Protecting Shoreline: Living Shorelines Projects

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Introduction

- MD's shoreline- approx. 7,532 miles (Maryland Geological Survey).
- Significant problem facing landowners- SHORE EROSION, which is a natural process.
- With the current focus in hurricanes, flood, and other natural disasters, the need to protect people, land and natural resources- great importance.
- Conventional practices- bulkheads, rip raps.

Rip raps

Bulkheads

Living Shorelines (LS)

- A popular approach to erosion control.
- Uses strategically placed plants, stone and sand to deflect wave action, conserve soil and simultaneously provide critical shoreline habitat.
- Creating or preserving WETLANDS.
- LS stand up to wave energy better than solid bulkheads or rip raps.
- Minimal disruption of normal coastal processes- sediment movement along shoreline and protection and restoration of wetlands.

Living Shorelines (LS)

- Great relevance in MD and VA
- Miles and miles of shorelines are hardened each year
- Hardened shorelines- increases the vulnerability to storm damage and loss of valuable habitat for fish, crabs and waterfowl.

Common Types of LS Projects

- Marsh edging
- Groins
- Stone sills
- Breakwaters
- Biologs

Advantages

- Hardened shorelines- lower abundance of bottom-dwelling organisms offshore and lower numbers of juvenile fish and crabs.
- Abundance and diversity of aquatic species- higher in habitats adjacent to natural marsh.
- Density of crabs- significantly higher in natural marsh than in bulkhead habitats.
- Helps to maintain a link between aquatic and upland habitats.

Advantages

- Lower construction costs.
- Maintain natural shoreline dynamics and sand movement.
- Reduce wave energy.
- Absorb storm surge and flood waters.
- Filter nutrients and other pollutants from the water.

Drawbacks

- Not effective in all situations, especially in high energy environments.
- Lack of knowledgeable marine contractors.
- Lack of detailed science/literature.

Queen Anne's and Kent: RC&D Projects

(Eastern Shore Resource Conservation & Development, Council)

Economics of the Projects

County	Number of RC&D Projects	Total project cost ($)	Average Cost Per Project ($)
Kent	28	874,502	31,232.20
Queen Anne	58	2,040,398	35,179.28

Merits of the Shoreline Erosion Control Projects in MD

County	Total Project Length (ft)	Sediment saved (tons/yr)	Wetland created (sq. ft)
Kent	11,714	3,863.27	224,566
Queen Anne	34,791	17,941.32	711,981

Conclusions

- Healthy marsh grasses = stronger protection from erosion.

- Keys to success of LS projects:
  - Good design
  - Knowledgeable contractor
  - Awareness
    - LS- need maintenance; not “zero maintenance”.
  - Property owners’ involvement.

Thank You !!!!