



2012 Code of Conduct for Minimising Acoustic Disturbance to Marine Mammals from Seismic Survey Operations

The *Guidelines for Minimising Acoustic Disturbance to Marine Mammals from Seismic Survey Operations* and its supplementary Reference Document were originally established by the Department of Conservation in 2006 in conjunction with the Petroleum Exploration and Production Association of New Zealand (PEPANZ).

Since 2010 the department has been working with stakeholders to review the guidelines and has now implemented the *2012 Code of Conduct for Minimising Acoustic Disturbance to Marine Mammals from Seismic Survey Operations* (the Code), in addition to a revised Reference Document that provides context and assists with interpretation.

While often associated with oil and gas exploration, seismic surveys are also undertaken for the purposes of scientific research as well as seabed minerals prospecting. Stakeholders that were involved in the review process included representatives from the scientific community, government agencies, industry, professional observers and environmental groups – both from within New Zealand and internationally.

There is a high level of agreement across the stakeholder group for the general direction taken, with feedback indicating that the final outcome is the most comprehensive framework available for protecting marine mammals from the potential impacts of seismic survey operations. The Code has been endorsed as oil and gas industry best practice in New Zealand by PEPANZ.

The primary objectives of the Code are to:

- minimise disturbance to marine mammals from seismic survey activities;
- minimise noise in the marine environment arising from seismic survey activities;
- contribute to the body of scientific knowledge on the physical and behavioural impacts of seismic surveys on marine mammals through improved, standardised observation and reporting;
- provide for the conduct of seismic surveys in New Zealand continental waters in an environmentally responsible and sustainable manner; and,
- build effective working relationships between government, industry and research stakeholders.

The Code comes into effect on the 1st August, 2012, and it will be subject to a performance review after 3 years prior to the consideration of mandatory regulations. However, some elements may need to be reviewed earlier to ensure alignment with regulations being developed by the Ministry for the Environment to manage the environmental impacts of activities in the Exclusive Economic Zone. It is proposed that the Code will be incorporated by reference into these new regulations.

Full details about the Code will be available on www.doc.govt.nz/seismicsurveys from the 2nd August, 2012.

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A number of significant changes have been implemented to build on the 2006 guidance, most notably:

- Recognition of three levels of surveys depending on scale and potential effects (Level 1 being highest), determined according to the notified operational capacity of the acoustic source array;
- Specific mitigation measures for Level 1 & 2 surveys (Level 3 being exempt due to negligible potential impacts) for marine mammal groups according to sensitivity, with three defined 'mitigation zones' for each level where acoustic sources either cannot be activated or must be shut down;
- Increased focus on notifications of surveys to provide for pre-survey planning engagement with departmental officials;
- Requirements for Marine Mammal Impact Assessments (MMIA) to be submitted to the Director-General;
- Sound transmission loss modelling¹ required as part of the MMIA for operations in Areas of Ecological Importance (AEI – which includes Marine Mammal Sanctuaries), with scope for additional mitigation measures as specified by the Director-General;
- Requirement for 2 qualified & independent Marine Mammal Observers (MMO), and 2 qualified & independent Passive Acoustic Monitoring² (PAM) operators, on all Level 1 surveys;
- Requirement for 2 qualified MMO on all Level 2 surveys;
- Requirements for operating in poor sighting conditions or at night, or in new areas within the survey;
- Provisions for marine mammal observations at all times while the acoustic source is in operation;
- Limitation of individual observer effort to 12 hours in any 24 hour period;
- Development of observer training, performance and reporting standards;
- Expanded recording and reporting requirements, including data on all marine mammal observations regardless of location;
- Recommendation to consider impacts on other marine species and habitats at the planning stage, and to record observations where possible; and,
- Prohibition on the use of explosives as acoustic sources
- Web-based GIS maps identifying AEI for NZ marine mammal species

There is also a strong focus on industry responsibility for co-ordination of research opportunities during the three year duration of the Code, in order to address specific areas of scientific uncertainty about effects on New Zealand species and habitats, ahead of any regulations that may be developed.

¹ Sound transmission loss modelling is a process through which the potential sound levels generated by specific acoustic source configurations can be modelled and predicted over the range of physical environmental conditions expected during the survey.

² Passive Acoustic Monitoring is a technological development involving the use of underwater audio receiving equipment that can detect vocalising whales and dolphins. When properly designed, calibrated and deployed, a skilled operator can estimate direction and distance in addition to identifying many species. Minimum PAM equipment specifications and performance parameters have been clearly established in the Code.



Frequently Asked Questions

Why have a Code?

Marine seismic surveying using energy from acoustic sources to determine sub-seabed geology can generate significant underwater sound. Depending on the energy levels produced underwater, marine mammals could potentially be impacted through direct effects (eg physical trauma) or indirect effects (eg masking communication, disruption to feeding). Internationally, many jurisdictions have frameworks to manage such activities and mitigate potential impacts to acceptable levels. New Zealand established guidelines in 2006, and due to developments in international best practice, in 2010 it was considered timely to review and update the management regime.

Where does the Code apply?

To all New Zealand's continental waters - this includes the Coastal Marine Area; the Exclusive Economic Zone (EEZ); and, for New Zealand flagged vessels, the Extended Continental Shelf as well.

Who does the Code apply to?

