



6

WHARF

MARINE WILDLIFE MANAGEMENT PLAN

HBRC Certified August 2019

NAPIER
PORT

DOCUMENT CONTROL

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CONSULTATION

ASSOCIATION	
DEPARTMENT OF CONSERVATION	YES
MANA WHENUA HAPŪ	YES

CERTIFICATION PROCESS

DOCUMENT SENT TO HBRC FOR CERTIFICATION	DATE
Napier Port	08/07/2019

PLAN CERTIFICATED

HBRC	DATE
Approved and Certified	02/08/2019

CONSENT CL180008C – REFERENCES

CONDITION	PAGE REFERENCE WITHIN THE PLAN
8 A.	Page 13 : Marine Mammal Observers (MMO)
8 B.	Page 15 : Vessel interaction with Mammals
8 C.	Page 18 : Department of Conservation Liaison
8 D.	Page 13 : Marine Mammal Observers (MMO)
8 E.	Page 12 : Controls to minimise the effect of underwater noise
8 F.	Page 13 : Monitoring in designated safety zones
8 G.	Page 15: Soft Start
8 H.	Page 18 : Methods of avoiding Entanglement
8 I.	Page 18 : Marine Debris and Entanglement
8 J.	Page 18 : Lighting

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LIST OF ABBREVIATIONS

BHD	Backhoe Dredger
HBRC	Hawkes Bay Regional Council
ODA	Off-shore Disposal Area
MMO	Marine Mammal Observation
MMOZ	Marine Mammal Observation Zone
MWMP	Marine Wildlife Management Plan
PTS	Permanent Threshold Shift
TSHD	Trailing Suction Hopper Dredger
TTS	Temporary Threshold Shift

Department of Conversation

Napier Port has consulted with the Department of Conservation (DOC) in the preparation of Marine Wildlife Management Plan.

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1. INTRODUCTION

1.1 GENERAL BACKGROUND

This Marine Wildlife Management Plan (MWMP) has been developed for Napier Port's 6Wharf construction and Dredging Project to avoid or minimise the potential for adverse effects on marine mammals and birds by the Project activities.

This MWMP covers the project activities, specifically:

- Approximately 3.2 Mm³ of dredge material will be dredged from the Project area.
- Disposal of dredge material at the offshore disposal area, approximately 5km east of the port.
- Construction of the new 6 Wharf.

1.2 PROJECT AREA AND LOCATION

Figure 1 shows the dredge footprint for all stages of the project. Figure 2 shows the Offshore Disposal Area (ODA), for the project.

1.3 REVIEW OF MWMP

The Plan will be reviewed annually after initial certification by HBRC for the first five years as a minimum.

1.4 PURPOSE OF MWMP

The purpose of the MWMP is to manage the potential adverse effects on marine mammals and birds by the Project as a result of the construction or the dredging and disposal of approximately 3.2 Mm³ of material associated with the Project.

The MWMP has been prepared to set out management responses in relation to marine mammals and birds.

The only marine mammal species commonly sighted in the vicinity of the project area are:

- New Zealand Fur Seal (*Arctocephalus forsteri*)

Other marine mammal species identified to reside or regularly visit the coastal waters of Hawke Bay are:

- Common Dolphins (*Delphinus delphis/capensis*)
- Orca – Killer Whales (*Orcinus orca*)
- Southern Right Whales (*Eubalaena australis*)
- Pygmy Sperm Whale (*Kogia breviceps*)

- Pilot Whales (*Globicephala melas*)
- Other whale species include various beaked whales, humpback and sperm whales.

Bird species sighted in the vicinity of the project area are:

- Blue penguin (Kororā)
- Black-Billed Gulls (Tarapunga)
- White Fronted Tern (tara)
- Shag Species (a range of shags (up to five) may use the Port for roosting and foraging.

1.5 OBJECTIVES

The objectives of this Plan are to:

- Minimise any potential for adverse effects on marine mammals and birds to the greatest extent from dredging activities.
- Minimise the risk of adverse effects on marine mammals and birds to the greatest extent practicable from construction activities.

Figure 1 shows the dredge footprint for all stages of the Project. *Figure 2* shows the offshore disposal area for the Project.

