



enviser

Marine Mammal Management Plan

**ITM New Zealand Sail Grand Prix
Season 4 Event**

EnviserRef: 1210

Final Working Version

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Liability

Enviser Ltd has authored this Marine Mammal Management Plan (MMMP) to reduce the risks to marine mammals during the SailGP Lyttelton event. It is important to note that this plan uses a range of methods to reduce risks but does not entirely eliminate all risks. The authors of this report, or the Independent Decision Maker implementing this plan, will in no way be liable for any incident occurring with a Upokohue/Hector's dolphin or marine mammal resulting from the SailGP event activity.

SailGP will undertake the event strictly in compliance with the MMMP and SailGP must comply with the relevant New Zealand marine mammal protection legislation. In the event of non-compliance with the MMMP by SailGP, SailGP and ChristchurchNZ shall immediately discuss in good faith the consequences of any non-compliance with a view to SailGP taking steps to deal with such breach (if possible) as soon as practicable.

This MMMP is a live document. It will be reviewed and revised, as required, in the lead-up to the SailGP Grand Prix 2024 event. A final 'Event Version' must be produced the day before the first day of on-water activities (currently programmed to start on Thursday 21st of March).

Mātauraka (Knowledge) Statement Intellectual Property

The cultural content provided by Te Hapū o Ngāti Wheke, Rāpaki including interpretations within this document may not be used for any other purpose than for the content of this publication, without the express permission of the Te Hapū o Ngāti Wheke, Executive Komiti.

The Mātauraka herein has been provided on this basis.

Acknowledgment

This Operational MMMP represents an updated operational version of the Marine Mammal Management Plan implemented for the 2023 event. Enviser Ltd prepared this plan with valuable input and assistance from Te Hapū o Ngāti Wheke, Rāpaki, the Department of Conservation, SailGP and ChristchurchNZ.

1 Purpose of this operational Marine Mammal Management Plan

The purpose of this operational Marine Mammal Management Plan (MMMP) is to protect the Upokohue/Hector's dolphins (and other protected marine mammals) during the running of the SailGP event and comply with the relevant Marine Mammal Protection legislation. This plan is an updated and more operationally focused version of the MMMP implemented for the 2023 event. As an operational plan, elements of the 2023 MMMP have not been included in the body of the MMMP, but are appended as **Appendix A**.

Specifically, the following sections are included in Appendix A:

- Cultural Importance of Upokohue/Hector's dolphins
- Tipuna Whare, Wheke
- Description of the Environment
- Risk identification

The content provided by Te Hapū o Ngāti Wheke, Rāpaki is identified with blue shading.

2 Objectives

The objectives of this plan are to:

- Enable Te Hapū o Ngāti Wheke to exercise its role as kaitiaki of Whakaraupō/Lyttleton Harbour.
- Set out the roles and responsibilities of the people involved in implementing this plan.
- Detail the controls to avoid SailGP vessels (F50s and support vessels) striking a Upokohue/Hector's dolphin and the procedures to implement those controls.
- Provide procedures to ensure the event complies with the Marine Mammal Protection Act 1978 (MMPA) and Marine Mammals Protection Regulations 1992 (MMPR).
- Set out the communication pathways and decision points.
- Set out the incident response procedures.

3 Roles and responsibilities

Table 1 summarises key event staff who will be involved in implementing the MMMP, their contact details, and their role in implementing the MMMP. SailGP has overall responsibility for implementing this MMMP. It is the responsibility of SailGP to ensure that all employees, volunteers and subcontractors involved in or associated with on-water activities, or who are involved in the implementation of this MMMP, understand and implement the requirements of this MMMP.

It is the responsibility of all persons involved in marine mammal management and on-water activities to ensure they understand and comply with the relevant New Zealand marine mammal protection legislation. Failure to comply may result in prosecution.

Table 1: Summary of key contacts, roles, and responsibilities for the MMMP implementation

Company/ Organisation	Name	Role	Contact details	Location during event
██████	██████████	██████████	████	██████████
██████	██████████	██████████	████	██████████ ██████
██████	██████████	██████████ ██████	████	██████████ ██████
██████	██████████	██████████ ██████████	██████████	██████
Te Hapū o Ngāti Wheke	Yvette Couch-Lewis	Ruahine/Taua	UHF	Event Control Room
Department of Conservation	Andy Thompson	DOC contact person	██████████	Event Control Room
Department of Conservation	Graeme Scott	DOC compliance	██████████	Event Control Room
Enviser	Jared Pettersson	MMMP Facilitator and independent decision maker	UHF	Event Control Room
-	Simon Childerhouse	HDO Manager	UHF	On water
██████	██████████	MMMP volunteer organiser	██████████	Event village
Christchurch NZ	Karena Finnie	Head of Major Events	██████████	Event village
Environment Canterbury	Harbourmaster	Harbourmaster	██████████ ██████████	Event Control Room

Whilst all parties involved have a responsibility to protect the environmental values of Whakaraupō, SailGP is responsible for the operational implementation of this MMMP. The Hector's Dolphin Observer (HDO) Manager and the MMMP Facilitator are responsible for initiating, based on information from the Hector's Dolphin Observers (HDOs), the marine mammal protection measures set out in this MMMP.

The HDO Manager will coordinate all land-based and on-water observers and convey the sighting information to the MMMP Facilitator¹. The MMMP facilitator will assist the HDO Manager and convey relevant dolphin sighting information to the Event Control Room Manager as well as to the DOC and Te Hapū o Ngāti Wheke representatives in the control room.

If a dolphin is sighted in the shutdown zone, the MMMP facilitator will instruct the Event Control Room Manager to stop racing, or delay the start of racing as required by the procedures set out in this MMMP.

The Event Control Room Manager must act upon the instructions of the MMMP Facilitator and immediately inform Race Management to stop or delay racing if told to do so.

¹ Note that as communications are via UHF, the MMMP Facilitator hears all communications between the HDO Manager and the HDOs.

Failure to immediately act on the instruction of the MMMP Facilitator to stop or delay racing could result in a breach of the marine mammal protection legislation, obstruction charges, and may result in legal action by DOC.

3.1 Lines of communication

Due to the time-critical nature of decision-making during a race (or during training/practice racing), clear lines of communication must be established and followed.

For the MMMP implementation, the lines of communication are:

- HDO Manager reports marine mammal sightings to the MMMP Facilitator
- MMMP Facilitator issues stop racing/delay racing instructions to the Event Control Room Manager
- The Event Control Room Manager issues instructions to Race Management
- Race Management to issue instructions to the F50 fleet

DOC and the Te Hapū o Ngāti Wheke Ruahine will be in the event control room and will provide advice to the MMMP facilitator. DOC, in its compliance capacity, may communicate directly with SailGP if necessary.

3.2 Te Hapū o Ngāti Wheke, Rāpaki roles

Te Hapū o Ngāti Wheke, Rāpaki hold mana whenua and mana moana (traditional authority), exercise rangatiratanga and kaitiakitanga over Whakaraupō/Lyttleton Harbour.

The points of contact enabling Mana whenua to exercise rangatiratanga are the Kaihautū and Ruahine who will assess, decide, and direct on all matters.

In the event of an incident, the Kaihautū from Te Hapū o Ngāti Wheke, Rāpaki will lead the incident response² and is responsible for ensuring the appropriate tikanga is followed. All directions from the Kaihautū must be adhered to.

The Ruahine has the role of upholding the kaitiakitanga of Te Hapū o Ngāti Wheke, Rāpaki through involvement in the implementation of this MMMP.

Te Hapū o Ngāti Wheke, Rāpaki have made the following appointments:

- To be advised – Kaihautū
- Yvette Couch-Lewis – Ruahine/Taua

Other roles to be selected by Kaihautū and Ruahine, as required.

3.3 MMMP Facilitator

The role of the MMMP Facilitator is to:

- Communicate with the on-water HDO Manager to receive information about marine mammal sightings and convey information about dolphin sightings in the Alert Zone and Shut Down Zones to the Event Control Room Manager

² Incidence Response Plan agreed for the 2023 event, not for public distribution due to sensitivity around the tikanga

- Using the information from the HDO Manager, determine the relative location of the sighted marine mammals to the shutdown zone.
- Act as the **Independent Decision Maker** and instruct the Event Control Room Manager when, in accordance with this MMMP, racing needs to be delayed or stopped due to the presence of a Upokohue/Hector's dolphin.
- Liaise with the Te Hapū o Ngāti Wheke and DOC representatives in the Event Control Room

The MMMP Facilitator will be in the Event Control Room and must have a direct line of communication with the Event Control Room Manager.

3.4 Hector's Dolphin Observer (HDO) Manager role (On-water)

The HDO Manager is a critical link in the communication chain between the land and boat observers and the Event Control Room. During on-water activities, the HDO Manager will be based on one of the four marine mammal observer vessels.

