OFFSHORE DRILLING: EFFECTS ON WHALES

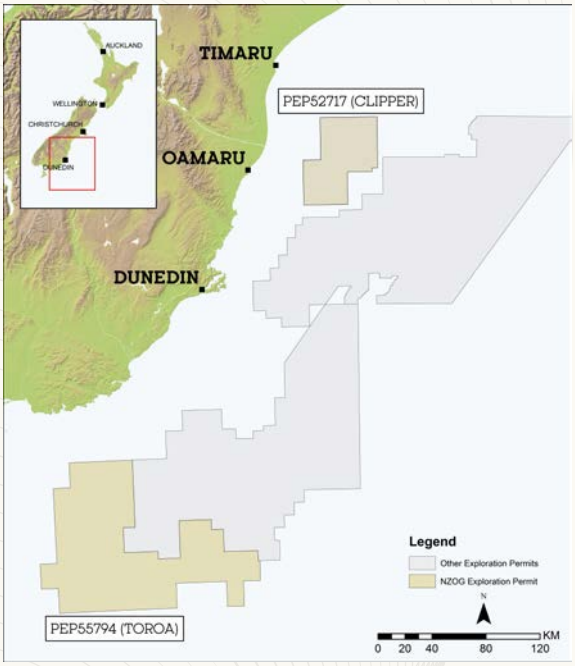
You asked us:

» What are possible risks to the 'Whaleway' – the migration of whales and other marine mammals through and close to offshore permits?

WHAT IS KNOWN ABOUT WHAT'S OUT THERE?

Most available data on the presence of marine mammals around the southern coastline and vicinity of the Clipper permit are opportunistic sightings, from vessels, including sightings from seismic survey vessels. What we can say about marine mammal presence in this area is, therefore, limited. Opportunistic sightings indicate what species were seen, when and where, but cannot lead to a conclusion about the importance of the area for those species.

Available data does indicate at least 23 taxa of marine mammals have been sighted in the area of the Clipper permit, including baleen whales, toothed whales, and dolphins. It is likely marine mammals are in the area year-round. Blue whales are likely to be in the area for some of the year, but it is highly unlikely that Hector's dolphins would be found there. The area is also likely to be part of a migration path of marine mammal taxi including humpback and southern right whales. It is unknown if the area is likely to be a focus for breeding or feeding.



MARINE MAMMALS CO-EXISTING WITH ACTIVE OIL AND GAS FIELDS

Marine mammals and active oil and gas fields can, and do, co-exist worldwide, such as in the Gulf of Mexico, North Sea and the Taranaki Basin. For example, seals and other mammals are commonly found resting on the Tui offtake hose, and feeding around fixed platforms in Taranaki. A preliminary literature search found no scientific data showing that marine mammals have been excluded permanently from oil and gas fields, though there is evidence some populations move temporarily. The absence of research means it is not possible to accurately determine and attribute negative or beneficial impacts of oil and gas fields on marine mammals. This would need to be done by undertaking research prior to the activity commencing and continuing that monitoring during the development of the field. This is an issue that would be considered by the Environmental Protection Authority.

WHAT MIGHT BE THE KEY IMPACTS ON MARINE MAMMALS? HOW WOULD THESE BE MITIGATED?

Our application to the Environmental Protection Authority (EPA) for approvals for exploration drilling will include extensive environmental analysis, which would be informed by widespread consultation.

The environmental impact assessment will consider each stage of the project, from rig or vessel installation and operation to drilling the exploration well itself, and the potential impacts on marine mammals (as well as other environmental aspects). This will include effects in relation to Te Ao Māori, provided through consultation with iwi and hapū.

Potential impacts of exploration drilling on marine mammals to be considered in an environmental impact assessment include[1]:

- Potential impacts from noise created by seismic survey operations,
- Impacts from increased turbidity and suspended sediments due to deposited material, or disturbance of the seabed,
- Positive impacts due to structures (eg rig or platform) or fishing exclusion zones providing structure and habitat for fish, creating foraging opportunities for marine mammals,
- Impact to the mauri of marine mammals

MITIGATION OPTIONS

Any Environmental Impact Assessment accompanying a regulatory approval application will include mitigation options. The Environmental Protection Authority will consider these options in considering the merits of the application. The EPA will consider the nature, type, duration and scale of the impacts identified in the environmental impact assessment.

