Permitting Living Shorelines in Connecticut

1/9/2015
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CTDEEP, OLISP
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
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.
Process:
COP

Stratford Point
Hybrid design
150’ of an approximately 1000 linear foot shoreline
Montville, Horton Cove
Fill removal
Eroding edge

Process:
Enforcement action
Plan by David King

- (White Oak)
- 24" Log (not to scale)
- Topsoil
- Biodegradable Mat
- Sand/Gravel mix

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

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

<table>
<thead>
<tr>
<th>Energy Environment</th>
<th>Low Energy</th>
<th>Medium Energy</th>
<th>High Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoreline Location</td>
<td>Creek or cove</td>
<td>Minor river</td>
<td>Major tributary</td>
</tr>
<tr>
<td>Water depth (ft)</td>
<td>-1.0</td>
<td>-1.0 to -2.0</td>
<td>-2.0 to -4.0</td>
</tr>
<tr>
<td>Fetch (miles)</td>
<td>0.5</td>
<td>1.0 to 1.5</td>
<td>2.0 or more</td>
</tr>
<tr>
<td>Erosion rate</td>
<td>2 or less</td>
<td>2 to 4</td>
<td>8 to 20</td>
</tr>
</tbody>
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**Erosion Control Treatment Options**

- **Non-structural Projects**
  - Beach replenishment
  - Fringe marsh creation
  - Marshy islands
  - Coir logs edging

- **Hybrid Projects**
  - Marsh fringe w/ groins
  - Marsh fringe w/ sills
  - Marsh fringe w/ breakwaters
  - Beach replenishment w/ breakwaters

- **Structural Projects**
  - Bulkheads
  - Revetments
  - Stone reinforcing
  - Groins & jetties

**Cost per foot**

- Beach replenishment: $50-100
- Marsh fringe w/ groins: $150-300
- Marsh fringe w/ sills: $350-500
- Marsh fringe w/ breakwaters: $500-1,200

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Flood and erosion control structures for:
- infrastructural facility;
- water-dependent use;
- pre-1995 structures.
What conditions can you expect as part of your authorization?
- 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)
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?