Coastal Hazards

affecting our coastline

Coastal Zone Management

Coastal Hazards

The two causes of shoreline recession are sediment loss and an increase in sea levels.

Foredunes may be cut back by up to

20m

during a major storm event.

Many of the Shire's beaches suffered evere erosion during the 1970's, with surfclubs, caravan parks and coastal roads being severly threatened or badly damaged.

Seven hazards have been identified as influencing the NSW coastline and the processes within them.

If not properly managed, such hazards can reduce amenity, place coastal developments and public infrastructure at risk and lead to major financial loss. Potential problems for development along our coastline can be avoided if coastal hazards are recognised at an appropriate point in the decision making process. An understanding of coastline hazards and their effects on developments, recreational areas, coastal ecosystems and amenity is essential if the coastline is to be better managed. The solution lies first in the recognition of hazards and their impacts, and second, in the adoption of practical, yet effective management responses.

1 Beach erosion

Erosion is part of the natural response of a beach to changing wave and water level conditions. Generally, the eroded sand is returned to shore and the beach is rebuilt during calmer periods. However, the large waves, elevated water levels and strong winds generated by a storm can cause severe erosion to sandy beaches. Storm wave attack can move significant quantities of sand offshore with waves undercutting the beach berm and frontal dune to form a pronounced erosion escarpment. The foredune may be cut back by up to 20m during a major storm event.

bega valley shire council

Costal Hazards

2 Shoreline recession

Shoreline recession refers to the progressive landward shift of the average long term position of the coastline. Recession is different to beach erosion, although they both may be caused by the same processes. The two causes of shoreline recession are sediment loss and an increase in sea levels.

3 Coastal entrance instability

Both natural and trained coastal entrances can create a variety of hazards. Natural entrances tend to move along the beach in response to freshwater flooding and coastal storm effects, and may threaten any adjacent developments and the amenity of affected beaches.

4 Sand drift

Sand drift is caused when sand is moved by wind and is a seemingly unrelenting coastal phenomenon with all sandy beaches experiencing sand drift to some extent. Moreover, it is a slow moving and gradual process, but short episodes of strong wind can move surprisingly large volumes of sand. At best drifting sand is a nuisance; at worst it represents a permanent loss of sand from the beach system and may completely overwhelm coastal developments.

Fortunately sand drift is not a significant issue in Bega Valley Shire, due to our well vegetated dune systems and ongoing dune rehabilitation programs.

5 Coastal inundation

Coastal inundation is the flooding of low lying coastal lands by ocean waters. These include wetland and other fringe areas of coastal lagoons and rivers, and the areas behind beach and dune systems. The inundation of these areas can be caused by large waves and elevated water levels associated with severe storms.

Severe coastal inundation is an infrequent event and normally lasts for only a short period of time (i.e. several hours). Nevertheless, it can cause significant damage to public and private property: buildings can be damaged; the contents of flooded buildings can be spoiled and saltwater can intrude into freshwater systems and groundwater.

6 Slope and cliff instability

Slope and cliff instability hazards refer to the possible structural weaknesses in dunes and rocky headlands and the associated potential problems with the foundations of buildings, seawalls and other coastal works. Coastal bluffs and the erosion escarpments of sand dunes can slump, sea cliffs can collapse, and foundations of developments and structures can fail. Slope and cliff instability is different to coastal erosion and recession as the collapse of a foreshore slope or the failure of a foundation primarily depends upon the geological properties of a location.

7 Stormwater erosion

Many back beach areas are drained by small creeks and stormwater outlets that cross the beach to discharge stormwater into coastal waters. During major runoff events, such creeks can cause significant erosion of the beach and the nearshore area around their entrance. This in turn allows larger waves to attack the creek entrance, which if unstable, may migrate along the beach.

Climate change may exacerbate all the above hazards!

Find our more about **Bega Valley Shire Council's** coastal zone management from our website

www.begavalley.nsw.gov.au

This factsheet was adapted with thanks from Gosford City Council.

bega valley shire council