April Wed., Thurs., 3:00 P.M. until dark
Thru September Sat. 10:00 A.M. - 3:00 P.M.
Sun. 12:00 Noon - 4:00 P.M.

Sept. thru April Sat. 10:00 A.M. - 3:00 P.M.
Sun. 12:00 Noon - 4:00 P.M.

Oldest combination trap and skeet facility in North America.





1995 prior to remediation



2005 post-remediation

Process:
COP



Stratford Point
Hybrid design
150' of an approximately 1000 linear foot shoreline

Photo by Mark Beekey
Sacred Heart University

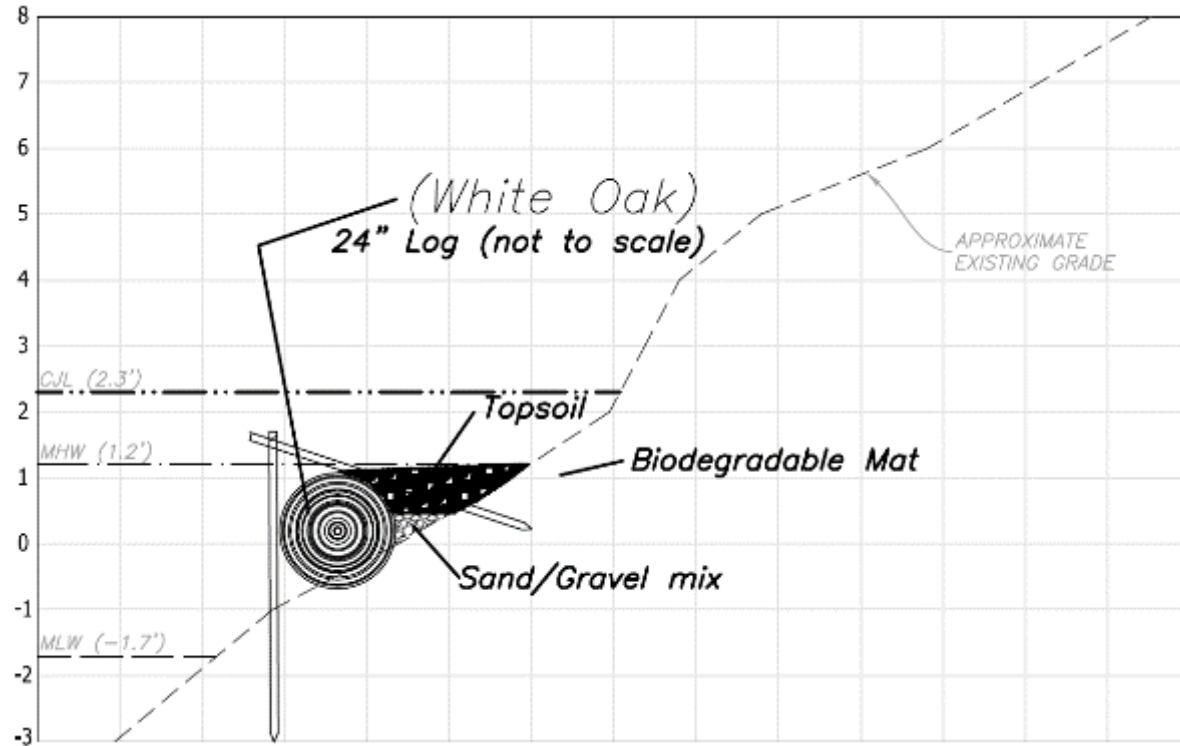




Process:
Enforcement action

Montville, Horton Cove
Fill removal
Eroding edge





Plan by David King

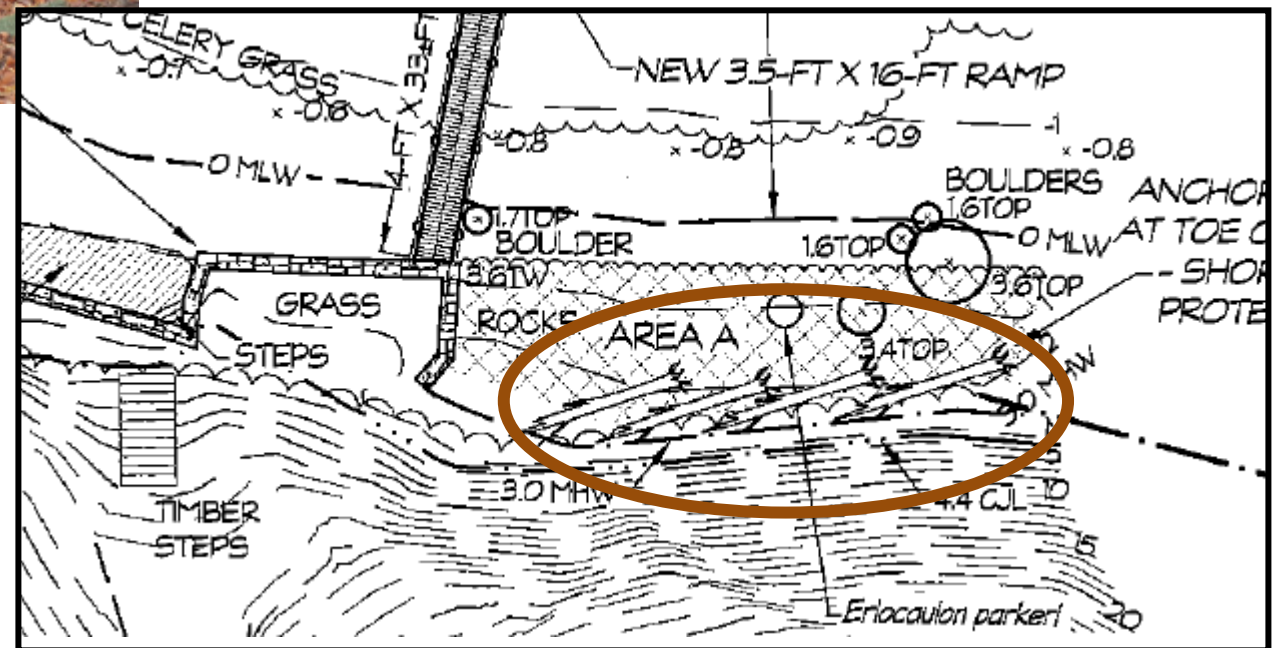


Photo by Brandon Morse



Eroding Bluff
 Lyme, Hamburg Cove
 New dock proposed

Process:
 SD&F



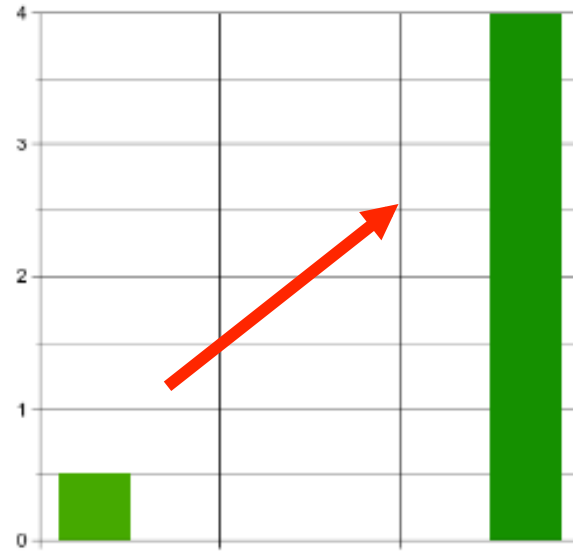
Plan by Keith Neilson

What studies will be required when an application is submitted?

