Why promote living shorelines?

- Natural shorelines reduce coastal erosion and property loss
- Trap sediments, increase soil available for vegetation
- Reduce velocity of stormwater runoff
- Reduce impacts of flood waters during storm events
- Maintain intertidal habitat and animal dynamics
- Maintain water quality
- Increase habitat for juvenile fish, invertebrates, birds, and wildlife.

Impacts to natural shorelines / causes of erosion

**Natural processes:**
- Wind
- Storms
- Waves, currents, tides
- Sea level rise

**Human activities:**
- Dredge and fill operations
- Dam construction
- Sediment reduction
- Seawalls, bulkheads, and revetments
- Wetland drainage
- Boat traffic

Traditional responses to shoreline protection

**Armoring or Hardening = fixed structures**

Bulkheads and Seawalls

- Vertical: Primarily built to retain soil, Minimal protection from waves
- Vertical, smooth: Primarily built to reflect wave energy, Retains soil
Revetments
- Sloped
- Rougher, less reflective surface
- Often boulders or graded rip-rap
- Also concrete mats, timber, gabions

What is a living shoreline?
Living Shorelines use plants and other natural materials to prevent shoreline erosion while promoting and preserving habitat.

Soft / non-structural
- Natural Vegetation
- Biodegradable materials

Hybrid
Native vegetation with low-profile breakwaters of rock, rubble, oyster/shell, or wood structures

Typical hybrid treatments in a living shoreline
- Upland buffer
- Tidal marsh
- Submerged aquatic vegetation
- Oyster reef

Maintain or enhance a natural shoreline.
Considerations:
- Fetch
- What type of habitat is adjacent to the site?
- Slope

Others: erosion rate, elevation, bathymetry, prevailing wind and wave direction, vegetation already there or not there, soil type, shore orientation, shape of the shore, amount of sunlight, amount of boat wakes, permits. Working along the shore may involve sovereign submerged lands

Challenges
- Lack of understanding of Living Shorelines
- Norm to use seawalls
- Lack of training for regulators
- Large projects that require engineering
- Permitting process
- Switching from red tape to green tape in permitting process

Questions?