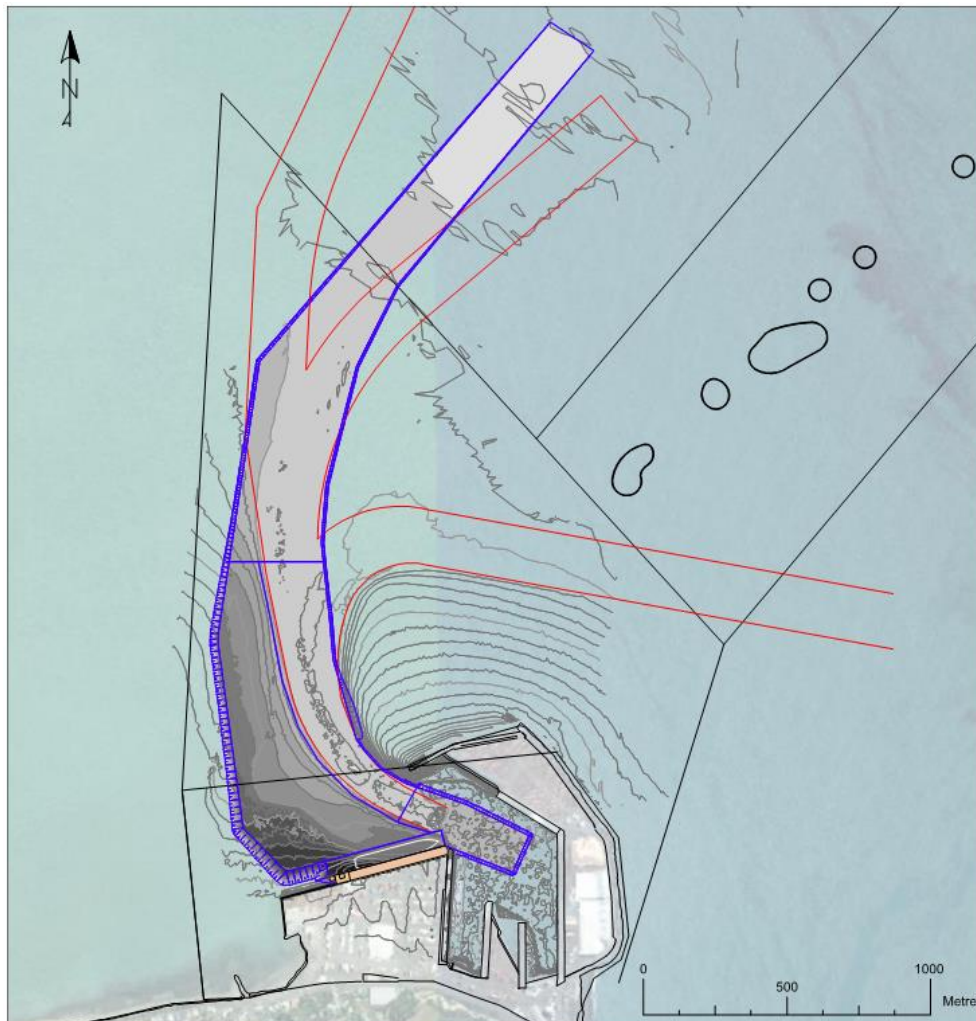


Figure 1 - Project Location

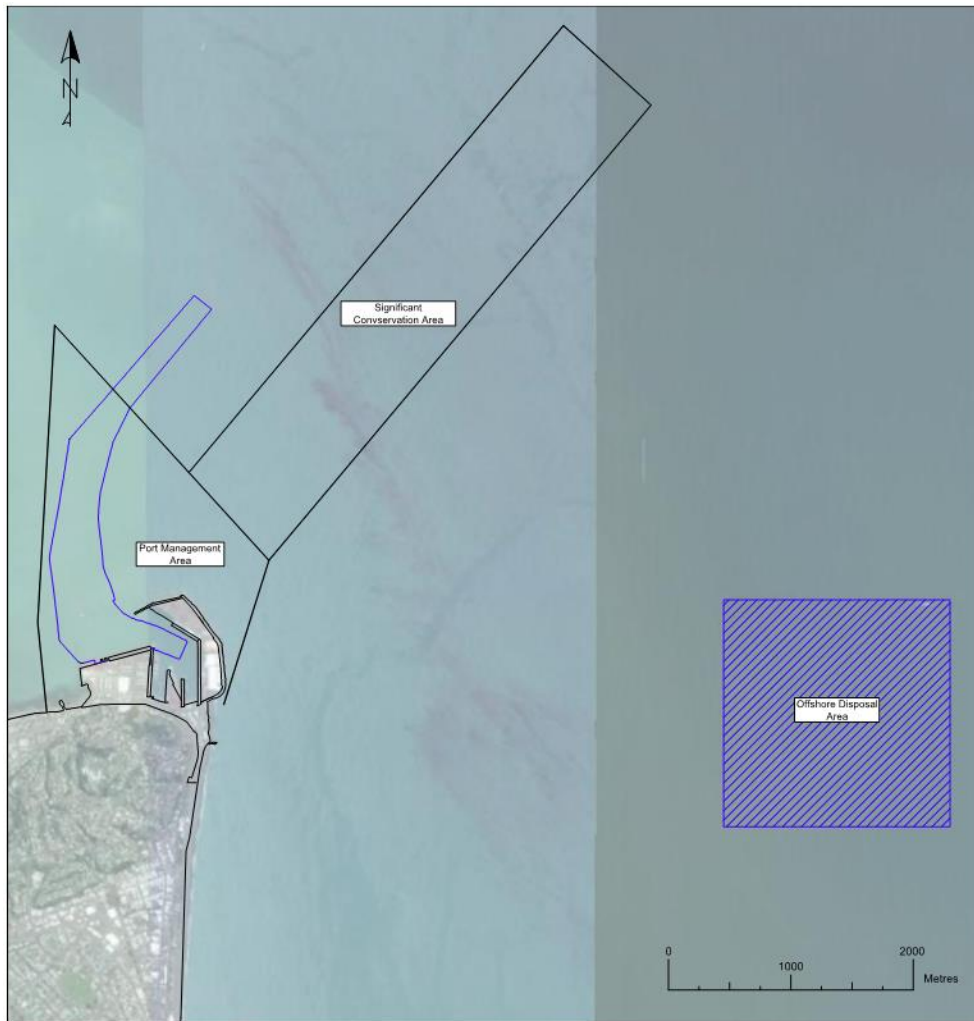


Figure 2 Offshore Disposal Area

1.6 CONSENT CL180008C CONDITIONS

The purpose of this plan is to satisfy Condition 8 of Consent CL180008C by specifying the following:

- a) Responsibilities for observation and monitoring of marine mammals,
- b) Advisory practices, such as maximum vessel speeds,
- c) Responsibilities for liaison with the Department of Conservation over the Project period,
- d) Responsibilities for recording and reporting types of and frequencies of any marine mammal sightings during any Project activity, including transiting to or from the dredge material disposal site,
- e) Measures to minimise underwater noise from construction and dredging activities,
- f) Monitoring within designated safety zones, including the use of trained marine mammal observers, during and immediately following pile driving activities (during daylight hours only),
- g) Application of soft-start procedures and other noise dampening techniques,
- h) Methods of avoiding entanglement,
- i) Methods to ensure records of all entanglement incidents (regardless of outcome) are provided to the Department of Conservation,
- j) A description of the lighting being used, including any methods to reduce potential for bird strike.

2 MANA WHENUA ENGAGEMENT

A partnership with mana whenua hapū was formed during the consent application process. Engaging and fostering of this relationship resulted in a series of hui-a- hapū.

A cultural impact assessment report capturing the aspirations of mana whenua hapū was developed, along with the desire for cultural monitoring and information sharing.

The Napier Port, Pou Tikanga – Environmental and Cultural Advisor has established a mana whenua based committee as a part of the Marine Cultural Health Programme. The Advisor will be working in partnership with the mana whenua committee having specific regard to the environmental and cultural aspects of the 6 Wharf Project, including the Marine Wildlife Management Plan.

A summary of the Marine Wildlife Management Plan will be provided at the next Marine Cultural Health Programme hui.

- Where practicable, a Mana Whenua Steering Komiti member/s or selected mana whenua hapū representative/s will assist as an observer/kaitiaki with observing and monitoring that is associated with this plan.
- The committee to provide input into the annual reviews of the MWMP

3 ROLES AND RESPONSIBILITIES

Table 1, summaries Napier Port's key project staff and contact details for each. The project manager is ultimately responsible for implementing this MWMP.

It is the responsibility of Napier Port to ensure that the contractor understands and can implement the requirements of this MWMP. The Contractor is responsible for training their staff and ensuring that they understand and are able to implement the requirements of the plan.

Table 1. Summary of key contacts, roles and responsibilities

Name	Role/Responsibility	Organisation	Contact Details
Michel de Vos	Project Director	Napier Port	michelv@napierport.co.nz 027 5303325
Chip Pohlen	Project Manager	Napier Port	chrisp@napierport.co.nz 027 8392619
Paul Rose	Environmental Advisor	Napier Port	paulr@napierport.co.nz 027 564 0822
Te Kaha Hawaikirangi	Environmental & Cultural Advisor	Napier Port	tekahah@napierport.co.nz 021 0632840

4 UNDERWATER NOISE

The underwater noise produced by the project will be characterised in the early stages of construction. The purpose of characterising the noise is to put in place appropriate measures to, as far as practicable, reduce the potential effects of underwater noise. Acoustic monitoring shall be undertaken as soon as practicable to confirm the actual noise levels associated with the project.

Underwater noise is generated by vessel movement, and will increase in the vicinity during the dredging campaigns. Wharf construction, and particularly pile driving involved will, over the approximately 18 -24 month construction period, introduce new types of broad-band -frequency sounds directly into the marine environment. Both types of noise have the ability to affect marine mammals behaviour and in some circumstances can cause harm to hearing of mammals.

4.1 DREDGE NOISE

Generally, the noises produced from dredging activities are continuous, broad-band sounds mostly below 1kHz. Dredges produce relatively lower sound levels than a large ship. However, the two differ in that a dredge may be actively operating within one general area for long periods of time (weeks or months) while a ship rarely remains in the same area for long (minutes or hours). The associated noise characteristics of dredging activities can also vary depending on the type of dredge, operational stage, and ambient conditions.

The Cawthron report found that TSHD and BHD, the two dredge types to be used for this project, produce mostly low frequency, omni-directional sounds between 100-500Hz. However, their bandwidths could fluctuate as low as 20Hz and as high as 20kHz. The exact ranges are dependent on the process and the types of sediment being extracted, with coarser gravel causing greater sound levels, (which the project is not expected to encounter).

4.2 PILE DRIVING NOISE

Pile-driving has been found to be one of the 'noisiest' of all construction sounds as it generates a very high source level as broadband impulses of underwater sound. Pile-driving has the highest potential to disrupt marine mammal behaviour at many kilometres distance, and could theoretically induce hearing impairment at closer ranges. However, there has been little detailed investigation and different species appear to respond differently. The proposed berth construction activities will involve the driving of approximately 350 steel pile casings over a period of months within the 18 to 24 month construction period. Marshall Day used 3D underwater noise modelling software to establish spatial envelopes for sound levels from the piling operation for the Napier coastal area. From these modelling outputs, specific zones of influence were generated using the NOAA Guidelines. While pile-driving has the potential to injure the hearing of any mammals within close range the distances provided by Marshall Day for the hearing loss from cumulative 24 hour exposure

was between 20 and 580 m. As this risk is largely within the Port itself, and given the limited number of mammals observed in this immediate area, there should be no more than a low risk of injury.

The behavioural disturbance threshold associated with impulse sounds, such as pile driving, is given as 160dB. Applying this to the acoustic modelling results, Marshall Day concluded that any behavioural response by marine mammals will be limited to animals within 2.25km from the source. The principal response of relevant species is likely to be abandonment / avoidance of the affected area.

Vibro-hammer will now be used for the project. A vibro-hammer is to be used for first instance and if this fails, then an impact hammer will be used to drive the casing to the required depth. When the impact hammer/vibro hammer is to be utilised then a soft-start procedure will be implemented (see section 4.2 for procedures).

Overall, the underwater noise effects from piling activities are considered to be manageable provided the mitigation measures outlined in this management plan are adhered to.

4.3 SPECIES SENSITIVITY

The lower frequency vocalisation ranges of southern right whales suggest their best hearing capabilities are at least between 50Hz and 2 kHz, and 20 Hz to 12kHz for humpbacks, while the functional hearing of baleen whales in general is thought to be between 7Hz and 22kHz. These frequency ranges directly overlap with most anthropogenic underwater noise, including dredging and pile driving activities, meaning baleen whales are the species most susceptible to these effects.

Dredging

There is a moderate likelihood of any migrating baleen whales being able to detect or hear underwater noise produced by dredging activity, depending on their proximity to the Port. However, dredging source sound levels are similar to the majority of vessels currently travelling to and from the Port; hence the consequences of hearing dredge noise are expected to be only minor with the strongest responses resulting in short-term masking of some whales' communication calls and possibly temporary avoidance of the area by whales with calves during their migration past the bay.

This conclusion is based on:

- mainly lower-frequency noise are expected to be generated by dredging vessels, and these would be detectable by whales up to at least several kilometres, if not more;
- only a few whales occur in Hawke Bay restricted mainly to winter and some spring months; most only remain for a few days while southern right whales may stay for a few weeks; most pass by in deeper water (beyond 100m);
- whales known to come to Hawke Bay are regularly exposed to similar noise levels in some other parts of their distributional range; and
- dredging sound levels are not expected to exceed any permanent injury threshold criteria, while whales' short-term visits (i.e. days to weeks) ensure that any exposure effects will be low to not applicable.

Odontocetes (e.g. orca and dolphins) generally communicate at higher frequency ranges than baleen whales and have the capability to echolocate (produce biological sonar) for navigation and hunting.

While most dolphins' functional hearing range is estimated to be quite large, and they can likely detect low-frequency sounds, their sensitivity significantly decreases at frequencies below 1-2 kHz (Clement, 2016). Pinnipeds' hearing ranges are thought to vary more widely, including some ultrasonic frequencies, and are quite sensitive to frequencies below 1 kHz (based on grey and harbour seals). However, a study of New Zealand fur seals in Western Australia reported no disturbance reactions to dredging taking place close to haul-out sites.

The noise from dredging and disposal operations is expected to have a de minimis effect on local or visiting odontocete and pinniped species. If any effects do occur, they are expected to result from the increase in activity as much as from underwater noise, which may lead to temporary avoidance or even attraction to the activity area. This conclusion is based on:

- that the increase in underwater noise will be temporary due to the limited duration of dredging activities (although of longer duration than that due to shipping traffic and the current level of maintenance dredging activities);
- most odontocetes and pinniped species frequenting Hawke Bay are exposed to similar noise levels in some other parts of their distributional range;
- New Zealand fur seals' continued year-round occupancy of nearby haul-out sites and occasional presence on the Port breakwater structure (despite on-going maintenance dredging taking place over the last several decades);
- differences in functional frequencies ranges between species' hearing sensitivities and the lower frequency sounds produced by dredge activities;
- extremely close proximity to dredge vessels would be necessary for any other exposure effects to be felt (and most visits are transient); and
- Hawke Bay waters are not considered to be unique or particularly important feeding, resting or nursery habitats for the species.

Pile driving

Pile-driving has been found to be one of the 'noisiest' of all construction sounds as it generates a very high source level as broadband impulses of underwater sound. Pile-driving has the highest potential to disrupt marine mammal behaviour at many kilometres distance, and could theoretically induce hearing impairment at closer ranges. However, there has been little detailed investigation and different species appear to respond differently. It is clear that some species can be affected and some take avoidance action at 15km distance (e.g. porpoise species).

It is predicted that Permanent Threshold Shift (PTS) would not be caused by a single impact, however driving of impact driven steel piles have the potential to result in PTS from cumulative exposure at underwater receiver distances of up to approximately 580m for low-frequency marine mammals such as baleen whales and less than 20m for mid-frequency marine mammals such as dolphins, orca, and pinnipeds such as fur seals. It is noted that the cumulative exposure is based on the species being present within these distances for a 24 hour period. The PTS cumulative exposure distances would decrease if the species is in the area for a shorter time period.

Marshall Day provided recommendations for several mitigation measures to ensure that any potential effects are minimised. These include steps (see *section 4.4* below) that can be taken during the piling operation and will substantially reduce the area of potential risk of hearing damage or avoidance behaviour.

4.4 CONTROLS TO MINIMISE THE EFFECT OF UNDERWATER NOISE

Dredge plant shall ensure that all noise suppressions equipment, such as mufflers and ventilation baffles shall be maintained in good working order, and where practical plan for maintenance activities that may generate noise to daylight hours.

Specific measures to control the impacts of underwater noise from dredging and pile driving on marine mammals cannot be finalised until the actual underwater noise levels are determined. Underwater noise will be measured at the beginning of the project to confirm predicted levels and update any safety zones as required. Notwithstanding this adaptive management approach, there are general measures which will be implemented to minimise noise effects.

Vibro-hammer technique are to be used for first instance and if this fails, then an impact hammer will be used to drive the casing to the required depth. Impact pile driving was modelled during the resource consent application documentation as a worst case scenario.

The management of piling in particular to mitigate potential noise effects will involve active management as part of the construction management plan. The rationale for the additional mitigation relates to the New Zealand Coastal Policy Statement's Policy 11 requirement to avoid, remedy or mitigate all adverse effects on at risk species, and on habitats and areas important for migratory species.

The key mitigation actions are briefly described below with some additional considerations:

- Verification of actual noise levels from dredging and pile driving activities by measuring the associated underwater noise of these activities during the early stages of the project.
- Consider techniques for both pile driving and dredging in relation to noise levels and where practicable, choose the least noisy.
- Apply soft-start/ramp-up procedures in which the pile-driving slowly increases the energy of the emitted sound, giving any animals in the area time to move a safe distance away.
- Establish a safety zone that involves a dedicated observer scanning a defined radius of the water's surface and coastal shoreline around the construction area for the presence of fur seals, dolphins or whales prior to commencement of pile-driving activities. If present, ramp-up procedures for pile driving should only commence once any animals spotted have moved out of the zone. Cease piling operations if animals enter the zone. The size of the zone will be dependent on the technique used for pile driving (vibro-driving vs impact driving) and any mitigation devices used, such as plastic or plywood dolly/cushion head.

5 MARINE MAMMAL OBSERVERS

5.1 DREDGING ACTIVITIES

To ensure vessel crew are aware of the risks and controls to be implemented during the project, all crew will attend a Marine Mammal Observation (MMO) toolbox talk. Attendance sheets are to be completed.

Reminders and updates will be provided in toolboxes throughout the project.

It is the responsibility of the Dredge Master and/or crew member to record and report types of and frequencies of any marine mammal (see section 1.4) sightings during the project activity, including transiting to or from the ODA. The observations are to be recorded on the MMO Record sheet (see *Appendix 1*)

Marine mammal sightings will be logged and reported to DOC on a quarterly basis.

5.2 PILING ACTIVITIES

5.2.1 DESIGNATED OBSERVER FOR PILING

Many of the control measures outlined below are triggered by sightings of a marine mammal. A key part of the control measure is having trained Marine Mammal Observer/s (MMO) during daylight hours. The observer(s) will be trained by a suitably qualified Marine Mammal expert, with additional guidance by Napier Port's Environmental Advisor/s.

Training may include:

- Types of marine mammals likely to be present in the area and how to identify them
- Search and scanning protocol and methods to be used
- Marine mammal behaviours
- Requirements of the relevant consent conditions
- Measures to be taken if marine mammals are sighted
- Reporting requirements
- Health and safety requirements specific to undertaking the observations

Designated observers are responsible for the observation and monitoring of marine mammals. Marine mammal sightings will be logged and reported to DOC on a quarterly basis.

5.2.2 MONITORING WITHIN DESIGNATED SAFETY ZONES

Underwater noise levels have been predicted for impact driven steel piles. Designated safety zones will be applied with reference to Marshall Day Acoustics modelling and any subsequent amendments to these zones based on *in situ* noise measurements at the beginning of the construction.

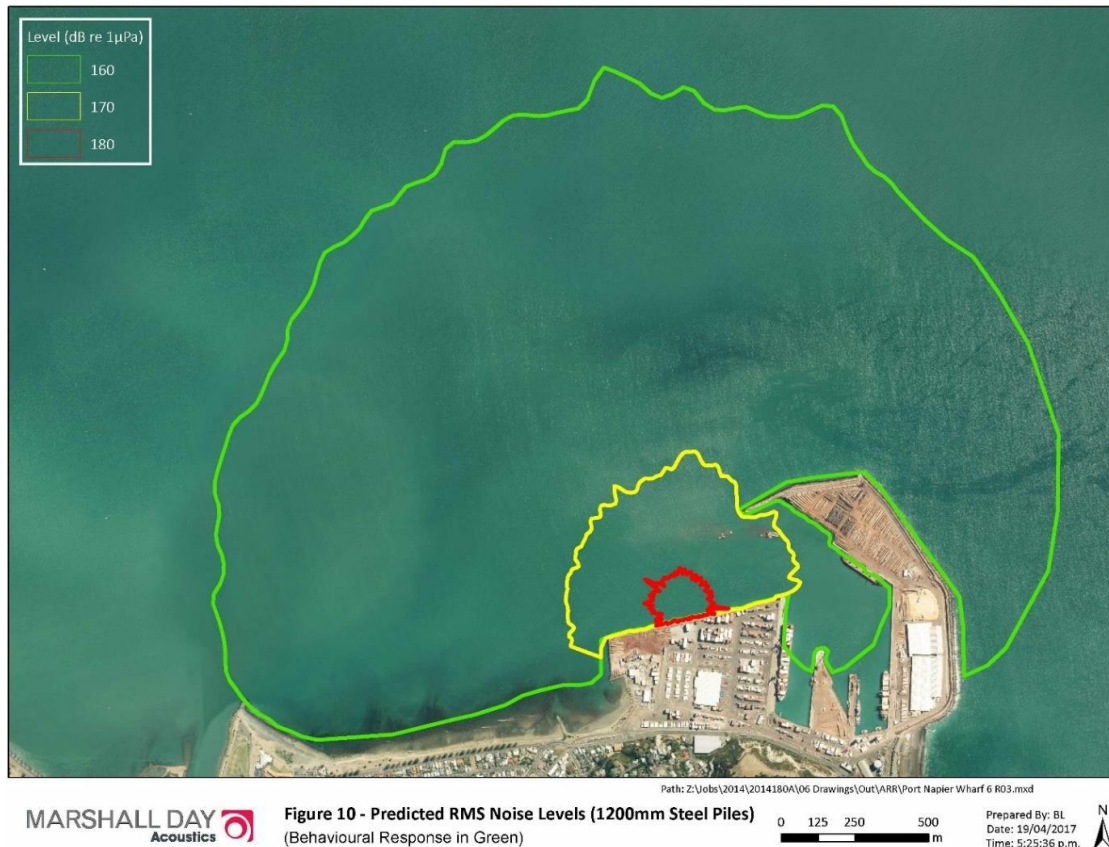


Figure 3: Illustrates the RMS noise contours for 1200mm impact driven piles (worst case). Note these zones may be amended based on in situ noise validation monitoring at the beginning of the project.

Table 2. Marine Mammal Observer summary of zones

Zone	Colour (see Figure 3)	Distance
Observation Zone	Green	2,250m
Mitigation Zone	Yellow	580m
Shutdown Zone	Red	20m

5.2.3 PRE-START PROCEDURE

Potential marine mammal presence should be monitored by the MMO(s) for at least 30 minutes before the commencement of pile driving/vibro hammer procedure – with a focus on the mitigation zone and area immediately adjacent.

5.2.4 SOFT START PROCEDURE

If marine mammals have not been sighted within or are unlikely to enter the mitigation zone during the pre-start procedure, the soft start procedure may commence in which the piling impact energy is gradually increased over a 10 minute time period. The soft start procedure should also be used after long breaks of more than 30 minutes in piling activity and visual observations have ceased.

5.2.5 STAND-BY PROCEDURE

If a marine mammal is sighted within the observation zone during the soft-start or normal piling activities, the operator of the piling rig should be placed on stand-by ready to shut down the piling rig should they enter the Yellow or Red zone.

5.2.6 SHUT DOWN PROCEDURE

If a marine mammal is sighted within or about to enter the shutdown zone, the piling activity should be stopped immediately. If a shutdown procedure occurred and marine mammals have been observed to move outside the mitigation zone, or 30 minutes have lapsed since the last marine mammal sighting, then piling activities should recommence using the soft-start procedure. If marine mammals are detected in the observation zone and poor visibility sets in, operations should switch to poor visibility procedures.

5.2.7 POOR VISIBILITY PROCEDURE

Poor visibility is defined as sea fog (on the water surface) winds greater than 30 knots and /or rain or sun that obstructs more than 50% of the Marine Mammal Observation Zone (MMOZ). If any of these conditions occur to an extent that it makes it difficult for the MMO to visually inspect the MMOZ for marine mammals, then piling activities should be postponed until conditions improve.

6 VESSEL STRIKE

Normally marine mammals will move out of the way of slow vessels. Slow moving marine mammals that regularly swim at the water surface are more at risk of vessel strike. Dolphins and seals are far less likely to get struck by a vessel, though young calves are more vulnerable due to their naivety, inquisitiveness and relatively poor swimming ability. During all phases of the project, the general principle guiding vessel operations will be to avoid, as far as practicable, any interaction with marine mammals. To achieve this, a number of operational control procedures for vessels shall be implemented.

6.1 VESSEL INTERACTION WITH MAMMALS

The Marine Mammals Protection Regulations 1992 list the conditions governing behaviour around marine mammals. All seals, sea lions, dolphins and whales are protected under the Marine Mammals Protection Act 1978. It's an offence to harass, disturb, injure or kill marine mammals. Vessels in the vicinity of a marine mammal will (with the exception of emergency situations) adhere to the following.

- Record any sightings;
- Approach whales and dolphins from behind and to the side as shown in *Figure 4 and Figure 5*;
- Do not circle them, obstruct their path or cut through any group;
- Keep at least 50 m from whales (or 200 m from any large whale mother and calf or calves)
- Do not encourage bow riding by marine mammals Should any marine mammal(s) commence bow riding in front of a vessel, the vessel master will not change course or speed suddenly;
- Ensure that you travel no faster than idle or 'no wake' speed within 300 m of any marine mammal;

- Idle slowly away. Speed may be gradually increased to out-distance dolphins and should not exceed 10 knots within 300 m of any dolphin.

When operating a stationary or slow-moving dredge (e.g. back-hoe dredge), a 500m safety zone will be enforced around the dredging unit. If marine mammals are observed within the 500m 'safety zone', any non-essential movement of auxiliary vessels will be prohibited. The speed of any vessels already moving within the safety zone shall be reduced to no wake speed, and avoid the path of the sighted mammal(s), until the mammal(s) have moved away.

It should be noted, that in confined waters, such as areas within breakwaters, there may be occasions where it may not be possible for vessels to maintain the approach angles or distances without compromising the safety of the vessel and its crew. If such situations should arise, all efforts will be made to minimise vessel interactions with, or disturbance to, marine mammals. If the dredge is approached by an inquisitive southern right whale or juvenile humpback then the dredging should cease until the mammal departs (> 50metres away)

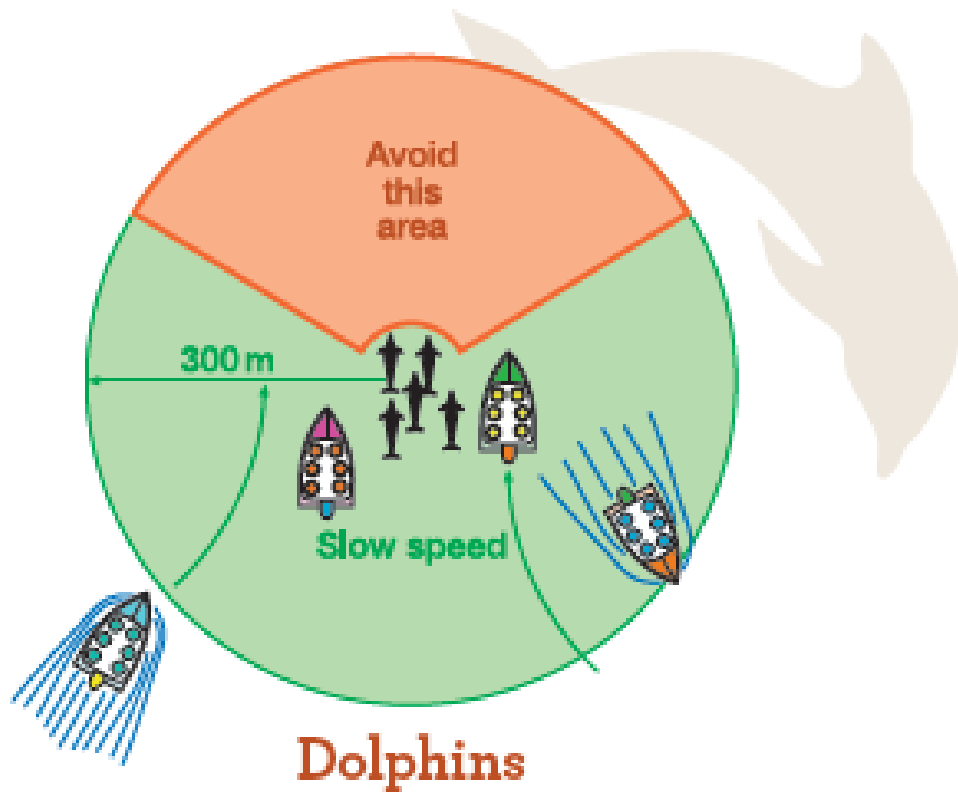


Figure 4: Interaction restrictions for marine vessels encountering smaller marine megafauna, such as dolphins and seals

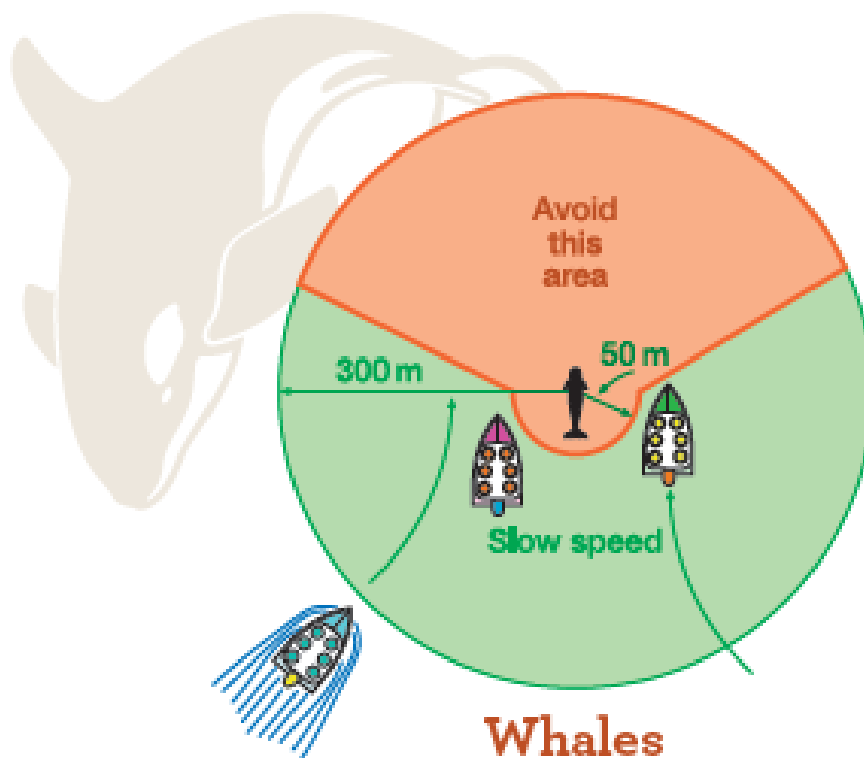


Figure 5: Interaction restrictions for marine vessels encountering large marine mega fauna, such as whales

7 MARINE DEBRIS AND ENTANGLEMENT

Marine debris may include lost ropes, support buoys, bags, plastic and other marine debris. These objects often tend to float and persist rather than degrade quickly. Marine mammals and seabirds are attracted to floating debris and risk becoming entangled, particularly in floating lines and netting. The nature of dredging operating activities means that the risk of entanglement in marine debris is low.

Records of all entanglement incidents (regardless of outcome) are to be provided to the Department of Conservation (See *table 4* for timeframes).

7.1 CONTROL MEASURES TO MINIMISE ENTANGLEMENT

The risk of entanglement from the project is minimised further as far as practicable by the following:

- The dredge and its operation doesn't use any fine lines and netting.
- Dredge operations activities do not involve debris being placed in the water;
- Waste management programme will be implemented throughout the project;
- Debris are to be removed if any are found in the project area or marine environment that may cause entanglement.

8 LIGHTING

In the case of vessels, it is generally well known that nocturnal bird strikes tend to occur when bright, artificial light sources are used at times of poor visibility, typically during bad weather, often angled outwards or upwards from the vessel and when the vessel is relatively close to large breeding aggregations of seabirds (rather than further offshore).

The project will as far as practicable manage lighting to reduce the potential of bird strike.

Methods to reduce the potential for bird strike include but not limited to:

- Inward facing lighting
- Shielding
- Minimising lighting (within safety constraints)

9 DEPARTMENT OF CONSERVATION LIAISON AND REPORTING

A two-way liaison with the Department of Conservation shall be established at the beginning of the project for the reporting of marine mammal sighting data throughout the project.

The Department of Conservation shall be contacted quarterly for observations sheets (unless otherwise notified for incidents) over the project period to provide sighting information. The information shall be collated by Napier Port. (See *table 4* for timeframes)

Table 3: Contact details

Name	Role/Responsibility	Organisation	Contact Details
		Department of Conservation	
Paul Rose	Environmental Advisor	Napier Port	paulr@napierport.co.nz 027 564 0822
Te Kaha Hawaikirangi	Environmental & Cultural Advisor	Napier Port	tekahah@napierport.co.nz 021 0632840

9.1 REPORTING OF INCIDENTS INVOLVING INJURY OR MORTALITY

Incidents involving the injury or mortality of a marine mammal shall be reported to the Department of Conservation contact person as soon as practicable but not more than 24hrs. In the case of a fatality, Tangata Whenua's representative shall also be notified within 24hrs of the incident occurring.

Incident details shall include as much information as possible relating to the incident (i.e. date, time, weather conditions, visibility, sea conditions, vessel location, speed, activity etc.) Additional information of the marine mammals (i.e. species, numbers) and their behaviour before, during and after the event shall also be recorded. If practicable video or pictures could be taken. Information will be used to inform how future incidents could be avoided.

Any incident that results in marine mammal injury or fatality will be documented. (See *table 4* for timeframes)

9.2 PROJECT REPORTING

Table 4: Reporting summary

Information	Timeframes
Incidents involving injury or mortality	Within 24 hours
Incidents involving Entanglement	Within 24 hours
Marine mammal observer sheets to be provided to Napier Port – Environmental Advisor	Weekly
Providing marine mammal observer sheets summary to DOC	Quarterly
Nosie Verification data	Provide relevant reports to DOC within 10 working days of providing to HBRC

APPENDIX 1

(DRAFT) MARINE MAMMAL OBSERVATION RECORD SHEET FOR DREDGE

6Wharf - Dredge Marine Mammals Observation Record Sheet

Marine Mammal Observer	
Position	
Date and Time of Observation	
Location	
Weather and Sea state	

What species of marine mammal was sighted	
At what stage of dredging operations was the mammal sighted. (e.g. Start-up, dredging. To/from disposal site, disposal	
Speed of Vessel	
At what approximate distance is the marine mammal visible	
Bearing (in degrees) and distance from the vessel	
Direction in which the mammal is travelling	
If the marine mammal is present while the dredge operation changes, what is the reaction (e.g. does it immediately leave, does it leave and return, does it stay?)	
Short description of the mammal and their behaviour	
Mitigation action taken, if any	

General Comments:

Photos

APPENDIX 2

(DRAFT) MARINE MAMMAL OBSERVATION RECORD SHEET FOR PILING



6Wharf – Piling Marine Mammals Observation Record Sheet

Marine Mammal Observer (name)	
Location	
MMO watch start/end times	

Note: Start a new line for each new start-up of pile driver. Record all watches even if non marine mammals are seen

Date / Time	Pile Number(s)	Pre-start		Soft Start		Normal Operations		Post Observation	
		MMO initials	Mammals Sighted?	MMO initials	Mammals Sighted?	MMO initials	Mammals Sighted?	MMO initials	Mammals Sighted?