

Marine Mammal Management Plan for the ITM New Zealand Sail Grand Prix | Christchurch

Executive Summary

The event

The ITM New Zealand Sail Grand Prix is coming to Whakaraupō, Lyttelton Harbour in March 2023. Foiling F50 catamarans race in a series of fleet races over two days, culminating in a final, involving three F50s on the second and final day of racing. A practice day and race rehearsal day immediately precede the two race days. Each race is approximately 15 minutes long, scheduled to occur between 3.00pm and 4.30pm.



Image courtesy of Sailgp.com

Preparation of the Marine Mammal Management Plan

Whakaraupō, Lyttelton Harbour is part of the Banks Peninsula Marine Mammal Sanctuary and home to the Upokohue / Hector's dolphin and a range of other wildlife. Running an event in a sanctuary environment where marine mammals exist and are protected requires a comprehensive and bespoke management approach. Recognising this, SailGP in partnership with Te Hapū o Ngāti Wheke Rāpaki, and under the guidance of Te Roopū Tiaki Whakaraupō Advisory Group, has developed a marine mammal management plan (MMMP).

The MMMP was collated by Enviser Limited, with information on event logistics provided by SailGP, and technical expertise provided by Cawthron Institute and Styles Group Underwater Acoustics.

Members of Te Roopū Tiaki Whakaraupō Advisory Group provided input and reviewed the MMMP throughout its development. The Advisory Group comprised representatives from Te Hapū o Ngāti Wheke Rāpaki (Chair of the Advisory Group), Department of Conservation (DOC), Environment

Canterbury, University of Otago, Christchurch City Council (Banks Peninsula Community Board), Live Ocean, Lyttelton Port Company, and Black Cat Cruises. (Representatives from ChristchurchNZ, DOC, Enviser Ltd, Cawthron Institute and SailGP also participated in the Advisory Group in observer roles.)

Identified risks

The MMMP is focused on protecting the Upokohue/Hector's dolphin, due to its prevalence within Whakaraupō/Lyttelton Harbour. The New Zealand fur seal, while not as prevalent, is also within the scope of the MMMP and will benefit from the protection measures.

The MMMP identifies vessel strike as the primary risk for marine mammals presented by the ITM New Zealand Sail Grand Prix. Marine mammals face vessel strike risk year-round within Whakaraupō, Lyttelton Harbour, however the risk level is heightened by SailGP's training and racing activities. This is partly due to the F50 design which includes hulls and appendages that travel through the water at depths of up to 2.5 metres deep and move at speeds of up to 50 knots, without generating considerable noise to provide adequate warning to marine mammals.

Avoidance behaviours (by Hector's dolphins) due to increased noise and vessel traffic is also identified as a risk but the MMMP does not seek to mitigate this risk as the increase in noise and vessel traffic may help deter marine mammals from the race area, reducing the risk of vessel strike.

The anticipated increase in marine traffic also poses a risk. An additional 40-50 support boats will be present within the harbour waters, including powerboats with outboard engines and propellers travelling through the water up to 1 metre deep.

These risk factors, combined with the prevalence of Upokohue / Hector's dolphin within Whakaraupō, Lyttelton Harbour and its inquisitive nature, necessitates a robust approach to avoid, as far as practicable, any interaction between vessels and marine mammals, as outlined below.

MMMP management and mitigation measures

The MMMP provides best practicable mitigation and protection measures to safeguard the Upokohue / Hector's dolphin and other wildlife, for the duration of training and racing activities. Visual observations by trained on-water and land-based Hector's dolphin observers (HDOs), combined with race shutdown procedures, form the foundations of the MMMP. Additional, complementary measures support the visual observations and include:

- Real-time underwater acoustics
- Acoustic deterrent devices
- Pre-race boat surveys
- Pre-race aerial drone surveys

Each of these measures are discussed in the following sections.

Visual observations

To assist with tracking mammals, the harbour will be divided into alert zones, with each zone corresponding to an increased risk of vessel strike (with associated protocols to delay and halt racing, if marine mammals are sighted within zones).

The zones will also be monitored by land-based HDOs (equipped with binoculars, tripods, and VHF radios) positioned at 10 observation stations at zone boundaries on both sides of the Harbour, visually covering the area from Ōtamahua / Quail Island through to the harbour entrance. Two

observers will be positioned at each station – one suitability experienced HDO, supported by a trained volunteer observer. Land-based observations will commence at least four hours before the scheduled start of sailing activities on the rehearsal and racing days (March 17, 18, and 19) and two hours before on the free practice day (March 16) and continue until 30 minutes after the end of sailing. The MMMP details the protocols for delaying and halting racing if a marine mammal is sighted within the vicinity of sailing, for resuming sailing once the risk has subsided, and for responding to and reporting a strike incident.

For the rehearsal and racing days (17, 18 and 19 March) the following alert zones and protocols will apply:

- ZONE 1 (observe, report and track)
- ZONE 2 (observe, report and track)
- ZONE 3, 3a and 3b (delay start of racing)
- ZONE 4 (shut down sailing)

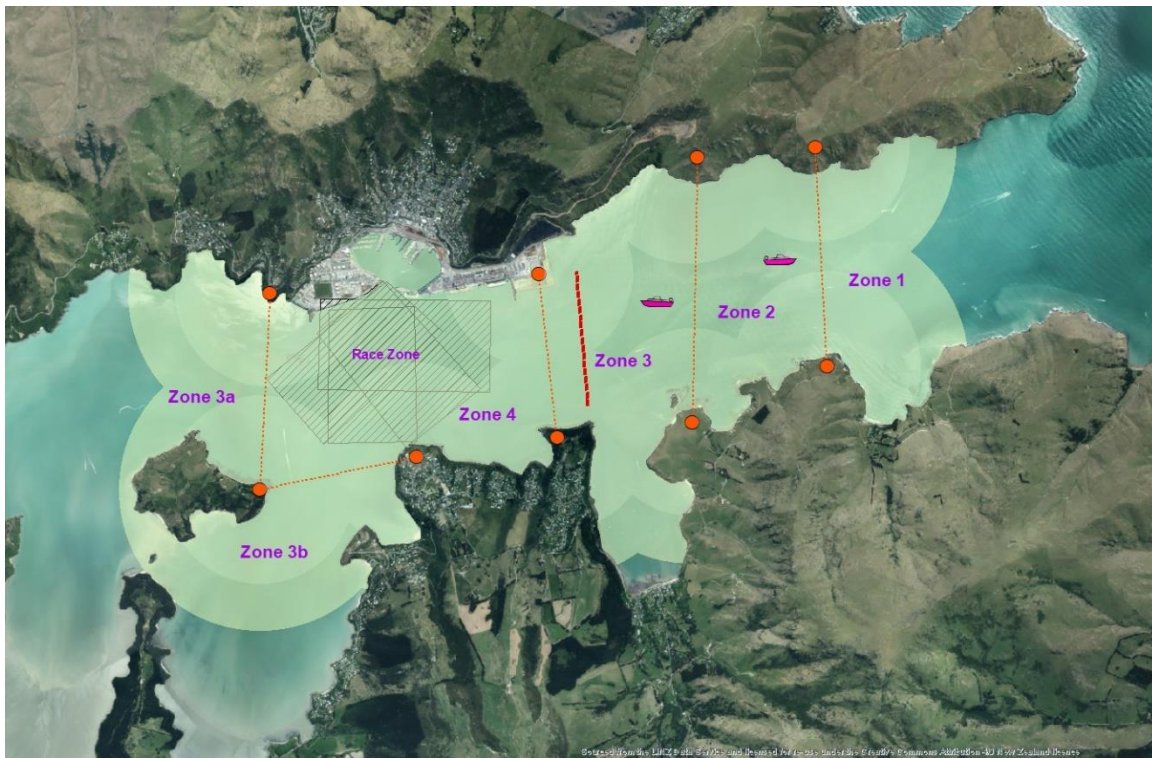


Figure 1 – Alert zone layout

To enable quick and accurate tracking of marine mammals, the zones will be divided into an annotated grid with on-water buoys marking grid intersections. This will allow HDOs to identify the location of sighted mammals, and to quickly track the mammals as they move into different zones.

The alert zone boundaries and associated protocols will be adjusted for the free practice day on 16 March due to reduced marine traffic and an extended practice area. On-water transect surveys and HDO observers will remain the primary measures as these days. However the practice area will be divided into five zones with a requirement to maintain a clear zone between sailing activities and a sighted marine mammal. Zones where a marine mammal is actively sighted, or adjacent to where a marine mammal is actively sighted, will be “closed” and all SailGP vessels must maintain speeds <5

knots. Zones with no active sightings, or active sighting in adjacent zones, remain “open” and sailing can occur.

Supporting measures

A range of supporting methods will be employed to complement the primary observation and alert zones protection measures to further minimise risk. These include the use of drone surveillance, real-time underwater acoustic surveillance, and the use of marine mammal sighting apps.

- **Real-time underwater acoustics:** Active hydrophones deployed off support boats or from buoys will be used to acoustically monitor for the nearby presence of marine mammals undetected by visual observers. Automated detection using AI capabilities from the deployed hydrophone has developed for this purpose. The system will be operated and monitored by a specialist marine mammal acoustician.
- **Acoustic deterrent device (ADD):** An underwater acoustic deterrent device (ADD) is proposed as an extra layer of protection, positioned near the edge of the racecourse and activated only when no dolphins are detected acoustically (via passive acoustic monitoring devices) or visually (by HDOs) within, or near, the race area. ADDs are commonly used to keep marine mammals away from dangerous situations, such as very noisy construction projects (like offshore wind turbine farms) or fishing nets. The short-term use of this device (in areas where no marine mammals are detected) is intended to protect marine mammals from the risk of vessel strike.
- **On-water surveys:** Prior to the commencement of sailing, on-water transect surveys will be undertaken by two boats and a drone (if feasible), commencing no earlier than two hours before training and racing starts on practice, rehearsal, and racing days (March 16, 17, 18, and 19). At least two suitably experienced observers will search the transect area (from the bow or an elevated position on each boat) using binoculars when necessary. The surveys will determine if (and where) any marine mammals are in the harbour and will help inform visual tracking prior to and during training and / or racing.
- **Drone surveillance:** The Maui63 drone will undertake transect surveys before training and during the morning of race days to quickly cover the entire harbour and support the identification of marine mammals.

Training and review of the MMMP

The MMMP has been prepared as a living operational document and will be evaluated and refined up to and throughout the ITM New Zealand Sail Grand Prix event. To ensure the communication, mammal identification, and location tracking protocols operate as anticipated, drills will be held on the practice day (16 March) and on the rehearsal day (17 March). These will include simulating a Upokohue / Hector’s dolphin sighting in each of the four alert zones and a full race shut down, in the event it is required on 18 and 19 March.

The MMMP will also be reviewed following the 2023 event. The event is expected to return to Whakaraupō, Lyttelton Harbour in 2025, and subject to review and any necessary amendments to the scope and purpose, the protection measures outlined within the MMMP will apply to all future events.