The HDO Manager will:

- Communicate with and coordinate all land-based and on-water observer sightings of marine mammals.
- Communicate with the MMMP Facilitator (who will, in turn, communicate with the Event Control Room Manager) prior to and throughout all on-water activities.
- Communicate with DOC and if an incident occurs

3.5 Resource requirements

Implementing the Plan requires the following:

- An independent MMMP Facilitator.
- A suitably experienced marine mammal expert to act as the HDO Manager.
- 11 suitably experienced Upokohue/Hector's Dolphin Observers (HDOs) (seven land-based, four boat-based).
- 12 trained volunteer observers (including 1 roving relief observer)
- Binoculars, tripods (if needed), and VHF radios for each observation station.
- A means of transportation to the observer locations, either by vehicle or boat.
- 4 dedicated vessels (suitable for HDO duties) to undertake on-water observations

4 Protection measures to avoid a vessel strike during sailing activities

The primary protection measures to prevent a vessel strike during on-water activities are:

- Pre-sailing activity surveys (**Section 4.1**) of the harbour to identify if Upokohue/Hector's dolphin are present and to enable tracking of any individuals/groups.
- A network of land-based and on-water observers (**Section 4.2**) to identify and track Upokohue/Hector's dolphin.
- A defined shutdown zone (**Section 4.3**) that contains all sailing activities and includes a 300m buffer to ensure an F50 does not operate at >5knts within 300m of a marine mammal.
- Procedures (**Section 5**) to require a shutdown of racing or a delay to the start of racing, if a Upokohue/Hector's dolphin has entered the Shutdown Zone.

Supporting protection measures are:

- Procedures for the operation of marine mammal observer vessels and other SailGP vessels (other than F50s) around Upokohue/Hector's dolphin (**Section 5.5**).
- Pre-event training of the MMOs and volunteers.
- Pre-event briefing of the SailGP on-water personnel (race crew and support vessels) on the MMMP and relevant regulations they need to comply with.
- Pre-event briefing of the Event Control Room Manager and Event Director on the MMMP and relevant legislation.
- Limiting the area of practice and training activities to the race course boundary.

The detailed procedures are set out in the following sections.

4.1 Pre-sailing activity harbour survey

To identify if marine mammals are in the harbour prior to the commencement of sailing activities, the following shall occur:

- Harbour survey along pre-planned zigzag transects by two HDO vessels in the period **1-2 hours** before sailing activities commence to determine the number and location of marine mammals. The surveys shall cover the Shutdown Zone and Alert Zone.
- If marine mammals are sighted, the nearest HDO boat will attend the sighting and track until the mammal is sighted leaving the Alert Zone to the east or the sighting is lost.
- Following completion of the on-water surveys (and any HDO transport duties), the four HDO boats (if not involved in tracking a sighted marine mammal) are to initially position themselves as noted in **Figure 1** to continue observations in the pre-sailing activities period.
- Boat sighting locations are to be reported to the HDO Manager and onward to all land-based observation stations to assist in the tracking of any marine mammals for as long as possible up to (and during) the start of sailing.

4.2 Location of marine mammal observers (land-based)

A total of seven land-based observer stations will be used for the 2024 event (yellow binocular icon in **Figure 1**). This modified observer arrangement is based on the 2023 MMMP, with adjustments based on learnings from the 2023 event.

Detailed information about each location, including access details will be provided to the HDO's prior to the event.

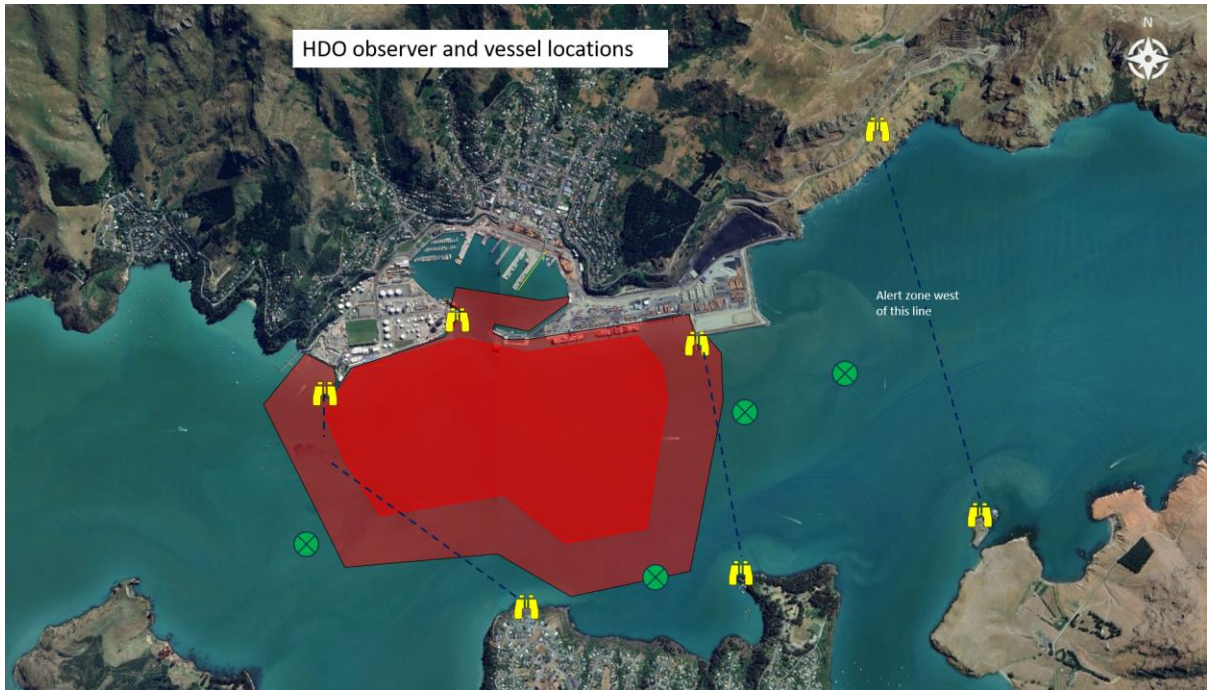


Figure 1 Location of HDO land-based observers (🔭) and vessel-based observers (⊗). The inner shaded red area is the race course, the outer red area is the extent of the shutdown zone

4.3 Zones

Two zones will be implemented for the 2024 event; a ‘**Shutdown Zone**’ and an ‘**Alert Zone**’. The actions that must be taken if marine mammals are sighted within these zones are set out in **Section 5** of this plan.

To avoid a situation where an F50 could strike a marine mammal, a Shutdown Zone (red area in **Figure 2**) will be implemented. The Shutdown Zone is the electronic course boundary PLUS a 300m buffer. This buffer is to provide an additional factor of safety and to prevent an F50 from being operated at speeds of >5knts within 300m of a marine mammal. Note that during the starting sequence of the race, the racecourse (and shutdown zone) includes a start box (**Figure 2**). Once the race has started, the racecourse boundary (and shutdown zone) is altered to exclude the start box area (**Figure 3**)

The electronic course boundary is dynamic and may change from day to day or within a race day depending on wind direction and speed. The Shutdown Zone (including the 300m buffer) will shift as the course boundary shifts. Race control may also shift the electronic course boundary in response to marine mammal sightings. The Shutdown Zone will be displayed on real-time race management software, YachtBot.

The Alert Zone comprises the area of the harbour to the west of the line between the two outermost (eastern) land-based observers (**Figure 1**).

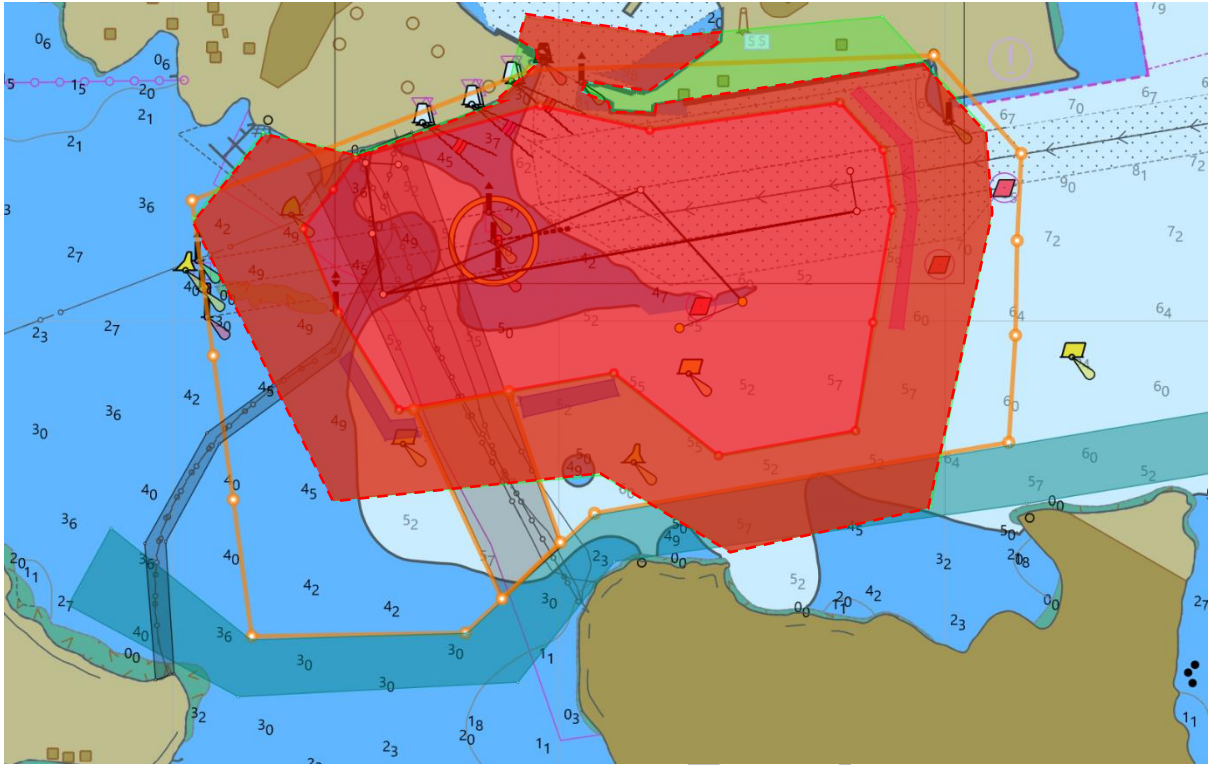


Figure 2 Example easterly racecourse (with start box) with shutdown zone shaded red.

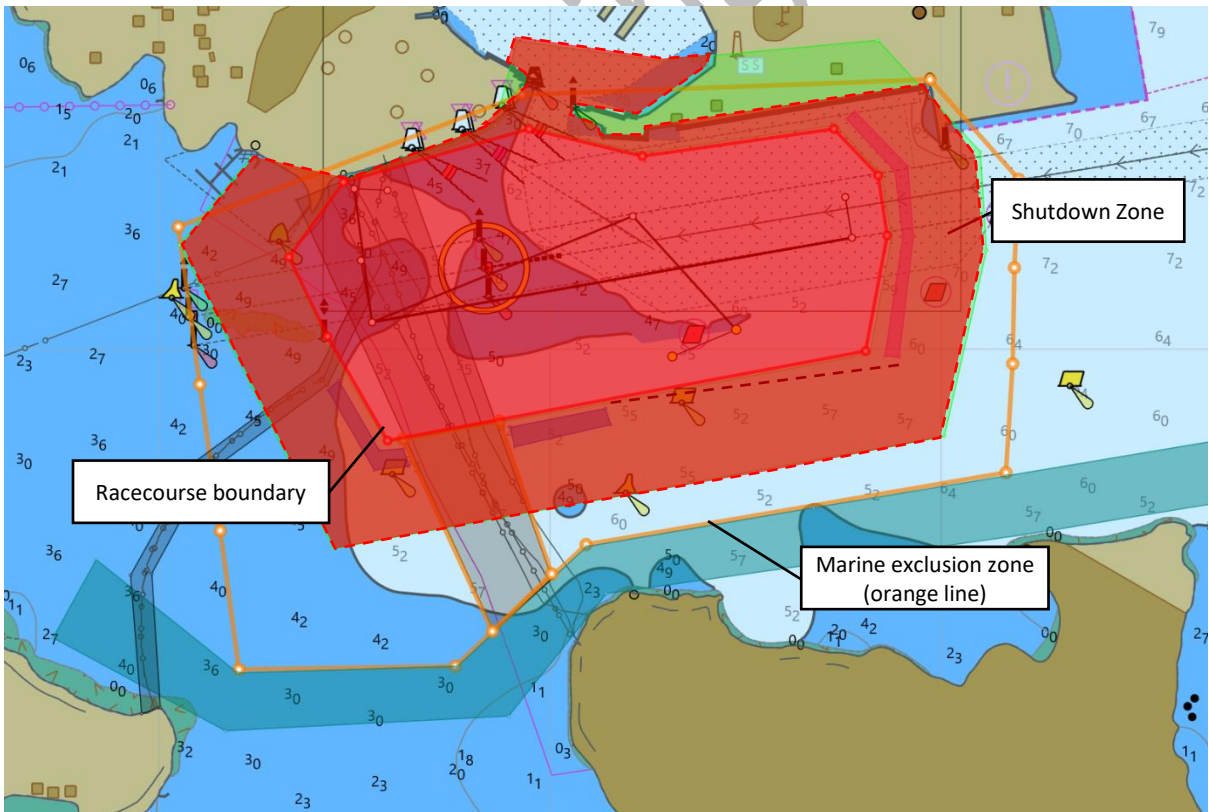


Figure 3 Example easterly racecourse (without start box). Note, the outer orange line is the maritime exclusion zone.

Appendix B includes figures showing example race courses for easterly and southerly-westerly conditions.

5 Procedures

This section details the procedures that must be followed to implement the marine mammal protection measures. The procedures are broken down into pre-sailing requirements (**Section 5.1**) and during-sailing requirements (**Section 5.2**). Sailing is defined as any time that one or more F50s are on the water actively sailing (either foiling or in displacement mode at >5knts). It does not include periods where the F50s are being launched, manoeuvred by support vessels, moored or being retrieved.

5.1 Pre-sailing procedures

- Harbour survey along pre-planned zigzag transects by two HDO boats in the period **1-2 hours** before on-water activities commence to determine the number and location of marine mammals. The surveys shall cover the Alert Zone.
- Boat sighting locations during the transects are to be reported to the HDO Manager and onward to all land-based observation stations to allow tracking of any marine mammals for as long as possible up to the start of sailing.
- Following the completion of on-water surveys, the HDO boats are to initially position themselves as noted in **Figure 1 (locations identified as green circle icon)**.
- HDOs and volunteers begin land-based observations at least **1 hour** before the start of sailing and continue for the duration of sailing.
- In the event marine mammals are sighted in the Shutdown Zone within 30 minutes of the start of sailing, sailing shall not commence until the marine mammal is sighted leaving the Shutdown Zone or if the marine mammal has not been sighted in the Shutdown Zone for at least 20 minutes.

5.2 Procedures for the duration of sailing

The following set out the procedures that must be followed for the duration of sailing activities:

- HDOs continue tracking any marine mammals sighted in the pre-sailing period.
- HDOs scan their observation areas, locate any new sightings, and report the location and direction of movement to the HDO manager via UHF radio.
- HDO Manager communicates the location, direction of movement and number of marine mammals to the MMMP Facilitator (which can be heard by the Ruahine and the DOC staff in the ECR). This includes new sightings and ongoing tracking of previously sighted marine mammals/groups. Location information is to be reported in relation to:
 - The established grid system if not being closely tracked by one of the four HDO vessels.
 - The HDO vessel (distance and bearing) if one is closely tracking the group.
- If the MMP Facilitator determines, based on the sighting information from the HDOs, that a marine mammal is in the Alert Zone, the MMMP Facilitator will advise the Event Control Room Manager. The advice will include where the mammals are and the direction of travel.

- If a marine mammal is approaching the Shutdown Zone, it must be closely monitored, and its location reported every 1 minute to ensure a timely shutdown can be implemented if needed.
- HDOs continue tracking the location and direction of movement until the mammal is out of viewing range.

5.3 Shut down Zone

The shutdown procedures for when a marine mammal enters the Shutdown Zone are set out below.

- If any member of the HDO team sees a marine mammal approaching or entering the Shutdown Zone, the HDO Manager must be immediately notified.
- The HDO Manager must then immediately notify the MMMP Facilitator, stating as accurately as possible, the location, number of marine mammals and their direction of travel.
- If the MMMP Facilitator determines, based on marine mammal sighting information provided by the HDO Manager or HDOs and the electronic information on the YachtBot display (including the location of the Shutdown Zone boundaries), that a marine mammal has crossed into the Shutdown Zone, the MMMP Facilitator must instruct the Event Control Room Manager, who will instruct Race Management to:
 - **delay racing** if racing has not commenced (i.e., during the pre-start sequence)
 - **cease racing and instruct all boats to drop off the foils if racing is underway and keep speeds below 5knts, support boats shall be instructed to keep speeds below 5knts.**

Unless one of the following scenarios applies, and all F50's are greater than 300m from the marine mammal, in which case racing can continue.