Mitigation options could include:

- Avoiding certain activities or reducing activities with greater impacts.
- Compliance with the Department of Conservation Code of Conduct for minimising acoustic disturbance to marine mammals ('the Seismic Code') including soft-starts, monitoring and immediate cessation of activity.
- Applying restrictions on timing, duration or location of an activity.
- Approving contingency/emergency plans and other mitigation controls including environmental baseline monitoring requirements.
- Requiring offsetting or achieving a net environmental benefit in relation to a specific impact.
- Restoration of mauri as advised by iwi with mana moana.

An application could be declined if the environmental impacts cannot be avoided or mitigated. If the application is approved, conditions would be placed on consents requiring monitoring of impacts.

[1] This list is not exhaustive. Refer to info sheet 3 for more information on assessment of environmental effects

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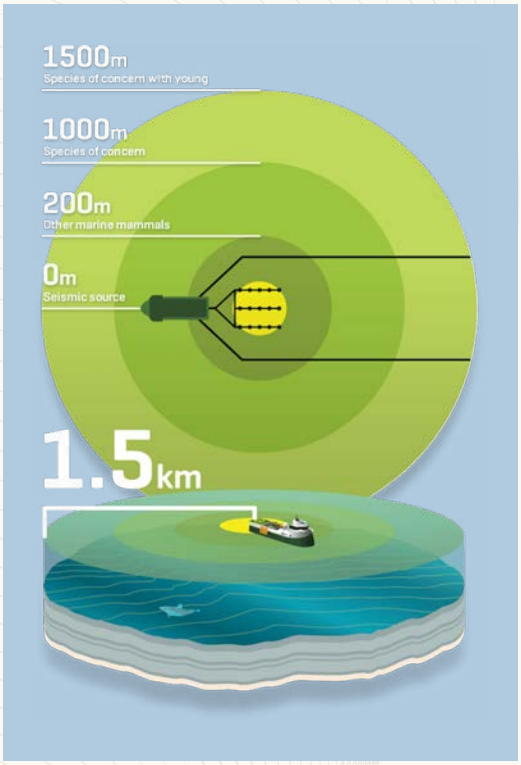
HOW DOES THE DEPARTMENT OF CONSERVATION CODE OF CONDUCT FOR MINIMISING ACOUSTIC DISTURBANCE TO MARINE MAMMALS ('THE SEISMIC CODE') WORK?

Anyone conducting an industrial seismic survey is required to submit a Marine Mammal Impact Assessment (MMIA), to the approval of the Department of Conservation (DoC). Offshore marine seismic surveys must adhere to the DoC seismic code.

Completed MMIAs are available on the Department of Conservation website.

Under the Code there are three mitigation zones for surveys, determined according to the sensitivity of the marine mammals to which they apply and the potential effect of the sound levels likely to be encountered at that distance from the source. The diagram opposite shows the key distances.



Operators undertaking a seismic survey are required to:

- Have present two independent trained marine mammal observers and two passive acoustic monitoring operators to detect the presence of marine mammals (whale, dolphin and porpoise) during all seismic operations.
- Record all acoustic detections and sightings of marine mammals before and during operations.
- Have regard to the mitigation zones. 1.5 kilometre radius for species of concern with young, 1 kilometrefor species of concern without young, and 200 metre for all other species.
- Stop the acoustic source if any marine mammals enter the relevant mitigation zone.
- Use the lowest practical acoustic source volume for the survey that will still achieve survey objectives.
- Conduct 30 minutes of pre-observation prior to commencing the soft-start procedures, which slowly builds up the source volume over a period of 20 minutes.

WHAT DOES THE SCIENCE SAY ABOUT THE IMPACTS OF SEISMIC SURVEYS ON WHALES?

A variety of studies have been reported in scientific literature over the years, but there is no definitive answer as to the effect of seismic surveying on whales. Some animals/species have been reported as not reacting to the noise at all, others have been observed moving away when the vessel was many kilometres away. Humpback whales have been observed moving rapidly away from the sound source, as well as moving rapidly toward it.

Essentially reactions can be very different depending on the species, location, type of noise, and other factors. No deaths or strandings of marine mammals have been directly linked to seismic surveying, but naval sonar (a very different type of loud sound) has been implicated in both and is often confused with seismic in popular media. Nonetheless, a genuine concern exists about the potential effects of seismic surveying on marine mammals, and DOC has developed the Code to minimise this risk.

[1] This is one of a series of high level information sheets developed in response to specific questions from the New Zealand Oil & Gas Southern Community Panel http://southern.communitypanel.org.nz/. It is intentionally high level and not intended to form part of an environmental impact assessment. Such an assessment will be undertaken as part of any regulatory process required for the development of the Clipper permit.

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