

Monitoring Fact Sheet

TUAKI

Background

Port Otago Ltd need to modify the shipping channel to accommodate the next generation of container ships. The modification involves dredging the approaches to Port Chalmers and berth area and deepening of the channel. A few areas would also require widening. The material will be disposed of at the existing inshore dredge disposal sites but most will be disposed of at a site about 6.5 km to the north-east of Taiaroa Head.

Tuaki in Otago Harbour

Tuaki, also known as cockles or little-neck clams (*austrovenus stutchburyi*) are an important shellfish collected for both customary and recreational purposes. Some of the largest populations in New Zealand are found on the sand flats and intertidal areas of Otago Harbour. The intertidal flats in the middle of the harbour between Port Chalmers and Otakou, are less accessible to the general public, with areas bordering the harbour at Aramoana, Te Ngaru as well as Te Rauone to Harwood on the peninsula side of the harbour being very accessible to the public. The tuaki population is a significant and important resource that requires protection.



What is the issue?

As suspension feeders tuaki can be impacted by high levels of suspended sediments and high rates of sedimentation from dredging operations. The dredging planned by Port Otago Ltd will generate plumes of suspended sediment some of which may settle out in parts of the Harbour.

What do we know?

Tuaki can tolerate relatively high levels of suspended sediment with health and well-being only reducing at concentrations of 300-400 mg/l. The assessment of effects identified that in the worst areas tuaki could be subject to levels of 300-400 mg/l of suspended sediments. Exposure to these high concentrations, however, would be only for 5-7% of the time when dredging in the nearby channel. In other areas suspended sediment concentrations would be well below this level. Thus suspended sediments are not expected to impact on the population.

There will not be loss of any tuaki in the area of widening immediately adjacent to the port if that occurs in the future, as the intertidal habitat in this area does not have a population of tuaki.



What has been done?

Baseline surveys of the tuaki beds have been completed at Pulling Pt, Acheron Head, Te Ngaru and Te Rauone and a reference site in Papanui Inlet. Ecological area, Wellers Rock/Omate Beach and at a control site in the upper Harbour. Turbidity sensors have also been deployed at key sites to provide information on turbidity levels experienced by tuaki beds when dredging commences.

A turbidity limit of 70 NTU based on experimental results has been set to ensure tuaki populations will not be adversely affected by suspended sediments.

Twelve months baseline turbidity monitoring has been completed at the Acheron Head site, which will be used to compare with results measured during dredging operations.

A Technical Group and Manawhenua Consultative Group have been set up to facilitate communication, provide input to monitoring review reports and identify ways to avoid, remedy or mitigate adverse effects on the environment and cultural values if they were to occur.

What is Port Otago doing about it?

Port Otago have developed an Environmental Management Plan (EMP) which includes:

Surveying tuaki beds (at the locations shown in the side panel) pre-, during and post-dredging to detect changes in the aquatic communities outside natural fluctuations, which could be attributed to the dredging project.

An adaptive management plan has been developed around the Acheron Head monitoring site. A two stage approach will be used whereby if levels reach 35 NTU averaged over 6 hours then the consent authority must be notified and further investigations carried out to assess if the dredging is the cause of the high levels. If the levels exceed 50 NTU and dredging is found to be the cause, then management actions such as changing the operations around tidal stage, relocating the dredging activity or not overflowing the hopper will be required.

If the turbidity limit of 50NTU (10 day average) is exceeded at either the Quarantine or Roseneath monitors, dredging activity will not be allowed to occur in the areas of the Port Chalmers swinging basin during the flood tide.

Management of the dredging activity in response to the turbidity limits for sea-grass or rocky shores will occur if those lower limits are exceeded as a result of the dredging. This will have the effect of also providing protection for tuaki.



Hoani Langsbury of Te Runanga o Otakou, displays local tuaki. Photo credit - Peter McIntosh ODT

Further information can be found at www.nextgenerationportotago.nz