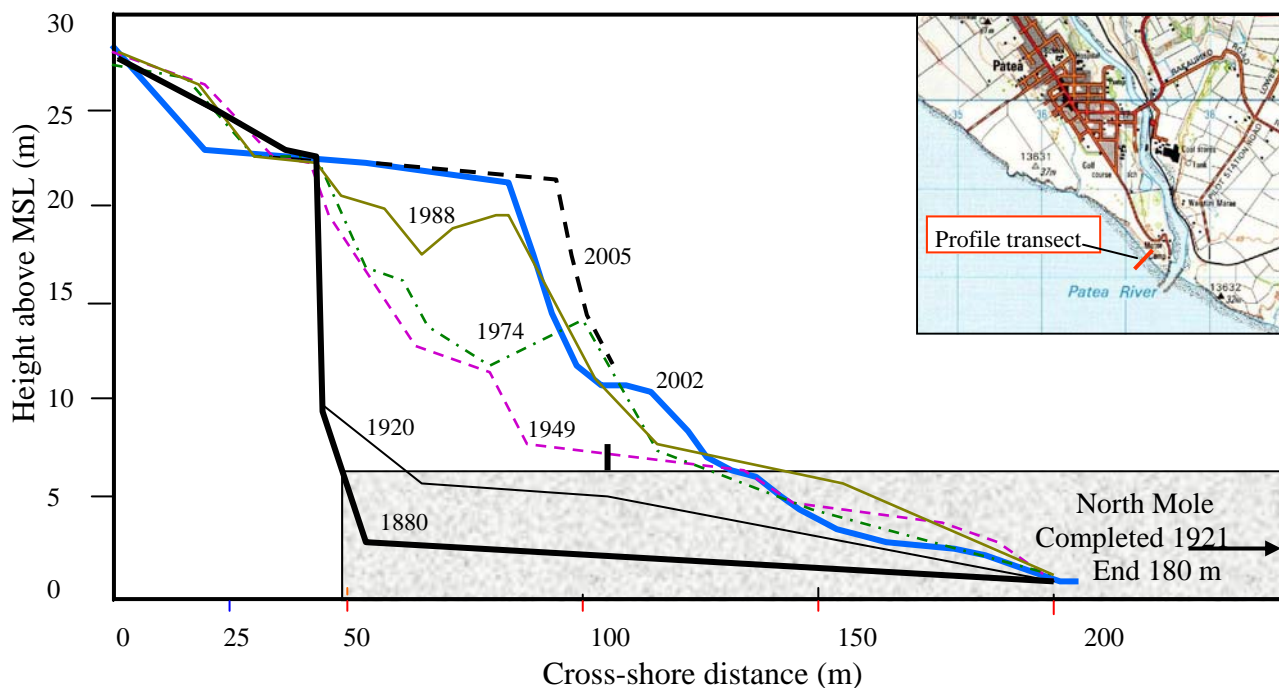


Coastal management services example

Sand stabilization at Patea's North Beach



Jetties were built at the Patea Rivermouth between 1880 and 1921 to improve entrance navigation. Disruption of the natural littoral drift (net northwest to southeast) bypass system resulted in accretion of the northern coast. By the 1940s drift sand was able to cross the headland and bury dwellings further inland. Sand stabilization works carried out during the 1950s and early 60s resulted in dune development and stability occurred until the 1980s. By that time the well developed (high) dunes had become unstable as vegetation was unable to cope with increasing wind-stress. Once again the beach settlement was threatened by wind-blown sand. A government funded sand stabilization scheme during the late 1980s and early 1990s was successful. Since that time sand stability has been achieved by using the area as a regional green waste disposal site. The profile sequence corresponding to these developments can be seen in the figure below. Recently, the Taranaki Regional Council have required alternative means of sand stabilization considered as part of their resource condition. Coastal Systems Ltd were commissioned by the South Taranaki District Council to undertake this work.

To ensure long-term stability, the dune face must: remain vegetated (to prevent erosion gut or blow out development); not increase in height (to avoid increasing wind-stress); nor encroach seaward (to avoid wave cut). In addition, natural character and landscape considerations had to be taken into account, along with the effects of climate change. A plan was developed which involved strategically located plantings of rhizomenous sand grasses which would then be managed to minimize seaward growth while preventing wind scour along the dune face. The adopted scheme achieves the project's sustainability objectives and the area no longer has to receive high volumes of green waste.

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**Coastal
Systems
Limited**

70 Karaka Street Castlecliff Beach 4501 NEW ZEALAND
 Telephones: +64 6 3444214 +64 21 057 4189
 Email: enquiry@coastalsystems.co.nz Web: www.coastalsystems.co.nz