Requirements will vary depending on site



Design studies that may be required:



Wind and wave analysis

Sediment transport analysis

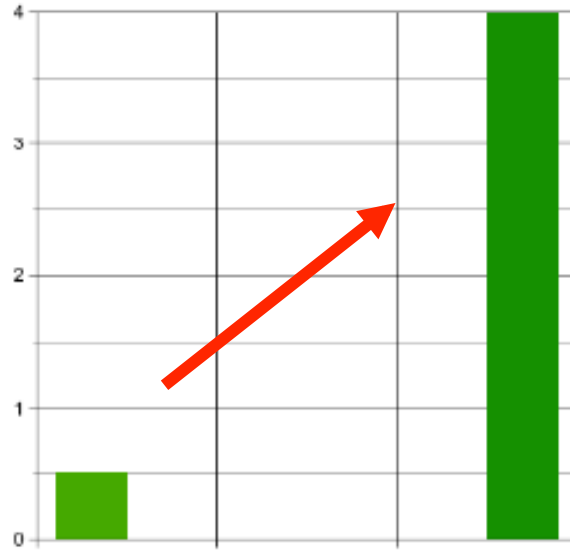
Vegetated
slope



Hybrid
structure

Living shoreline design complexity

Design studies
that may be
required:



Wind and wave analysis
Sediment transport analysis

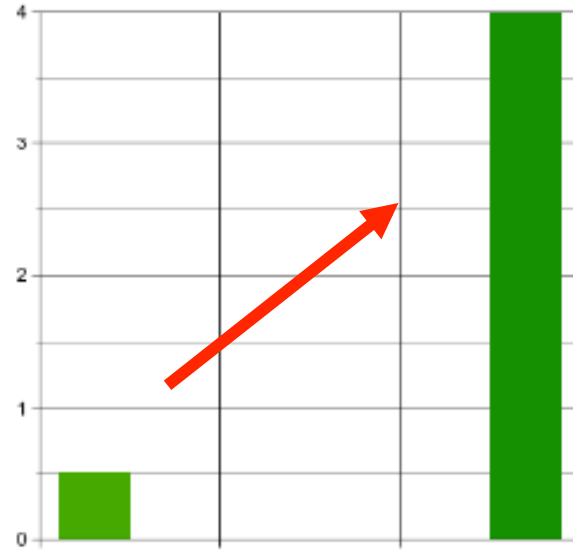
Large property
small LS project



Small property
Large LS project

% of shoreline
to be treated at site

Design studies
that may be
required:



Wind and wave analysis

Sediment transport analysis

Homogenous
shoreline




Varying exposures
and habitats

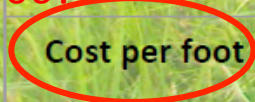
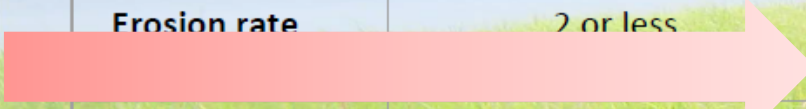
Shoreline complexity



We *may* be able to apply common sense?

Project Selection Criteria

| Energy Environment | <i>Low Energy</i> | <i>Medium Energy</i> | | <i>High Energy</i> |
|-----------------------------------|---|------------------------------------|-----------------|----------------------------|
| Shoreline Location | Creek or cove | Minor river | Major tributary | Main stem Bay |
| Water depth (ft) | -1.0 | -1.0 to -2.0 | -2.0 to -4.0 | -4.0 to -15.0 |
| Fetch (miles) | 0.5 | 1.0 to 1.5 | 2.0 or more | 2.0 or more |
| Erosion rate | 2 or less | 2 to 4 | 4 to 8 | 8 to 20 |
| Erosion Control Treatment Options | <i>Non-structural Projects</i> | <i>Hybrid Projects</i> | | <i>Structural Projects</i> |
| | Beach replenishment | Marsh fringe w/ groins | | Bulkheads |
| | Fringe marsh creation | Marsh fringe w/ sills | | Revetments |
| | Marshy islands | Marsh fringe w/ breakwaters | | Stone reinforcing |
| | Coir logs edging,  | Beach replenishment w/ breakwaters | | Groins & jetties |
| Cost per foot | \$50-100 | \$150-300 | \$350-500 | \$500-1,200 |



2006?

