



Ecology

We have been busy looking at possible ecological effects of our proposed changes, including on marine organisms and birdlife

How did we assess effects on ecology?

We commissioned independent experts to carry out ecological effects assessments based on the existing ecological footprint and values of the marine and bird ecology inhabiting the area.

These assessments carefully considered the actual and potential effects of the dredging and disposal activities Refining NZ has planned, and ways to avoid, remedy and mitigate these effects.

Marine Ecology

As recognised in the Northland Regional Coastal Plan (NRCP) and the New Zealand Coastal Policy Statement (NZCPS), the independent experts we commissioned identified soft-bottom benthic communities which lie within our planned dredging and disposal areas.

These communities are dominated by sand dollars, starfish, flatfish, polychaete worms, hermit crabs, shellfish and crabs.

Hard-bottom benthic communities are located adjacent to our dredging and disposal areas, at Motukaroro Island, Whangarei Marine Reserve and Home Point. These communities include kelp beds and sponge gardens of very high ecological value.

Adjacent to one of the disposal areas there is an important fishing spot at Three Mile Reef. This area is not afforded particular protection in the NRCP but is nonetheless, seen to have important local recreational and ecological value.

Actual and potential effects

The experts have identified the following effects:

- In the short term, soft-bottom benthic communities would be effectively eliminated by being removed from the dredge footprint and buried at the disposal areas
- » This impact is temporary during which the benthic communities would progressively recover

This does constitute a moderate ecological effect that Refining NZ must account for. The experts have said that provided we take into account their recommended mitigation measures, this effect can be offset.

- Hard-bottom benthic communities and the Three Mile Reef fishing area are potentially vulnerable to sediment plumes and sedimentation effects (such as increased turbidity, where the water becomes cloudy with stirred-up sediment).

The experts have said that provided adverse sedimentation effects can be limited to the planned dredging and disposal footprint, the effects on water columns, plankton, fish and wildlife and coastal habitats are expected to be minor or less than minor.

Mitigation and monitoring

The experts have recommended adopting the following to mitigate, avoid and/or monitor effects:

- Contribute to a harbour enhancement type programme to enhance the likes of shellfish and seagrass communities within and adjacent to the dredging and disposal areas
- Monitor water turbidity against acceptable limits and respond with action where necessary, including operational controls on dredging and disposal
- Keep valves closed on the dredge during transport to prevent spillage outside designated dredge and disposal areas

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Bird Ecology

The experts used local records of birds and field investigations to determine that together there are 34 species frequenting the area, including 10 nationally threatened and 16 nationally at risk species.

The 26 nationally important species are entitled to protection under the New Zealand Coastal Policy Statement (NZCPS), which requires adverse effects to be avoided. These coastal and pelagic birds include Little Blue Penguin, as well as species of petrel and shearwater.

Actual and potential effects

The experts have identified the following possible effects:

- Water column effects (including increased turbidity)
- Vessel movements
- Vessel lighting
- Underwater noise
- » Each of these was considered in relation to adverse impacts they could have on things such as feeding habits, nesting areas and breeding patterns

Our experts identified a couple of specific risk examples:

- Little Blue Penguin's passage to its shoreline nesting area could be affected by increased turbidity
- Pelagic birds such as shearwaters and petrels could be affected by vessel lighting

Provided recommended avoidance and mitigation steps are taken into account, these risks will be acceptable. The overall conclusion is that the impact on coastal and pelagic birds is considered to be low and consistent with the rules set out in the NZCPS.

Mitigation and monitoring

The experts have recommended adopting the following to mitigate, avoid and/or monitor effects:

- Provide Little Blue Penguin nesting boxes on Motukaroro island to mitigate any short term impacts
- Provide nesting boxes for Grey-Faced Petrels at Bream Bay Scenic Reserve
- Carry out a lighting audit of vessels (looking at things like orientation of lighting and dimmers/timers on lights) and rectify any issues where practicable
- Carry out monitoring to provide information on the state of the environment following dredging.



If you'd like to know more of the nuts and bolts of the ecological effects of our proposed changes, you can get a copy of the assessment reports from our experts here