- **Scenario A1**
A marine mammal enters the windward mark Shutdown Zone boundary and **all** F50s have rounded the windward mark, and are on the final downwind leg, or the last reach to the finish line and are clearly and obviously heading away from the marine mammal (i.e. downwind).
In this scenario, **racing can continue** as there is no risk of strike and the F50s will be travelling away from the marine mammal.
- **Scenario A2**
A marine mammal enters the windward mark Shutdown Zone boundary and **all** F50s have rounded the windward mark and are clearly and obviously heading away from the marine mammal (i.e. downwind).
In this scenario, **racing can continue** as there is no risk of strike and the F50s will be travelling away from the marine mammal. The race must finish at the downwind gate (or the finish line) and shall not commence another leg to the windward gate.
- **Scenario B1**
A marine mammal enters a Shutdown Zone side boundary and all F50s have rounded the windward mark, are on the final downwind leg and clearly and obviously downwind of the point the marine mammal entered the Shutdown Zone, are heading away from the marine mammal, or all F50s are on the final reach to the finish line.

In this scenario, **racing can continue** as there is no risk of strike and the F50s will be travelling away from the marine mammal.

- **Scenario B2**

A marine mammal enters a Shutdown Zone side boundary and **all** F50s are upwind of the marine mammal, are clearly and obviously heading away from the marine mammal and heading to the windward gate.

In this scenario, **racing can continue to the windward gate** as there is no risk of strike and the F50s will be travelling away from the marine mammal. The race will finish at the windward gate and F50s will drop off the foils after clearing the gate.

- **Scenario C1**

A marine mammal enters the leeward boundary and **all** F50s have rounded the leeward gate, are clearly and obviously heading away from the marine mammal and are on the reach to the finish line. In this scenario, **racing can continue** as there is no risk of strike and the F50s will be travelling away from the marine mammal.

- **Scenario C2**

A marine mammal enters the leeward boundary and **all** F50s have rounded the leeward gate and are heading to the windward gate and are clearly and obviously heading away from the marine mammal. In this scenario, **racing can continue to the windward gate** as there is no risk of strike as the F50s will be travelling away from the marine mammal. The race will finish at the windward gate and F50s will drop off the foils after clearing the gate.

Generic example figures of each scenario type (i.e. A, B and C) are shown in **Appendix C**. Note these show only one specific example and do not reflect all of the potential arrangements under each scenario.

Irrespective of whether racing continues or is shutdown, the following procedures shall be followed whilst a marine mammal is in the shutdown zone:

- a) The closest HDO vessel (or vessels) will maintain close and constant watch of mammal/mammals to monitor the direction of movement. The HDO vessel (or the HDO manager) may direct other HDO vessels or land-based HDO to assist as needed.
- b) The closest land-based HDOs continue tracking the marine mammal's location and direction of movement until the marine mammal is out of viewing range.
- c) Other land-based HDOs continue routine searches of their areas (unless called upon to assist).
- d) Sighting information (location, direction of travel, number of individuals) shall be continuously provided to the MMMP Facilitator via the HDO Manager.
- e) Racing may resume or commence if:
 - i) the marine mammal is sighted leaving the Shutdown Zone, is moving away from the Shutdown Zone and conditions allow for confident tracking, OR
 - ii) racing may resume or commence 5 minutes after the marine mammal is sighted leaving the shutdown zone and sighting conditions are difficult, but the HDO is confident the mammal is well clear, OR
 - iii) at least 20 minutes from the last sighting within the shutdown zone.

- f) HDO vessel(s) shall keep tracking the marine mammal being monitored until they exit the Alert Zone, or they are redeployed to a new sighting via the HDO Manager

5.4 General protection measures for vessel interaction with Marine Mammals

5.4.1 HDO vessels

All HDO vessels must comply with the Marine Mammal Protection Act and the Marine Mammal Protection Regulations at all times. It is the responsibility of the skipper of the HDO vessel(s) to ensure they are aware of the legislation and regulations and operate their vessel accordingly. Each HDO vessel skipper will be given a specific briefing on their legal obligations as a skipper in relation to the legislation and regulations.

5.4.2 All vessels

The Marine Mammals Protection Regulations 1992 lists the conditions governing behaviour around marine mammals. All seals, sea lions, dolphins and whales are protected under the Marine Mammals Protection Act 1978. The skippers of all vessels and sailGP staff involved in on-water operations shall inform themselves of their obligations under the Marine Mammals Protection Act and Marine Mammal Protection Regulations. It is the responsibility of each skipper to ensure they operate their vessel in compliance with the legislation and regulations at all times.

It is an offence to harass, disturb, injure, or kill marine mammals. The Department of Conservation (DOC) has produced general guidelines for how to behave around marine mammals. This is attached as **Appendix D**.

6 Strike incident response and reporting protocols

In the event of a strike incident with a Upokohue/Hector's dolphin or other marine mammal (i.e., New Zealand fur seal), SailGP will activate the incident response and reporting protocols below in collaboration with DOC. Representatives from DOC will be on the water for the duration of on-water activities.

- a) The HDO closest to the incident should inform the Event Control Room Manager via UHF radio and gather information about the incident location.
- b) The Event Control Room will notify all vessels and all activities will be immediately suspended.
- c) The HDO Manager will immediately alert the marine mammal vet, DOC and Te Hapū o Ngāti Wheke contact people. The Safety Boat and the Animal Response Boat are immediately alerted by the Event Control Room Coordinator and will follow DOC/Te Hapū o Ngāti Wheke's instructions
- d) First responders will attend to injured sailors or boats in distress.
- e) DOC/Te Hapū o Ngāti Wheke will direct the recovery of injured animals.
- f) HDO Manager will assist SailGP to collect incident details³ and fill out the incident reporting form in **Appendix E**.
- g) SailGP's Event Director has the responsibility to activate the marine mammal incident communications escalation plan.
- h) SailGP must formally notify DOC of the incident in accordance with the legislation².

³ [Marine Mammals Protection Act 1978 S16 Reporting of accidental death or injury – New Zealand Legislation](#)

- i) The SailGP Event Director will prepare the incident report with assistance from the HDO Manager/MMMP Facilitator as required.

A strike or death is a significant event and must be elevated to the Kaihautū as soon as practical. If death occurs, then a state of tapū will exist and the Kaihautū will deploy the appropriate persons and process. The Kaihautū may consider Rahui (location and time-specific restriction/s).

6.1 Incident communication plan

In case of a vessel strike incident, SailGP and its communications team will activate its marine mammal incident communications escalation and collective response plans, working in close contact with DOC, Te Hapū o Ngāti Wheke Rāpaki, Christchurch NZ, and the local authorities identified in the communications plan.

The marine mammal incident communications escalation plan and the collective response plan have been prepared by SailGP with input from DOC, Te Hapū o Ngāti Wheke, Rāpaki and Christchurch NZ. The Plan outlines the collective operational response protocols and communication response in the event of a vessel strike incident.

The skipper of any vessel that observes an incident involving the injury or mortality of a marine mammal must record the incident using the incident reporting form in **Appendix D**. The incident (including the provision of the incident reporting form) must be reported, in accordance with the Marine Mammal Protection Act 1978 and the Marine Mammal Protection Regulations 1992, to DOC and Te Hapū o Ngāti Wheke, Rāpaki within 24 hours of the incident.

7 Applicability

Enviser Ltd has prepared this report, in accordance with the agreed scope, for SailGP at the request of ChristchurchNZ. No other party, aside from SailGP and the persons involved in implementing the MMMP, may rely on this report, or any conclusions or opinions within it, for any purpose without the express written permission of Enviser Ltd.

The opinions and conclusions within this report are based on the information that was viewed during the preparation of the report.

Authorised for Enviser Ltd by:



Jared Pettersson
Director (Enviser Ltd)
CPEng, CMEngNZ, IntPE

Appendix A: Non-operational elements of the 2023 MMMP

Cultural importance of Upokohue/Hector's dolphin

As part of our Pūtaiao (total environment including all environs of land, springs, freshwater, water, and air; within the water environ are the associated flora and fauna), Upokohue/Hector's dolphin have a whakapapa (genealogy), hierarchy, and kaupapa (purpose). Upokohue/Hector's dolphin also have an interrelationship with past, present, and future in a connected world and the navigation through time and space (wā and atea) therein, of the exoteric (common knowledge) and esoteric (uncommon knowledge) realms. We seek mauri (life force) to thrive and note that the Pūtaiao has a self-regulating mechanism.

Environment

The following sections describe the environment of the New Zealand Grand Prix race event.

Tipuna Whare, Wheke

The Tipuna Whare, Wheke, located at Rāpaki o Te Rakiwhakaputa is the visual representation of the esoteric and exoteric expression of the Te Hapū o Ngāti Wheke, Rāpaki, Mātauraka, and the context of Pūtaiao.

It recognises the southern creation and creating stories, with the union of Raki to Papatuanuku and Pokoharuatepō, and the union of Papatuanuku and Takaroa. The elemental deities of Kahukura and Tu-Te-Raki-Whanoa, important in our southern stories, are also represented within the Rāpaki Tipuna Whare, Wheke.

It traverses the realms of Te Waka o Aoraki, Waka-a-Maui and Uruao te Waka o Rakaihautu/Ra-Te-Kaihautū. Tuhiraki (Mount Bossu), where tradition says Rakaihautu/Ra-Te-Kaihautū's koa (digging stick) is placed, represents a symbol and example of exploration and the placing of names.

Tamatea-Pokaiwhenua/Pokaimoana and the waka Tākitimu is an important tradition of Te Hapū o Ngāti Wheke, Rāpaki from recent but pre-European times. Many of the place names in the Whakaraupō area are reflective of the Tamatea traditions, and hononga (connection) to his contemporary Ngātoro-i-rangi of Tūwharetoa in the central North Island Te Arawa Waka. Mauka Te Poho Tamatea ("the Breast of Tamatea") is an example of a local name honouring Tamatea and refers to the conical shaped peak above the Rāpaki Kaika and Ahi-a-Tamatea (The Giant's Causeway).

Our muna-matauraka (restricted knowledge) extends these traditions into Te Moana-nui-a-Kiwa (the wider Pacific Ocean) and the inter-relationship of Whakaraupō within that. It encapsulates the traditions of Paikea (the Whale rider) and the interrelationships with Ngāti Porou in the Tai Rāwhiti (East Coast) region of Aotearoa/NZ.

The incursions of Ngāi Tuhaitara and Kāti Kuri saw recent but pre-European occupation into Te Waipounamu and saw the allocation of rohe/regions. Ngāti Wheke sits under the mana of Te Rakiwhataputa who is Kati Kuri tūturu (completely), he has extensive Kuri and Tuhaitara interconnectedness through his two wives, his first being Hine-Te-Awheka whose children were Te Ropuake, Te Raki-tau-Neke-a-tane, Hinekakai, Manuhiri and his second wife Kuku and their son Wheke.

This weaves together the rich tapestry of Waitaha and Kati Mamoe, Tuhaitara (including Ngāi Tuahuriri, Ngāti Rakiamoa) and Kāti Kuri (including Ngāi Te Ruahikihiki).

Finally, the whare tipuna is a celebration of mana wahine not only in the carved ancestresses which includes Hemo-Te-Raki, Hui-a-Rei, Tuhaitara, Hine-Kataia, Hine-Te-Awheka and Kuku, but within the female aspect of the whare tipuna including the tukutuku works.

The natural and total environment is presented as set out above, and also includes paintings and tukutuku panels relating to the local environment.

Our statement of mana and Pūtaiao is:

“Whakaraupō is us and we are Whakaraupō.”

Surrounding environment

Lyttelton Harbour/Whakaraupō is the eroded caldera remnant of an extinct volcano. The harbour has high marine cliffs at its entrance and along its sides. In the centre of the caldera sits Lyttelton Port of Christchurch, the largest port servicing New Zealand’s South Island. As a result of this semi-enclosed geography, this protected harbour environment is one of continual activity and noise, with recreational boating, ferries, ships, trains, cargo, and general port activity.

Lyttelton Harbour, and the SailGP course, is located within the boundaries of the Banks Peninsula Marine Mammal Sanctuary (BPMMS). The Sanctuary encompasses the entire Banks Peninsula, its main harbours and bays, extending from the southern boundary of the Te Rohe o Te Whānau puha Kaikōura Whale Sanctuary, south to the Waitaki River and 20 nautical miles out to sea from the coast. It was created in the late 1980s to protect the endangered Upokohue/Hector’s dolphin and places restrictions on activities within its boundaries for the protection of all marine mammals. The event is also located within, or near to, the two Mataitai established by Te Hapū o Ngāti Wheke, Rāpaki.

Banks Peninsula marine mammal species summary

More than 25 marine mammal species have been sighted or stranded within the waters of Banks Peninsula. However, only the Upokohue/Hector’s dolphin and New Zealand fur seal reside in Lyttelton Harbour/Whakaraupō year-round with the Southern Right whale often sighted offshore of Banks Peninsula.

Of the estimated 15,000 Upokohue/Hector’s dolphins known to occur around the South Island, approximately 3,000-6,000 are found in the waters surrounding Banks Peninsula (MacKenzie & Clement 2016). This Banks Peninsula population is one of the highest concentrations of Upokohue/Hector’s dolphins around the South Island. The dolphins reside in the bays and harbours of Banks Peninsula, including Lyttelton Harbour/Whakaraupō in the summer and autumn months and move further offshore in the cooler months.

The calving season for Upokohue/Hector’s dolphins is between October and March. While calves are regularly sighted within Akaroa and Lyttelton Harbour/Whakaraupō each summer, no distinct calving and/or nursery areas have been identified.

Upokohue/Hector’s dolphins are a “nationally vulnerable species,” exposed to threats including:

- entanglement in both commercial and recreational fishing gear; particularly set nets and trawling, resulting in incidental mortality or serious injury,

- low reproductive rates (calf every 2-3 years) and late maturity (start breeding after 7-9 year of age and only live to 20-25) means naturally slow population growth,
- boat strike (for newborn calves and young animals), and
- sensitivity to disturbance from underwater noise (e.g., shipping traffic and construction).

Several New Zealand fur seal breeding colonies are located throughout the more eastern and southern bays of Banks Peninsula (more than 20 km away from Whakaraupō/ Lyttelton Harbour and the offshore disposal ground). However, New Zealand fur seals often cover large distances away from their breeding grounds and are commonly seen within Whakaraupō/ Lyttelton Harbour.

Risk identification

The MMMP identifies the following risks for marine mammals presented by SailGP's New Zealand Grand Prix:

- Vessel strike
- Avoidance behaviours

Marine mammals already face both risks year-round within Whakaraupō/Lyttelton Harbour, but the risk level will be heightened by SailGP's training and racing activities. The risk of both vessel strike and avoidance behaviours are discussed in further detail below, with particular emphasis on the risk of vessel strike, which is considered the primary risk.

The SailGP racing environment creates a unique scenario in that the main risk factors that may result in avoidance behaviours by Upokohue/Hector's dolphins, particularly the underwater noise generated by a large fleet of spectator and support boats, may also help mitigate the risk of vessel strike by deterring dolphins from the race area.

Vessel strike

The SailGP Grand Prix will lead to increased boat traffic in the area on the training, rehearsal and racing days, increasing the risk of vessel strike to marine mammals, particularly Upokohue/Hector's dolphin. The risks to marine mammals from the F50 catamarans and the associated on-water operations (including race support safety, broadcasting, and spectators) are presented below.

The following risk factors have been identified as directly or indirectly altering the risk of vessel strike (injury or mortality):

- The race event takes place during the late summer months when Upokohue/Hector's dolphins spread into the bays and harbours of Banks Peninsula. Upokohue/Hector's dolphins are regularly found throughout middle and outer harbour waters over the warmer summer months in areas that overlap with the proposed race and practice areas (See Appendices A and B). Te Hapū o Ngāti Wheke, Rāpaki report that Upokohue māmā and pēpē are also seen at the head of the harbour early mornings. Kororā are also sighted morning and late afternoons. The presence of marine mammals at the head of the harbour will depend on the abundance of various fish species.
- Most Upokohue/Hector's dolphin calves are born between October and March and while no distinct calving areas and/or nursery areas have been identified, calves are regularly sighted within Lyttelton Harbour/Whakaraupō each summer. Newborn calves and young animals are vulnerable to boat strike as they are less aware of risk, spend more time on the surface

and dive more slowly than mature dolphins. Upokohue/Hector’s dolphins are naturally inquisitive mammals and will approach and interact with vessels.

- Individual New Zealand fur seals are expected to visit the harbour throughout the year with more juveniles expected over late winter and spring when they leave nearby breeding colonies.
- Whilst not mammals, kororā/little blue penguins are also present in the harbour, leaving their land-based nests to forage at sea during the day.
- The design of the F50 catamarans includes hulls and appendages that travel through the water at depths of up to 2.5 metres deep.
- The F50 catamarans move at speed up to 50 knots, *without* generating considerable noise to provide adequate warning to marine mammals (see Figure A.1).
- The support boats for training and racing of the F50 catamarans, will include powerboats with outboard engines and propellers travelling through the water up to 1m deep, operating at high speeds, with limited ability to change course quickly or stop.
- A large spectator fleet is expected on race days , increasing the volume of marine traffic within Whakaraupō/Lyttelton Harbour.

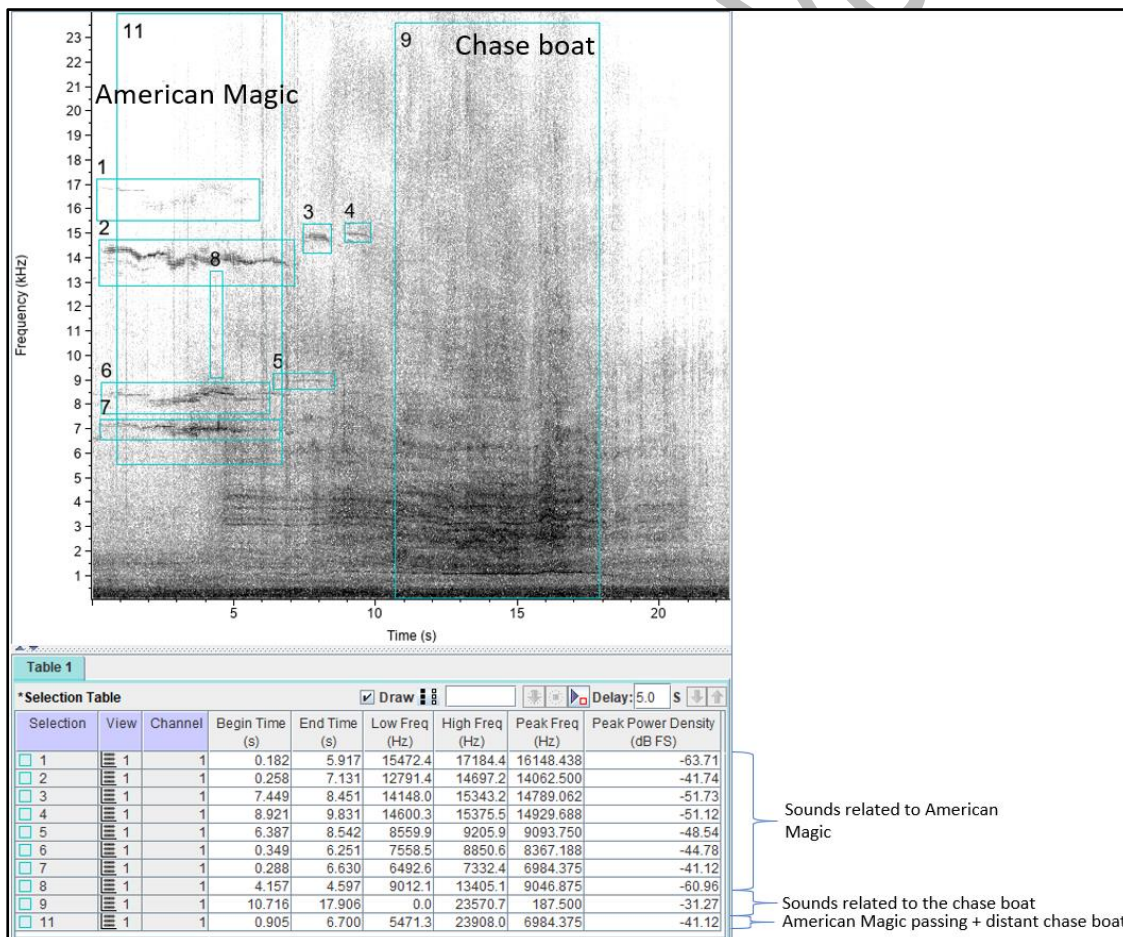


Figure A.1: Recording of American Magic passing a bottom-mounted hydrophone during the Prada Cup, as recorded during Race 2 on 17 January 2021 (between 1700 and 1730 hrs). Numbers 1-8 are related to the foil, showing a complete detection time of approximately 10 seconds. Number 9 shows the chase boat (Pine MK 2021a).

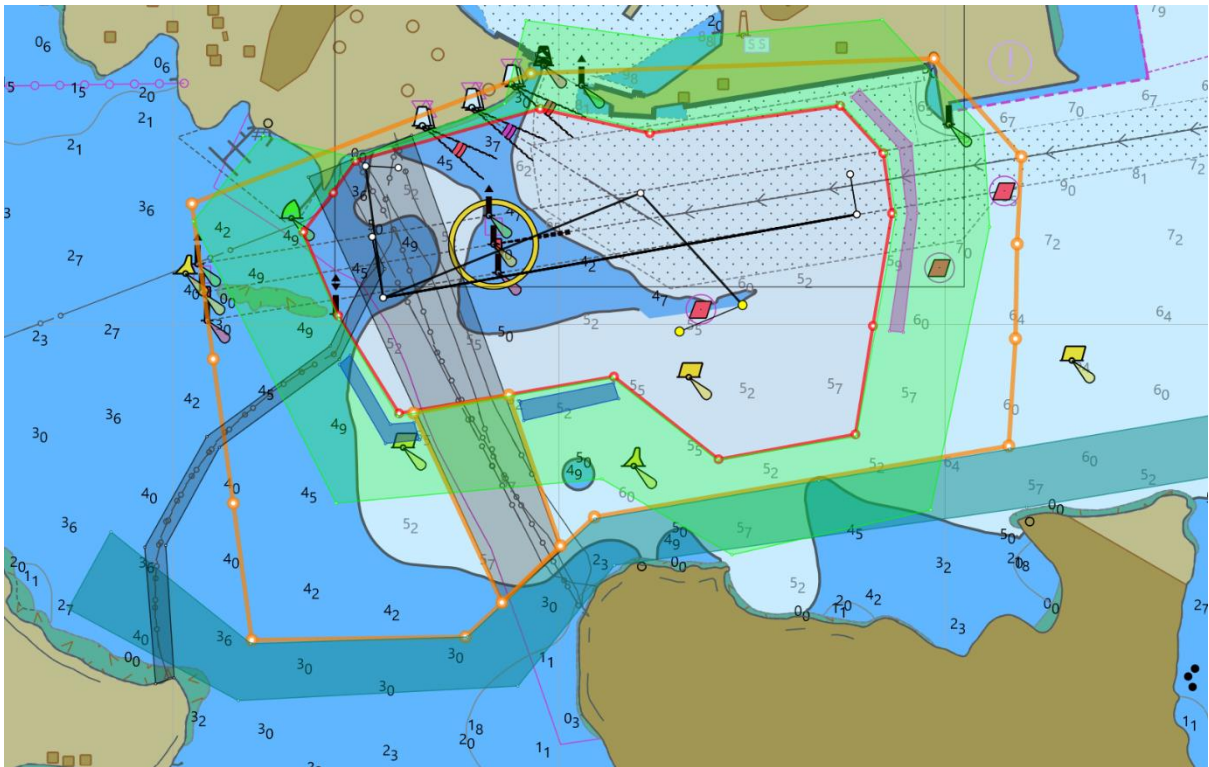
Avoidance behaviours

Marine mammals use sounds for communication, orientation, foraging and predator avoidance. An increase in underwater noise can impact marine mammals, resulting in avoidance of noisy areas, behavioural changes, auditory masking, or physical injury.

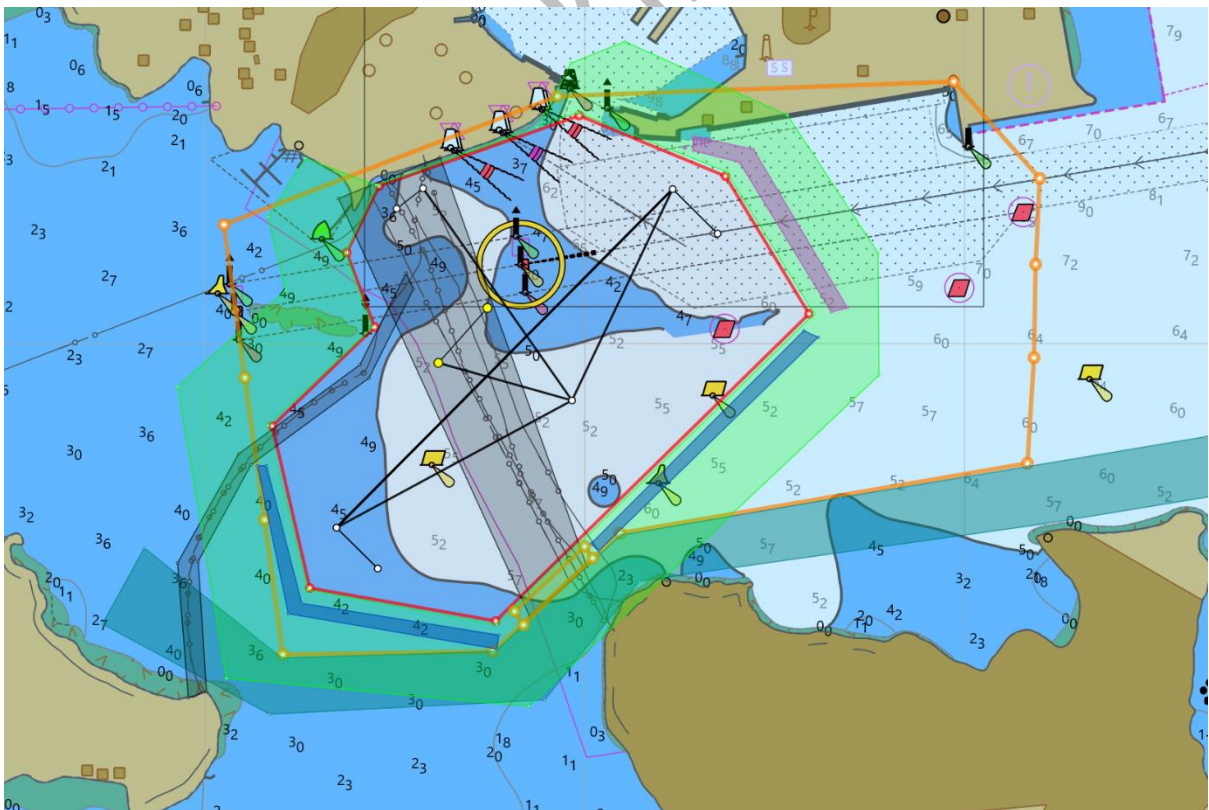
The following risk factors have been identified as directly or indirectly altering the risk of avoidance behaviours:

- The SailGP race event will result in a temporary increase in vessel traffic in Whakaraupō/Lyttelton Harbour that will alter the amount and character of underwater sound within the race area. The noise from vessel traffic will vary with the type, size, and speed of vessels. Vessel noise, as perceived by dolphins, is determined by the background sound conditions.
- Mainly lower-frequency noise (below 2 kHz) is expected to be generated by larger vessels and higher frequency noise (50 – 100 kHz) by smaller, faster recreational vessels. Depth sounders are also commonly associated with recreational vessels, most commonly emitting rapid pulses at 50 kHz but also 90 kHz or well above 120 kHz (within the same range as dolphins' echolocation clicks).
- A range of potential behavioural and masking effects are possible, with risk generally increasing with proximity to vessels.
- The range over which vessel noise levels propagate is not expected to exceed any hearing injury threshold criteria (i.e., temporary threshold shift (TTS) or permanent threshold shift (PTS)).
- The associated increase in vessel traffic will be temporary over a fortnight period only, with a peak in traffic expected before, during and after the race event.
- Different sources of underwater noises are not necessarily additive or cumulative. The 'loudest' noise will often cover up other noises generated nearby by other activities.
- The inner- to mid-harbour location of event-related traffic may help discourage individual animals from moving into the harbour and instead limiting their presence to mainly outer and entrance waters while the events are underway.

Appendix B: Figures showing example race courses



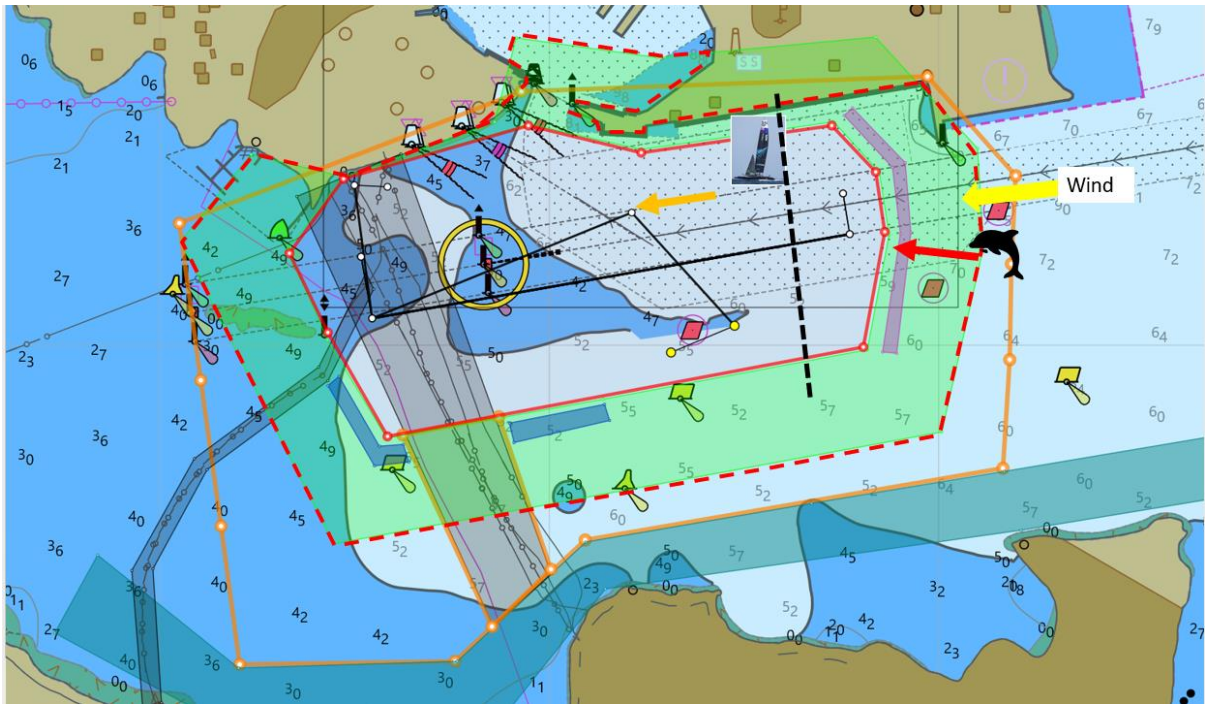
Example easterly racecourse (with start box)



