

SHORELINE MANAGEMENT TOOLBOX

Within the next 60 years, erosion will claim up to 25% of all homes within 500 feet of ocean or Great Lakes shorelines.

Shoreline erosion is a natural process. However, sea level rise and poorly planned shoreline development can accelerate natural erosion rates. Now that more than 53% of the nation's population lives in coastal counties, shoreline erosion is a serious problem for coastal managers.

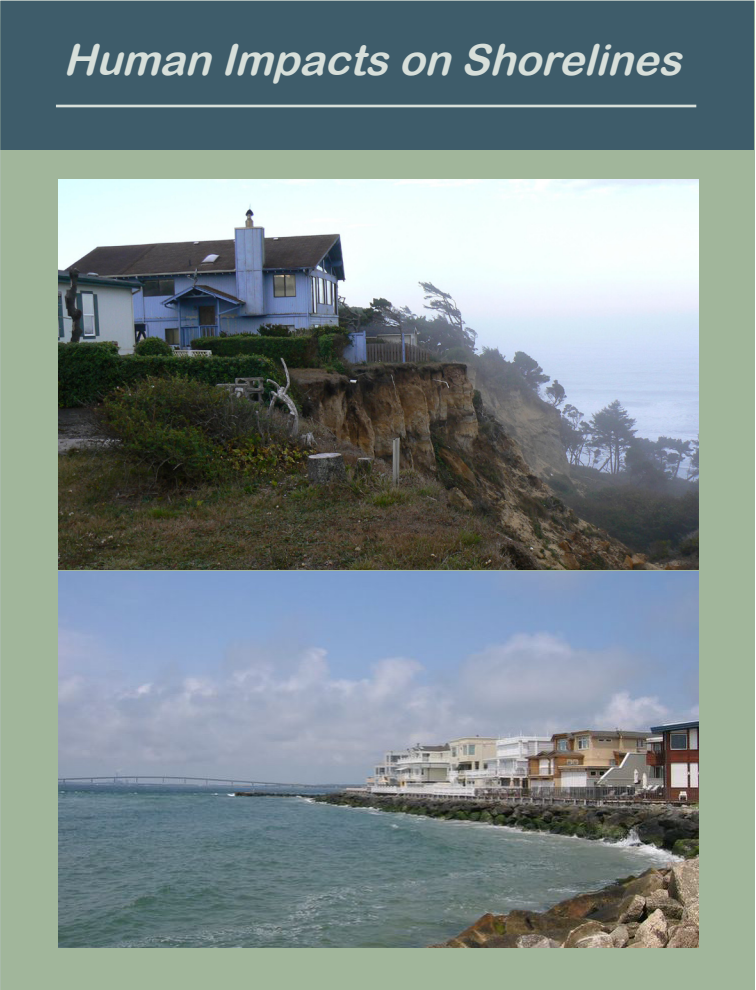
Hard stabilization techniques (sea walls, rip rap, jetties) may be appropriate and effective solutions under some circumstances, but they are not always the best option.

Hardened erosion control structures (1) can be very costly, (2) interrupt natural shoreline processes and sand movement leading to increased erosion, and (3) destroy valuable shoreline habitats such as wetlands and intertidal areas.

Shoreline management techniques such as soft or non-structural (vegetative plantings), hybrid (replanting coupled with rock sills), and planning and policy approaches (set-backs, managed retreat) may offer "alternative" solutions.

THE TOOLBOX

NOAA's Office of Ocean & Coastal Resource Management created the Shoreline Management Technical Assistance Toolbox (<http://coastalmanagement.noaa.gov/shoreline.html>) as an online guide for state coastal managers. It provides centralized access to information, resources, and tools to address shoreline erosion and management, focusing on alternatives to traditional shoreline hardening. The website contains four main sections: *Planning, Policy, and Regulatory Tools*; *Economics of Shoreline Management*; *Soft/Alternative Stabilization Methods*; and *Resources*.



Soft/Non-Structural Stabilization



Hybrid Stabilization



Planning & Policy Techniques

SHORELINE MANAGEMENT TECHNICAL ASSISTANCE TOOLBOX

The **Main** page provides an overview of shoreline erosion and the need to explore alternatives to shoreline armoring.

The screenshot shows the NOAA Coastal Management website. The header includes the NOAA logo and the text "U.S. DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration". Below the header is a banner with the text "OCEAN & COASTAL RESOURCE MANAGEMENT" and "site map" and "contacts" links. The main content area is titled "Shoreline Management: Alternatives to Hardening the Shore". The left sidebar contains a navigation menu with items: Home, About Us, Our Programs, Federal Consistency, Coastal Issues, Initiatives, Measuring Success, and Shoreline Management. The main text discusses shoreline erosion, mentioning a 2000 Heinz Center report and a survey by the Coastal States Organization. It includes an image of a bluff with a lighthouse and a house. A "The Tool Box" section on the right lists: Planning, Policy and Regulatory Tools; Soft/Alternative Stabilization Methods; Economics of Shoreline Management; and Resources. Callout boxes provide detailed descriptions of these sections.

The Alternative Shoreline Stabilization page provides a brief introduction to “soft” and “hybrid” shoreline stabilization methods. The page links to the NOAA Restoration Center’s “Living Shorelines” Clearinghouse for more detailed information.

The Economics section provides a brief overview of the “dollars and cents” of shoreline management. This section also links to additional in-depth pages to help you understand basic economic principles and primary types of economic analyses related to shoreline management.

The Resources page contains annotated bibliographies of papers, reports, web sites, and other shoreline management resources that promote alternatives to armoring.

The Planning, Policy, and Regulatory section provides examples of 18 planning, policy, or regulatory related tools. Each example contains a description of the tool along with its benefits and drawbacks. Case studies illustrate how state and local governments are implementing the tools.

[HTTP://COASTALMANAGEMENT.NOAA.GOV/SHORELINE.HTML](http://coastalmanagement.noaa.gov/shoreline.html)