Shoreline Characterization and Change Analyses

South Coastal Region

Regional Coastal Erosion Commission Workshop
New Bedford - May 21, 2014

Shoreline Characterization

- Beach
- Coastal Bank
- Mounted Open Space
- Natural Upland
- Non-Residential Developed
- Residential

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Community.

- Classes were identified for every ~50 meters of assessed shoreline and summarized by percentage of total assessed shoreline for each community.

- Data sources include the 2011 USGS Wetlands map data, Land Use data, and Coastal Structures Inventory data, MassGIS’s 2005 Land Use data. More than 50 shore segments generally occur along the shoreline.

- Data were further processed to generate class summaries and a coastal landform description.

- Natural Upland is comprised of forest and brushland/scrub/scrubland/forested land cover classes only.

- Classes were identified for every ~50 meters of assessed shoreline and summarized by percentage of total assessed shoreline for each community.

- The project uses a remote approach to identifying classes along the shoreline. This approach offers an effective mechanism for any given 180-series of classes. It provides a realistic history of changes at a finer scale than other remote sensing (RS) techniques within a specified shoreline buffer. Shoreline segments occur along the shore in which features occur moving landward, and their rate at which they occur along the shoreline.

Methods

- Shoreline Change Project transects generally occur every ~50 meters along exposed shoreline (Fig. 3). Shoreline segments begin and end with shoreline edges between transects (Fig. 6). Attributes for each shoreline segment between transects are included. Data for hard- and non-hardened structures, wetlands and buffers, and other land use/land cover features were spatially joined to transects, then to their respective shoreline segments.

- Data were further processed to generate class summaries and a coastal landform description.

Shoreline Change

- Short-term erosion and accretion trends (1970-2006) per community in the South Coast region.

- This plot denotes dominant shoreline movement based on the number of shoreline change transects in each town.

- Long-term erosion and accretion trends (1844-2006) per community in the South Coast region.

- This plot denotes dominant shoreline movement based on the number of shoreline change transects in each town.