Any person or organisation planning to undertake a marine seismic survey using an acoustic source; which could include the oil and gas exploration industry, scientific geophysical research, seabed minerals prospecting and cable-laying.

What about other activities that generate underwater noise?

Within the Coastal Marine Area activities such as pile-driving would be managed by the regional council under the Resource Management Act 1991. In the EEZ (12-200nm) regulations are being developed by the Ministry for the Environment that address other sources of noise (vibrations in the water column), which would be administered by the Environmental Protection Authority.

How is the Code enforced?

For an initial trial period the Code remains essentially voluntary and non-enforceable, though it is considered industry best practice. Both stakeholders and government agree that regulations are necessary, and there is commitment to establish mandatory measures once the provisions of the Code have been tested and refined through implementation experience. This also allows time for research into several key areas of scientific uncertainty about the effectiveness of mitigation measures, to ensure that the regulations eventually established are the best they can be. Finally, it takes time for the private sector to develop the necessary training capacity to meet the requirements of the Code and to ensure there are enough qualified observers available to make the system work. For all these reasons it was decided that creating regulations at the present time would be premature, with greater longer-term benefits achieved through an interim measure with a specified duration of three years.



What will happen to the Code when the new EEZ regulations come into force?

The effects of seismic surveying will be regulated under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Bill (EEZ Bill). The Government has proposed regulations under the Bill that will incorporate the Code by reference as a mandatory standard. This is so users would not be faced with multiple requirements under different regulatory regimes. When the regulations come into force it is proposed the Department of Conservation will retain responsibility for day-to-day implementation of the Code. However, in the EEZ (12-200 nautical miles) the Environmental Protection Authority would be able to enforce compliance with the Code.

The Department of Conservation is committed to creating consistent regulations for seismic surveying for all New Zealand waters under the Marine Mammals Protection Act 1978. When this occurs, the EEZ Bill regulations will be revised accordingly.

How does the Code relate to the Marine Mammal Sanctuaries?

There are six gazetted Marine Mammal Sanctuaries (MMS), five of which contain mandatory regulations for seismic surveying. In every respect the Code contains equal or more stringent provisions than the MMS regulations, except for relatively one minor requirement relating to the amount of time the acoustic source can be inactive before a soft-start is required. The Code does not replace the MMS regulations, which remain mandatory and enforceable. However, stakeholders have agreed that where there are inconsistencies they will meet the more stringent provisions. After the Code has been reviewed in 3 years, the Department will develop consistent regulations throughout New Zealand waters and amend the MMS Notices accordingly.

What are the most significant changes in the new regime?

Requirements for 4 independent observers, 24-hour Passive Acoustic Monitoring (PAM) on Level 1 surveys and submission of a Marine Mammal Impact Assessments for all surveys are amongst the most important innovations. In addition, the strong focus on performance standards for marine mammal observers and PAM operators gives much greater confidence in the credibility of qualified observers. In general terms, the regime is now far more comprehensive and robust.

Who was consulted in the development of the Code?

The Code is a technical document, so it was considered appropriate to engage in targeted consultation with specialists and key stakeholders. However, it was a broad and inclusive process, through which a wide range of representative organisations were offered a chance to participate, including environmental groups, industry, academics, government agencies and observers – both within New Zealand and internationally. Tangata whenua engagement was sought through the Department of Conservation's established nationwide contacts. Full public consultation will be undertaken when regulations are being considered under the Marine Mammals Protection Act 1978 in three years time.



What is a Marine Mammal Impact Assessment (MMIA)?

This is a similar process to an Environmental Impact Assessment, except the focus is on marine mammals only. The completion of the MMIA is the responsibility of the seismic survey proponent, and it has to identify all the potential impacts of their proposed activities along with the particular sensitivities in the region of operations, and identify all steps that can be taken to minimise or avoid negative effects. The proponent also has to consult with interested stakeholders and specialists to determine the extent of known sensitivities. The MMIA is submitted to the Department of Conservation, which will review the information and provide any necessary advice. Additional mitigation measures considered to be necessary by the Department have to be implemented in the survey methodology.

What is an Area of Ecological Importance (AEI)?

The Code provides a high degree of protection for marine mammals throughout New Zealand waters as a minimum requirement. However where particular sensitivities are known, extra precautionary measures may need to be considered. The Department of Conservation has analysed available databases for information on marine mammal distributions, and used specialist knowledge to identify Areas of Ecological Importance (AEI), which includes all the Marine Mammal Sanctuaries. As a result, publicly accessible GIS based maps will be available on the website, which will be subject to ongoing reviews as new information comes to light. Special interest groups and stakeholders with specialist knowledge about marine mammal sensitivities in their regions are able to engage with the Department of Conservation in order to refine the maps if necessary. This map provides critical information to seismic survey proponents at the planning stage.



What is a 'mitigation zone'?

A mitigation zone is a circular area of a specified radius around the centre of the acoustic source array which is continually monitored by qualified observers, within which they have the authority to delay the start of operations or shut-down the survey due to presence of a marine mammal. There are three mitigation zones for each level of survey - Level 1 (highest power) or Level 2 (reduced power) - determined according to the relative sensitivities of the marine mammals to which they apply and the potential impacts of the underwater sound levels likely to be encountered within them. The diagram below outlines the key elements for each survey level.

