

# Port Otago Limited. Inshore Dredging Disposal Monitoring Factsheet - Beaches



Shelly Beach

## Background

Port Otago Limited has disposed historically less than 450,000m<sup>3</sup> per year of dredged material (sand, rock and silt) to the inshore disposal grounds. This material being derived from dredging the harbour channel and berth areas to maintain the required depths, as well as minor capital dredging works.

A variety of monitoring is undertaken on a regular basis to monitor the environmental effects of the disposal activity.

## Beaches

Beaches in and around the Otago harbour are prized for the recreation and amenity value they provide to the community. They also provide an important defence against coastal erosion.

## Legend

- LB 1980 Shoreline
- LB 1997 Shoreline
- LB 1999 Shoreline
- LB 2005 Shoreline
- LB 2013 Shoreline



## What is the issue?

Although disposal of dredged material at sea has the potential to positively enhance the amount of sand available on nearby beaches, it can also alter coastal processes and currents, that may cause undesirable erosion and retreating of beaches.

The disposal operation must not result in beach erosion due to focusing waves onto parts of the beach. The supply of sediment to the beach cannot be lost. No unwanted sediment should be introduced to the beaches.

*Figure 1. Shoreline History*  
Shoreline changes at Aramoana and Shelly Beach plotted from aerial photographs from 1980 to 2013. Base photo is 2013 imagery

Monitored Beaches since the mid 1990's include:

- Karitane
- Warrington
- Doctors' Point
- Purakanui
- Long Beach
- Whareakeake
- Kaikai Beach
- Aramoana
- Shelly Beach

## Aramoana



## Whareakeake (Murderers Beach)



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Aramoana

## What has the monitoring shown?

Port Otago has been monitoring beach profiles in and around its dredging disposal sites since 1996.

The monitoring has shown that the beaches adjacent to the disposal ground show no adverse effects from the disposal activity.

The sandy beaches between Taiaroa Head and Karitane erode in response to storm waves and accrete during calmer times.

This is quite normal, and there is no evidence that the disposal grounds focus wave erosion to the beach.

The beach sand appearance is also no different to sandy beaches south of the harbour. This indicates that the dredge disposal is not introducing 'foreign' sediment to the beaches.

A beneficial aspect of the disposal activity is that the sand is bypassed from being trapped in the harbour, to continue the journey along the nearshore seabed to nourish the beaches north of the harbour.

In addition, disposal inshore at Shelly (The Spit) beach helps to nourish the narrow line of dunes to provide protection of this ecologically sensitive area within the harbour.

*Figure 2. Beach Profile  
Overlay of surveys of the beach profile located at the northern end of Aramoana Beach.*

