Coastal factsheet series

SEDIMENTATION IN ESTUARIES

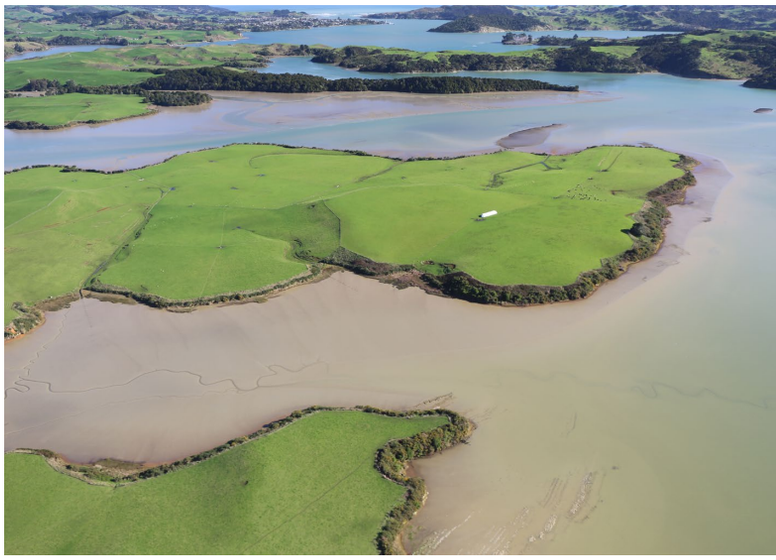
01

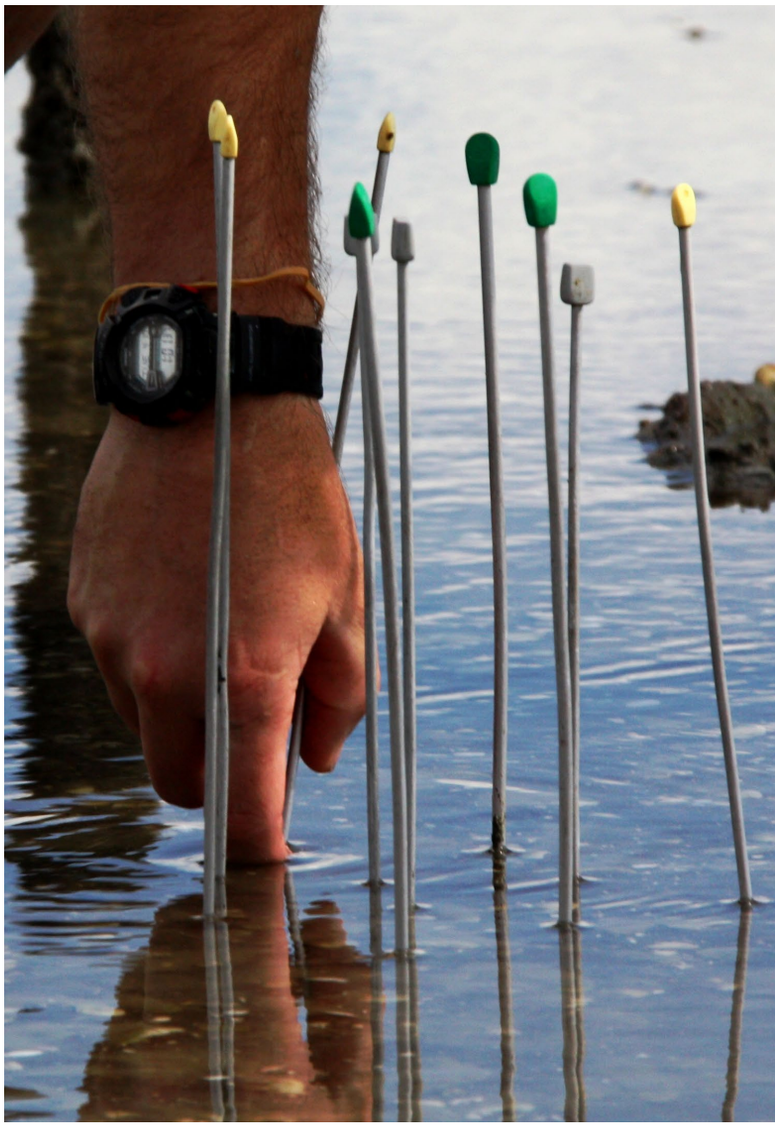
WHAT IS SEDIMENTATION?

Sedimentation in estuaries is a natural process that can be accelerated by changes in land use or land management within the catchment, or by development of structures within the estuary.