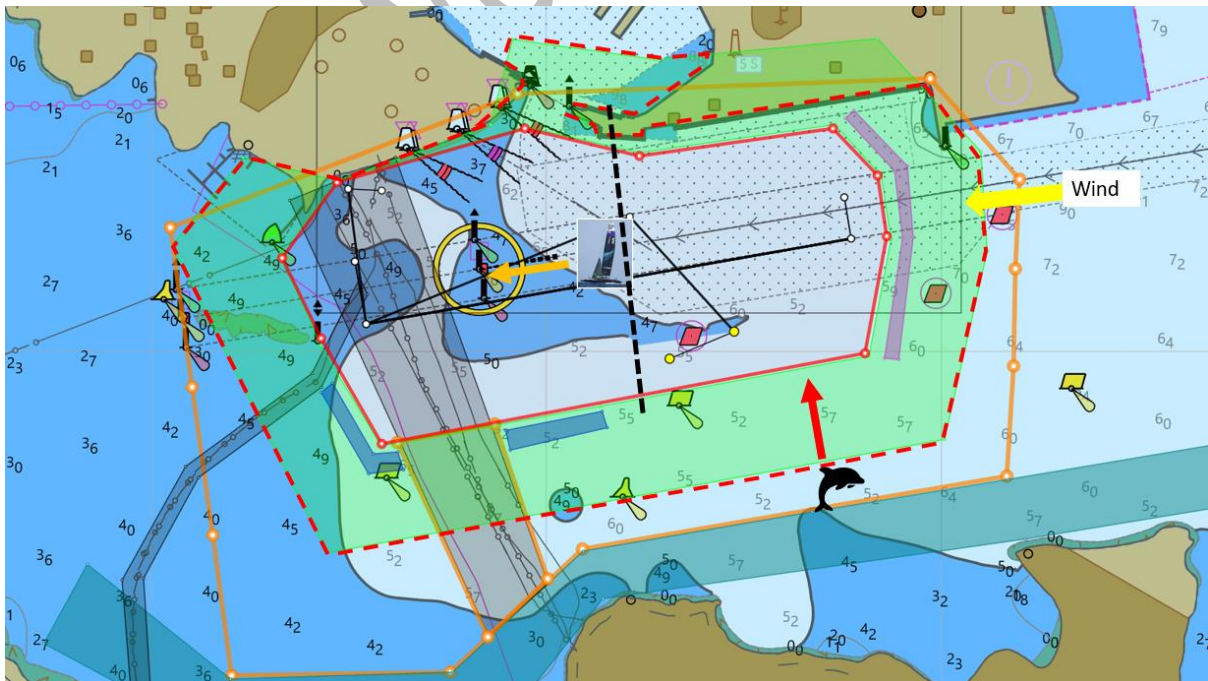
Example south-westerly racecourse

Appendix C Scenario examples

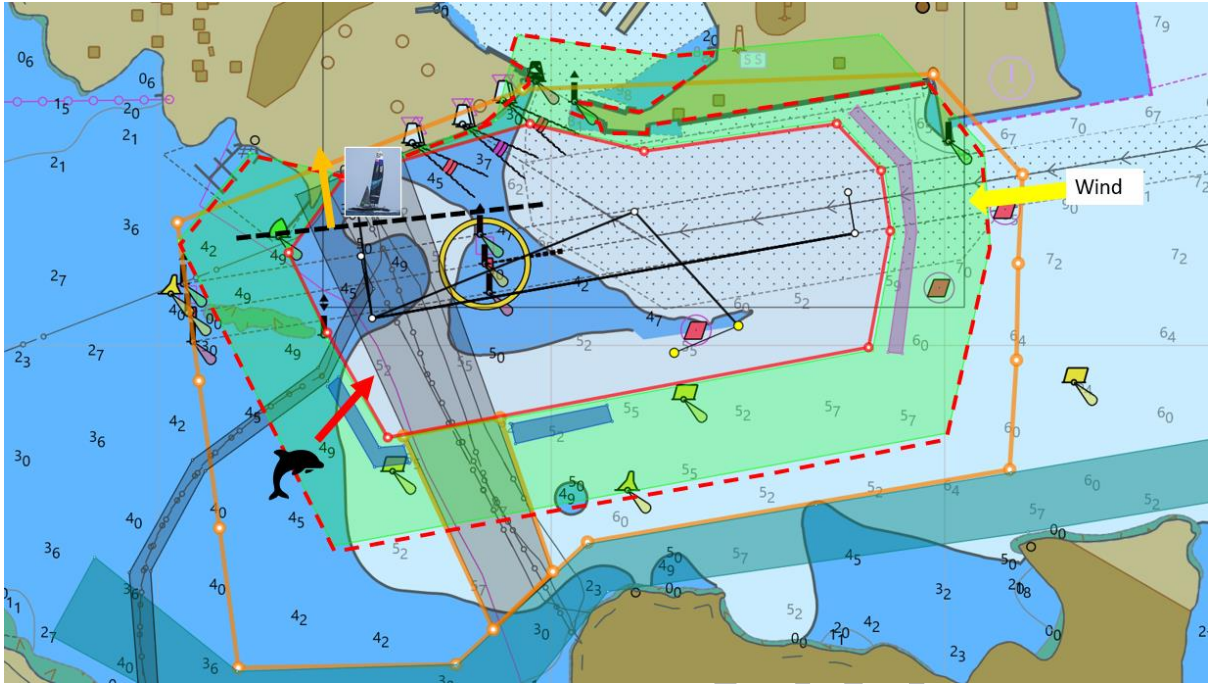
NB In the below indicative figures, the black dashed line indicates the last F50 in the fleet, the orange arrow the direction of travel for the F50s and the red arrow the direction of general travel of the dolphin.



Scenario A



Scenario B



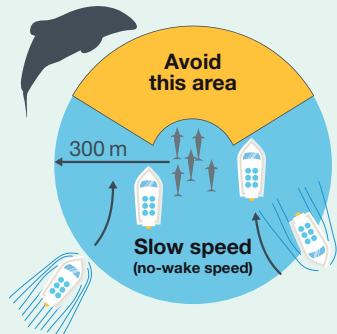
Scenario C

Appendix D DOC guidelines on behaviour around marine mammals

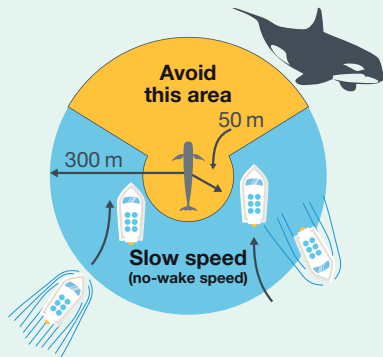
FINAL Working Version

At sea

- ▶ Ensure that you travel no faster than idle or 'no wake' speed within 300 m of any marine mammal.
- ▶ Approach whales (which includes orca and pilot whales) and dolphins from behind and to the side.
- ▶ 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).
- ▶ Swimming with whales is not permitted.
- ▶ You may swim with seals and dolphins but not with dolphin pods with very young calves.
- ▶ Avoid approaching closer than 20 m to seals and sea lions hauled out on shore.
- ▶ Idle slowly away. Speed may be gradually increased to outdistance dolphins and should not exceed 10 kn within 300 m of any dolphin.



DOLPHINS



WHALES

Further information

For information on encounters with marine mammals:
www.doc.govt.nz/sharingcoasts

To apply for a commercial viewing or filming permit:
www.doc.govt.nz/permit-marine-mammal-interaction

For more information on drone use around marine mammals, contact your local DOC office or visit:

www.doc.govt.nz/drones-near-marine-mammals

www.doc.govt.nz

DOC HOTline
0800 362 468

**Report any safety hazards
or conservation emergencies**
For Fire and Search and Rescue Call 111

If you notice a marine mammal being harassed, severely injured or entangled, contact the Department of Conservation HOTline immediately.

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R155588

New Zealand Government

Sharing our coasts with marine mammals



Behaviour around marine mammals

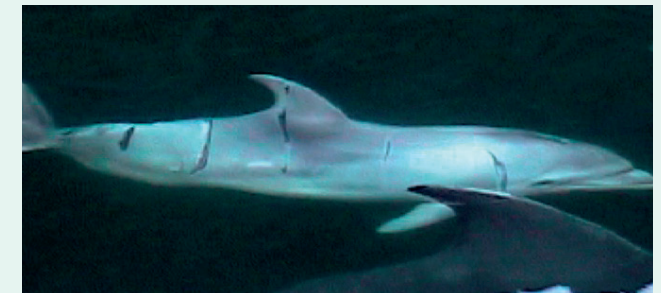
- ▶ Do not disturb, harass or make loud noises near marine mammals.
- ▶ Contact should be ceased if marine mammals show any signs of becoming disturbed or alarmed.
- ▶ Do not feed or throw any rubbish near marine mammals.
- ▶ Avoid sudden or repeated changes in speed or direction of any vessel or aircraft near a marine mammal.
- ▶ There should be no more than three vessels and/or aircraft within 300 m of any marine mammal; up to 6 kayaks rafted together counts as one vessel.

On shore

- ▶ Give seals and sea lions space. Where practicable, stay at least 20 m away.
- ▶ Avoid coming between fur seals and the sea.
- ▶ Keep dogs on a leash and well away.
- ▶ Where practicable, do not drive vehicles within 50 m of a marine mammal.
- ▶ Never attempt to touch seals or sea lions – they can be aggressive and often carry diseases.

In the air

- ▶ Aircraft (including drones) must maintain a horizontal distance greater than 150 m when flying near any marine mammals.



Bottlenose dolphin showing severe propeller marks.
Photo: C. D. Rundgren

Introduction

As an island nation, with most Kiwis living within an hour of the coast, many of us will be fortunate enough at some stage to encounter marine mammals – whether seals or sea lions hauled out on shore, or dolphins and whales at sea.

From the tip of the north to the deep south, New Zealand is a hotspot for marine mammals. Dolphins mingle with the boaties in Auckland’s backyard, the Hauraki Gulf. Seals laze on Wellington’s southern coast, and even whales can be seen resting between dives above the Kaikoura canyon, the South Island’s marine mammal Mecca.

Hunting in the past reduced many marine mammal populations to a fraction of their former size. Luckily, cameras have replaced harpoons and clubs, and some marine mammal populations are slowly recovering.

However, growing interest in marine mammals and the expansion in sea-based tourism bring a new suite of threats, including boat strike, noise pollution, harassment, displacement and separation of mothers and their young. The Marine Mammals Protection Regulations 1992, summarised here, aim to minimise these threats by prescribing appropriate behaviour around marine mammals. Commercial tourist operators require permits and are subject to further rules.

If you see whales, dolphins or seals while boating or visiting the coast, a few simple rules will ensure an enjoyable encounter for you and for them.



Fur seal.
Photo: Nathan Pettigrew

Above left to right: Orca with calf. Photo: Nathan Pettigrew
Southern right whale mother and calves. Photo: Mark Bauman
Leopard seal. Photo: DOC

All seals, sea lions, dolphins and whales are protected under the Marine Mammals Protection Act 1978. It is an offence to harass, disturb, injure or kill marine mammals.

Anyone charged with harassing, disturbing, injuring or killing a marine mammal faces a maximum penalty of 2 years imprisonment or a fine of up to \$250,000.

The Marine Mammals Protection Regulations 1992 list the conditions governing behaviour around marine mammals: www.legislation.govt.nz

Appendix E Incident Reporting Form

Marine Mammal Incident reporting form	
DATE	
TIME	
OBSERVER/REPORTER	
INCIDENT LOCATION ON VESSEL (PORT, BOW, PROPELLER, FOIL...)	
VESSEL POSITIONING	
LATITUDE (NORTHING)	
LONGITUDE (EASTING)	
VESSEL TYPE, ACTIVITY, AND SPEED AT TIME OF INCIDENT ⁴	
SPECIES	
INDIVIDUAL OR GROUP	
NUMBER OF ADULTS	
NUMBER OF JUVENILES	
ANIMAL(S) ACTIVITY BEFORE INCIDENT AND AFTER ⁵	
DESCRIPTION OF INJURY OR MORTALITY	
GENERAL DESCRIPTION OF CONDITIONS	

⁴ Support boat, vessel, spectator boat etc.

⁵ Feeding, resting, travelling, socialising, breaching, bowriding etc.