Going Green
Living Shorelines Maine
Using a Instability Rating and Decision Tree
For Living Shoreline & Stabilization Alternatives
Shoreline Management Assessment (SMA)

- Reconnaissance Level Assessment (RLA)
- Prediction Level Assessment (PLA)
- Design Level Assessment (DLA)

Developed by Troy Barry
Reconnaissance Level Assessment (RLA)

Compile Existing Data

Review Landscape History
- Historical Aerials, USGS Quads, Post Land Use, and landscape modifications

Identify activities potentially affecting sediment supply and bluff stability
- Current land use, structures, vegetation, upland hydrology

Identify Specific Process Relationships
- Instability Assessment Rating
Instability Assessment Rating (Step 2 of RLA)

- 12 Parameters
- Good (1): 1-15
- Fair (2): 16-27
- Poor (3): 28-36

Refer to your handout
Prediction Level Assessment (PLA)

Develop Prediction Level Assessment (PLA)
Use GIS based suitability analysis to create an initial desktop ranking, to be applied in greater detail to focus areas as follows:

- **Inventory Mass Erosion**
  - Surface & Sediment Erosion
  - Vegetation

- **Inventory Surface Erosion**
  - 2D Flow Modeling
  - Rainfall, Habitat, etc.

- **Inventory Hillside Processes**
  - Rapid Assessment

- **Assess Hydrologic Processes**
  - HydroCAD
  - Surface & Groundwater
  - Hydrologic Soil Properties
  - Sediment Stability
    - Soil Assessment
      - Soil Permeability
      - Soil Organic Class
      - Available Water Capacity (AWC)

- **Analyze Shoreline Processes**
  - Analysis, etc.

- **Identify/Inventory Shoreline Changes**
  - Erosion rates

- **Inventory Direct Impacts to Shoreline and Bluff Form**
  - Sediment transport

**RLA/PLA Verification**
Place, Process, and Sources
Mackworth Island Site #4
(RLA)
Design Level Assessment (DLA)

Recommendations for Shoreline Stability

Nearshore/Intertidal Zone
- Select Areas, Bluffs for further Assessment
- Develop Bluff Management Plan(s)

Upland/Riparian Zone
- Eliminate Area, where overwash, and/or Buff areas that do not contribute to the embankment

Concepts
- Rootwad
- Breakwater
- Log Roll
- Vegetation Plan
- Mud Flat
- Salt Marsh

Concepts
- Raingarden
- Infiltration
- Rainfall Diversion
- Disconnect Stormwater infrastructure
- Reduce Impervious Cover
- Vegetation Plan
- Reduce runoff velocity with cascade step pool design
Living Shoreline Concepts

• Coir Roll & Live Staking
• Rootwads & Woody Planting
• Vegetation Dissipation
• Oyster Shell Bags
Conceptual DLA on Mackworth Island

Mackworth Island, Falmouth, ME
Site 4 Topography (2006 LiDAR)
Conceptual DLA on Mackworth Island

Site 4 Topography

Elevation (feet; NAVD88) vs. Distance (feet)

HAT: 6.7°
Conceptual DLA on Mackworth Island