

What has been happening?

- We continue to monitor 53 sites. Cross-sections starting from behind the frontal dune and moving seawards towards the mean sea level mark are measured annually in February at each of the sites.
- Long-section profiles also get measured along beach section typically in front of urban development. Pre- and post-storm event cross-sections and long sections also get collected when necessary.
- Council continues to develop aerial photography services, using a local flying company and enthusiastic GIS staff members who can stomach taking photos through a small porthole in the underside of the aircraft. This aerial photography dataset is often ground-truthed using the council's surveying team.

The cross section data collected above feeds into local coastal hazard analysis. Recent examples are the WBOPDC and ODC projects where the cross-section data gets used for assessing short- and long-term trends, which helps define the position and shape of hazard lines and zones.

The aerial photography record allows for larger areas of coastline or areas outside of the cross-section profiles to be examined. A recent example is shown over the page, looking at the Waitahanui Stream and the relationships between fluvial and coastal processes.



The migration of this stream can cause localised erosion and reduced drainage ability in the lower parts of the catchment.

The aerial photography record documents the extent of this migration and is a useful resource when discussing management options with interested parties.

What has been measured?



Bay of Plenty Regional Council established a coastal beach monitoring programme in 1990 and profiles 53 sites annually. The shape of the beach is measured and the position of key features such as the frontal dune documented. The volume of sand on the beach is also calculated. This monitoring covers 135km of sandy coastline. No changes in trend have been calculated since last year's report.



Results from the 1990-2015 dataset for each of the 53 monitoring sites show the following beaches are exhibiting trends of ongoing erosion:

- **Ōhope Beach**
- **Pukehina Beach**
- **Southern area of Waihi Beach**
- **Central section of Hikuwai Beach**

This pattern is unchanged since the last report, which summarised data up to 2011.

Waitahanui Stream position over time



March 1943: Earliest photography showing confinement structure on right.



May 2000: Strong westward migration of approximately 900m.



January 2015: Strong westward migration of approximately 1400m.



Coastal Hazard Risk Indicator (CHRI) project

The data analysis phase of this project is beginning again. It involves using both planning measures and GIS methodologies to determine changes in the coastal urban environment. This stocktake was last reported in 2009 (www.boprc.govt.nz/media/33532/Report-100203-Env0907CoastalHazardRiskIndicatorsReview2007.pdf). Several indicators are used to measure the effectiveness of the council's planning documents. These indicators are as follows:

- CHRI-1 Have coastal hazard zones been identified and included on district planning maps?
- CHRI-2 Are there district rules to support those hazard zones and are these aimed at not increasing physical risk of coastal hazards? This may include no-subdivision rules and building setbacks.
- CHRI-3 Are there administrative or district plan policies to ensure that any building within the coastal hazard zones is subject to controls to mitigate risk such as relocatability and relocation management plans?
- CHRI-4 Average building setback for the most seaward residential dwellings on residential lots in coastal hazard zones
- CHRI-5 Number of residential dwellings in the coastal hazard zones.
- CHRI-6 Number of residential lots in coastal hazard zones
- CHRI-7 Percentage of new residential dwellings within coastal hazard zones subject to resource consent with building relocation conditions.

