



Coastal Shoreline Change

Resource Brief

Importance

Land loss or gain at the marine edge has important ecological and jurisdictional implications. The SWAN coastal shoreline is dynamic and constantly changing due to coastal erosion and accretion from natural events, such as storm-driven waves, high tides, nearshore currents, rainfall and runoff, landslides, and earthquakes. Changes in the position of the shoreline affect the composition, relative abundance, and distribution of coastal habitats.



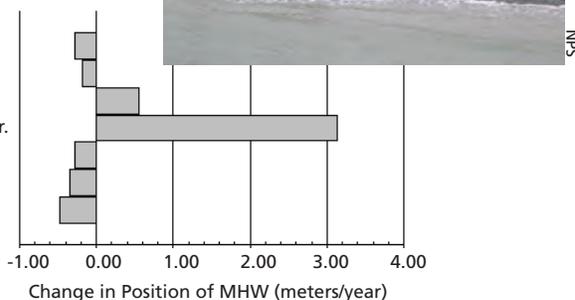
Images display tidal channel dynamics, coastal erosion, forest expansion, and wetland change that occurred between 1957 and 2004 at Silver Salmon Creek (LACL).

Status and Trends

Seven of 10 cross-shore beach profiles established in 1992 were re-surveyed in 2004 using rod and transit leveling to evaluate shoreline changes along the 82 km coastline of Lake Clark NPP (LACL). The beach profiles revealed variation in rates of erosion and accretion along the parks coastline. Erosion, landward migration of mean high water (MHW), was observed at 5 profiles and accretion, seaward migration of MHW, was observed at 2 profiles. Annual average rates of erosion and accretion ranged from -0.18 to -0.50 m/yr and 0.55 to 3.13 m/yr, respectively.

Annual rates of erosion and accretion at cross-shore beach profiles, LACL-Cook Inlet Coastline, 1992-2004.

- Polly Cr.
- Crescent Cr.
- Slope Mtn.
- Silver Salmon Cr.
- Spring Pt.
- Clam Pt.
- Glacier Spit



Future Monitoring

William Manley (INSTAAR) developed a time series of rectified aerial photographs and satellite images for selected locations along the shoreline of LACL, which will be monitored through time.

Contacts

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