

Armoring vs. Living Shorelines: The Regulatory Dilemma in the Gulf of Mexico



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Overview of Issues



- **Shoreline Impacts**
 - Sea Level Rise
 - ✦ Subsidence
 - ✦ Coastal Erosion
- **Different shoreline types**
 - Wetlands
 - Beaches
- **2 Strategies for Dealing with Impacts**
 - Defend
 - Retreat

Defend or Retreat



Defend

- **Armoring**
 - Sea walls, bulkheads
- **Beach renourishment**
 - Elevating the land surface
- **Living Shorelines**
 - Alternative to armoring

Retreat

- **Rolling Easements**
 - Easement moves with vegetation line
- **Setbacks**
 - Prohibits construction seaward of a setback line

Armoring



- Use of seawall, bulkhead, or other hard structure to prevent erosion associated with sea level rise
- Prevents migration of shoreline past a certain point
- Predominant erosion control in bay areas
- Generally easy to permit in most Gulf states



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Disadvantages of Armoring



- Increased erosion to adjacent properties
- Reflect wave energy
- Loss of inter-tidal habitat
- Loss of sandy beach
- Decrease amount of organic matter needed for maintenance of wetlands
- Vertical erosion in front of seawall

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Disadvantages of Armoring



- **Impacts to Property Owner**
 - Costly
 - Require repair after storm events
 - Increased erosion in front of sea wall deepens the water line at the shore interface
 - ✦ For instance eliminating owner's sandy beach over time
 - Increased erosion to adjacent property owners

Alternatives



- **Retreat Mechanisms**
 - Rolling Easements
 - Setbacks

- **Defend Mechanisms**
 - Living Shorelines
 - Beach Renourishment

Living Shorelines



- A living shoreline uses living plant material, oyster shells, earthen material or a combination of natural structures with riprap or offshore breakwaters to protect property from erosion.
- Types:
 - Vegetative cover – sea grasses, submerged aquatic cover
 - Non-structural stabilization – coir logs, organic matting
 - Shoreline revetment – oyster shell, coarse limestone
 - Offshore breakwaters – wave attenuation devices

Living Shorelines



Living Shoreline using
oyster shells and vegetation



Living Shoreline using coir log and
vegetative plantings

NOAA Restoration Center

Advantages of Living Shorelines



- **Maintain natural coastal processes**
- **Preserve or create habitat**
- **Preserve access for aquatic and terrestrial organisms**
- **Maintains land to water access for property owners**
- **Improve water quality**
- **Economical**

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Legal Challenges



TAKINGS

THE PUBLIC TRUST DOCTRINE

Armoring & Takings



- **May a State ban a waterfront property owner from constructing permanent armoring along the shoreline without incurring an unconstitutional taking of a common law property right?**

Armoring & Takings



- **North Carolina**
 - Banned armoring in areas of environmental concern
 - Challenged in *Shell Island Homeowners Ass'n v. Tomlinson*
 - No takings claim for oceanfront property owners
 - Later banned construction of erosion control structures on the ocean shoreline
 - Armoring of sound shorelines allowed where devoid of vegetation and adjacent landowners do not object, subject to specific construction requirements.

The Public Trust Doctrine



- Principle of common law
- Water as a public resource
- Submerged lands held in trust for the public by the State
 - Extends to lands subject to tidal ebb & flow
- Gives states oversight of any structure placed on water bottoms and leasing authority of state water bottoms

Living Shorelines & Public Trust



- **Living Shorelines impact state owned submerged lands**
 - Offshore structures and plantings generally occur below the mean high tide line on state owned submerged lands
- **Living Shorelines can result in accretion of the upland landowners property**
 - Simultaneously reduces the area of submerged lands held in trust for the public by the state

Regulatory Impacts



- **Takings**
 - Regulators fear that denying seawall permit may lead to regulatory takings challenge
- **Public Trust**
 - State land officials worry that landowners may use living shorelines to “grow” their property line
- **Overall Impact**
 - Increases likelihood of permit to armor
 - Reduces likelihood of permitting living shorelines

Where do we go from here?



- **Lessons learned from NC**
 - Is banning ocean front armoring the solution?
 - What about bays and estuaries?
- **Approaches of Gulf states**
 - Florida favors LSLs
 - MS and AL favor but face more challenges
 - LA – more wetland areas may benefit from LSLs
 - TX – may be useful where rolling easements do not apply
- **Challenges -**