- Flood and erosion control structures for:
- infrastructural facility;
 - water-dependent use;
 - pre-1995 structures.

What conditions can you expect
as part of your authorization?



Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

26 Kim Street • Hartford, CT 06103-8122 www.ct.gov/dep Affirmative Action/Equal Opportunity Employer

PERMIT

Permit No: «APPLICATION_NUMBER»
Municipality: «PROJECTOWN»
Work Area: «WATERBODY» off property located at
 «PROJECTSTREET_ADDRESS»
Permittee: «APPLICANT_NAME»
 «APPSTREETADDRESS»
 «APPCITYSTATEZIP»

Pursuant to sections 22a-359 through 22a-363g and sections 22a-28 through 22a-35 of the Connecticut General Statutes ("CGS") and in accordance with section 401 of the Federal Clean Water Act, as amended, CGS section 22a-95 (within coastal boundary only) and the Connecticut Water Quality Standards, effective February 25, 2011, a permit is hereby granted by the Commissioner of Energy and Environmental Protection ("Commissioner") to «WORKSUMMARY» for «maine commercial use/maine industrial use/recreational boating access/flood and erosion control» as is more specifically described below in the SCOPE OF AUTHORIZATION off property identified as the "work area" above.

*****NOTICE TO PERMITTEES AND CONTRACTORS*****

UPON INITIATION OF ANY WORK AUTHORIZED HEREIN, THE PERMITTEE ACCEPTS AND AGREES TO COMPLY WITH ALL TERMS AND CONDITIONS OF THIS PERMIT. FAILURE TO CONFORM TO THE TERMS AND CONDITIONS OF THIS PERMIT MAY SUBJECT THE PERMITTEE AND ANY CONTRACTOR TO ENFORCEMENT ACTIONS, INCLUDING INJUNCTIONS AS PROVIDED BY LAW AND PENALTIES UP TO \$1000.00 PER DAY PURSUANT TO THE ADMINISTRATIVE CIVIL PENALTY POLICY DESCRIBED IN SECTIONS 22a-6b-1 THROUGH 22a-6b-15 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES.

SCOPE OF AUTHORIZATION

The Permittee is hereby authorized to conduct the following work as described in application «APPLICATION_NUMBER», including X sheets of plans dated XX, submitted by the Permittee to the Commissioner and attached hereto, as follows:

1.

- ❖ Navigation markers may be necessary
- ❖ Short-term and long-term monitoring
- ❖ Modify and maintain – flexibility



- ❖ For hybrid designs, removal if fails

What challenges do we face?

There will be failures



Need to manage expectations



Louisiana oyster reefs, such as the one pictured above, were severely damaged last spring following the BP oil spill in the Gulf of Mexico. (Source: www.creoleneworleans.com)

Sent: Thursday, June 05, 2014 11:16 AM
To: Zawoy, Kevin
Subject: Re: FW: living shorelines



Learning process for everyone!

Kevin,

I am disappointed that this type of dressing is being promoted by the DEEP. It seems to be a final blockade to allowing people who may live near the water access to the water. I can't imagine the discomfort of walking across those rocks. I can't imagine running a canoe ashore and climbing out onto the rocks. Our proposal is 40% open interlocking blocks capable of supporting vegetation. There are no sharp edges and it provides a reasonable surface in a shade covered area.

There are a bunch of rocks along the eroded shore as it is; it appears that all my client has to do throw down a few jute mats, and stick in few plants that won't grow.

Are there any people friendly choices?

Sent: Friday, August 29, 2014 4:37 PM
To: Zawoy, Kevin; Jacobson, Susan
Subject: Re:



Kevin,
I want to personally thank both you and Susan for your help. Your advice was well thought, succinct and practical. and I found out from my favorite forester that white oak doesn't float, (a five foot piece 24 inches in diameter can weigh 800 LBS).
Thanks again

QUESTIONS?