Accelerated sedimentation rates can impact on the amenity values of an estuary by infilling channels and making sediments muddier. Increased suspended sediment in the water column, and deposition of sediment on tidal flats, can affect benthic communities (i.e. plants such as seagrass, and animals such as shellfish and worms that live on or in the estuary sediment), with knock-on effects to fish and shorebirds.

The amount of sedimentation can be influenced by rainfall, waves and tidal currents and varies at different locations within an estuary and also seasonally with changes in weather patterns. This variation means that monitoring sedimentation is complex and it can be difficult to measure accurately.





MEASURING SEDIMENTATION IN ESTUARIES

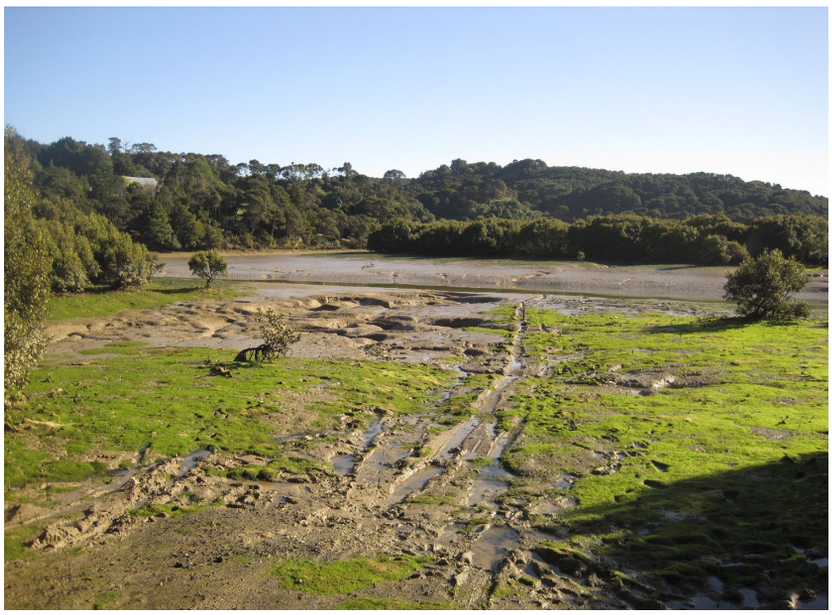
Sedimentation can be measured either remotely or directly, but both techniques have advantages and disadvantages.

Remote techniques measure the height of the estuary bed using specialised equipment deployed from boats or planes. These techniques can cover a large area but can be relatively inaccurate and are expensive, so tend to be used infrequently. **Direct techniques** measure the height of the seabed relative to a fixed marker, and tend to be more accurate and less costly than remote techniques, but can only cover a small area.

Currently, Waikato Regional Council monitors sedimentation as part of the Regional Estuary Monitoring Programme (REMP) using direct measurements of sedimentation relative to a series of plates buried beneath the intertidal flats of estuaries in the Waikato region. Sedimentation within estuaries can also be accompanied by a reduction in sediment grain size, which increases the muddiness of the sediment. Waikato Regional Council measures sediment grain size as part of REMP to identify any changes in sediment texture over time.

WHAT WE ARE DOING TO MANAGE SEDIMENTATION

Waikato Regional Council encourages landowners to use best management practices to limit the amount of sediment ending up in waterways and ultimately our estuaries. We give advice about appropriate land use, stream protection, erosion control and soil conservation. Soil conservation works help to minimise erosion on hill slopes and along river and stream banks. They include retiring erosion-prone land from grazing, riparian fencing and planting, constructing sediment traps, constructing debris dams and erosion control structures.



MORE INFORMATION

Contact

You can contact our coastal science team on Waikato Regional Council's freephone 0800 800 401 or by emailing info@waikatoregion.govt.nz

Publications

View, download or order the following publications at www.waikatoregion.govt.nz/Publications/

Regional Estuary Monitoring Programme 10 year trend report: April 2001 to April 2011, Waikato Regional Council Technical Report 2014/41

Coastal sedimentation: What we know and the information gaps, Waikato Regional Council Technical Report 2008/12

Mangrove-habitat expansion in the southern Firth of Thames: Sedimentation processes and coastal-hazards mitigation, Waikato Regional Council Technical Report, 2008/13

Whaingaroa (Raglan) Harbour: Sedimentation and the effects of historical catchment landcover changes, Waikato Regional Council Technical Report 2005/36

Web

www.waikatoregion.govt.nz/REMP

www.waikatoregion.govt.nz/TR201441/

www.waikatoregion.govt.nz/TR200812/

www.waikatoregion.govt.nz/TR200813/

www.waikatoregion.govt.nz/TR200536/

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Waikato
REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato