

Living shorelines: how much coastal engineering do you need?

Authors: Bret M. Webb^{*1}, Scott L. Douglass¹, Kari Servold¹

SCI-044, SCI-077

A living shoreline may best be described as a natural approach to bank and shoreline stabilization that uses plants, sand, and some rock to protect the shoreline while maintaining valuable habitat. Living shorelines often incorporate structural and organic materials to facilitate natural shoreline processes while providing shore- and marine-based habitat; stone, sand fill, reefs, and vegetation are commonly used to achieve these goals. While the terminology is relatively new, coastal engineers have for many years used the living shoreline approach, particularly for smaller projects along sheltered shorelines. In recent years, however, the living shoreline concept has focused more on coastal ecology than it has on addressing the local wave, tide, and sand transport environment—the physical coastal processes—and the requisite coastal engineering design needed to ensure continuity of the physical processes and ecological benefits. Indeed this trend is likely a result of the growing popularity of living shorelines and the lack of widely available coastal engineering guidance on their successful design and implementation. Furthermore, the professional practice and research communities of coastal ecology and coastal engineering have intersected on relatively few occasions. If successful alternatives to building bulkheads, revetments, and seawalls will ever flourish, these two areas of practice and research must make concerted efforts to collaborate on maximizing ecological and engineering benefits on a site-specific basis. This presentation will highlight examples of living shorelines projects that have succeeded, as well as some that have not, in an effort to answer the question posed in the abstract title: how much coastal engineering do you need? Progress on the development of a living shorelines decision support toolkit, which provides specific coastal engineering guidance for their design, will be summarized.

*Corresponding author email: bwebb@southalabama.edu

¹University of South Alabama, Dept. Civil Engineering, 150 Jaguar Drive SH 3142, Mobile, AL 36688-0002 USA.
Phone: (251) 460-7507; Fax: (251) 461-1400.