

Climate Change and Coastal Erosion



Coastal Erosion

An understanding of erosion in the highly dynamic coastal environment is essential to the development of sound erosion and coastal management policy, regulations and decisions.

Among the most visual reminders of any major hurricane, flood, or storm event in any community are a sudden, dramatic change in the shape of the coastline and beaches and the loss of property, livelihoods and infrastructure.



Climate change is predicted to increase the intensity and frequency of storm surges which may also increase coastal erosion.

Depending on the type of shoreline, elevation of the coastal area and severity of the storm, some coastlines have retreated—sometimes literally overnight—and large amounts of sand and cliffs have vanished. As shoreline is lost, the risk of damage to coastal properties increases.

Faced with the challenge of preventing and reducing losses due to coastal erosion, decision-makers and landowners must answer some basic questions:

- What is at risk?
- What solutions are feasible?

Understanding Coastal Erosion

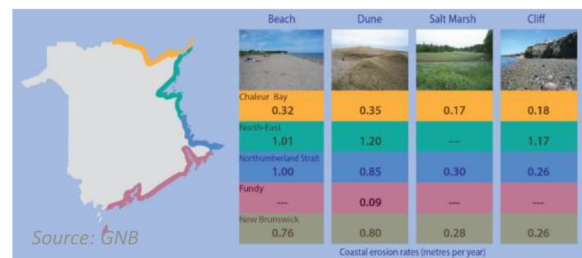
The majority of New Brunswick's coasts are susceptible to erosion. The amount of erosion from storms and storm surge is directly related to the number, intensity and duration of storms which can increase if storms occur during a high tide and full moon cycle.

- Although they are susceptible to erosion, beaches form the first line of defence against the velocity of ocean waves, providing a natural buffer between the waves and coastal properties, and natural features such as dunes and wetlands.
- As beaches continue to be damaged or altered during storms - especially the more severe storms that occur in fall and winter - they gradually lose their buffering ability, potentially increasing coastal erosion and aggravating the impacts to property, infrastructure, and natural features.

Sea-Level Rise

As the rate of sea-level rise accelerates in response to the warming effects of climate change, we will see an even greater increase in coastal erosion, increased property damage, saltwater intrusion into rivers and underground drinking water resources.

Sea level rise can also produce an overall rise in the elevation of the water table. This situation can lead to the failure of both municipal and private septic and other drainage systems which need to be located at an elevation that is above the water table. Changes in elevation of the water table would also affect river drainage systems by slowing down runoff and increasing the risk of inland flooding.



Erosion and the Economy

Hundreds of thousands of New Brunswickers and tourists visit New Brunswick's beaches each summer, generating millions of dollars in tourism revenue. In many of our coastal communities, beaches and beach-related activities create hundreds of jobs for area residents and are an important stimulus to our local economies.