

Coastal Bluff Repair Santa Cruz, California



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Pleasure Point



AUG



How Not to Repair Coastal Bluff



<---failed concrete (gunnite)
protective curtain

Curtain was blown out as a result
of unrelieved pore-water pressure
build up in bluff behind curtain



Eroded Bluff (before repair)



<---looking South towards
Monterey Bay

looking North along coast--->



Bluff Repair Sequence



Preparing to install (drape)
Enka mat over bluff face

Enka Mat anchored 1' oc



Anchoring (“nailing”) Enka mat to bluff face



<---Enka mat anchored to bluff face







While willow stakes were cut Alex takes a nap! Notice willow, 35 yrs old, on neighbors cliff



Installing Willow Stakes



Inserting (tamping)--->
live cuttings thru
mat into bluff face



Bluff Repair Sequence (cont)



- Flexterra @ 4000# /ac
- Native Grass seeds (Maritime)
- Jumpstart (Profile) humic acid
- BioPrime (Profile) mychorrizae,

Applying (spraying) hydroseed solution to bluff face ----->



Green Armor System



Spraying hydro mulch--->
over (& thru) Enka mat





7" rain in the first week after construction



1st Month





After 1 year



November 2009





After 2 year

East Cliff Drive up coast prepares for \$\$million fix, soil nails






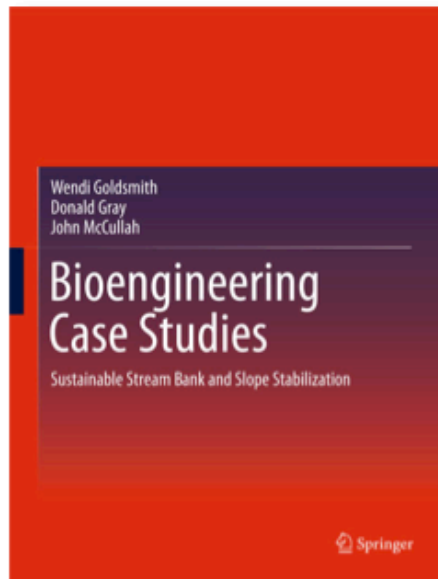
Jack O'Neills House







More at Dirttime.tv archive
or in **Bioengineering Case Studies**

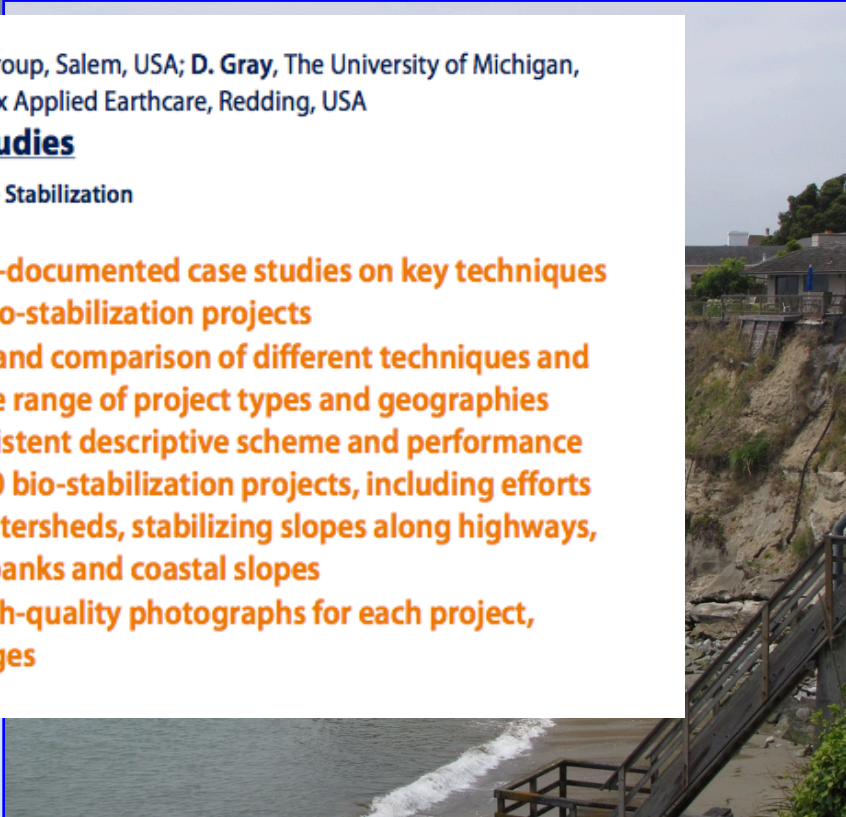


2014, X, 202 p. 241 illus., 85 illus. in color.

W. Goldsmith, Bioengineering Group, Salem, USA; D. Gray, The University of Michigan, Ann Arbor, USA; J. McCullah, Salix Applied Earthcare, Redding, USA

Bioengineering Case Studies

Sustainable Stream Bank and Slope Stabilization

- ▶ Presents a range of well-documented case studies on key techniques and best practices for bio-stabilization projects
 - ▶ Emphasizes evaluation and comparison of different techniques and challenges across a wide range of project types and geographies
 - ▶ Adopts a clear and consistent descriptive scheme and performance evaluation rubrics for 30 bio-stabilization projects, including efforts protecting/repairing watersheds, stabilizing slopes along highways, and protecting stream banks and coastal slopes
 - ▶ Features four to five high-quality photographs for each project, totaling nearly 150 images
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<https://dirttime.tv/2014-8-9-project-opal-cliffs-chapter-from-bioengineering-case-studies-html/>