

Piopiotahi Milford Sound:

A coordinated approach to understanding, communicating and managing natural hazard risk.

Piopiotahi Milford Sound is one of Aotearoa New Zealand's most iconic, stunning and remote visitor destinations. However, it's important visitors and workers understand the remote wilderness and dynamic geology that make this destination so incredible also present significant natural hazard risk, including earthquake-induced landslides and tsunami.

Research published by the University of Canterbury* has improved our understanding of this tsunami risk. However, further research to quantify, communicate and manage this risk is required. In response, Emergency Management Southland (EMS), in collaboration with Milford Sound Tourism Limited (MSTL), the Department of Conservation (DOC), the National Emergency Management Agency (NEMA), and other partners, have initiated a multi-stage project to improve our understanding of natural hazard exposure and quantify risk to life from tsunami hazards for both visitors and workers at Piopiotahi Milford Sound.

To support this, the project partners are also developing a collective hazard risk communication strategy to enable consistent messaging, and ensure people have the right information at the right time to make informed decisions regarding their safety.

Collective Hazard Risk Communication Strategy

While more research is needed to quantify and manage the risk of earthquake-induced landslides and tsunami at Piopiotahi Milford Sound, it is agreed that there should be no delay in communicating what we do know, and what we are doing to improve our understanding and management of the risk.

The Collective Hazard Risk Communication Strategy is based on advice from GNS Science and is designed to be implemented immediately. It includes short and medium-term actions to implement over the next 12-18 months, as the research progresses. It also includes a process for reviewing and updating as new science and hazard insights become available, to enable longer-term communications goals to be developed and implemented as our understanding of the risk improves.

Short-term actions

- Version one of strategy ready for implementation (Dec 2025 - Jan 2026)
- ▶ Agree consistent messaging updated across project partner websites with a focus on Milford Sound related content (Jan 2026)
- ▶ Staff induction tool built and online messaging updated (Jan 2026).

Medium-term actions

- Strategy reviewed and updated based on new tsunami modelling.
- Updates to online messaging accordingly.
- ▶ Ensure opportunities for mana whenua-led pūrakau to be communicated.
- Development of consistent messaging and narratives for use across physical touchpoints (e.g. signage).

Longer-term goals

- Strategy review and refresh of key messages based on new science modelling and risk analysis.
- ▶ Review of audience touchpoints based on updates to tourism destination plans.
- Updates to online messaging and physical touchpoints.

The strategy will:

- ▶ Establish a unified approach to how natural hazard risk associated with Piopiotahi Milford Sound is communicated.
- ▶ Enable the communication of clear and consistent risk messaging to support informed decision-making and the safety of staff and visitors.
- ▶ Be adaptable to new information, future science and organisational changes.

- ▶ Ensure hard risk messaging is underpinned by the most up-to-date science and modelling available.
- ▶ Improve risk literacy and build local hazard risk communications capability.
- ▶ Be able to take advantage of new technology and opportunities to share consistent messages.





















Indicative project timeline

The graphic below summarises the two main workstreams: the science research required to quantify and manage the risk, and the development of a collective hazard risk communication strategy to guide a unified approach to communicating that risk.

It shows how the two workstreams align so new knowledge can be incorporated as the science research and risk modelling progress.

▶ Collective online messaging updated (Jan 2026).

Immediate actions Short-term actions Medium-term actions Longer-term goals Concurrent development of a collective risk communications strategy. Risk communication Actions already taken: Co-develop a collective hazard risk communication Review and Review and strategy to support agencies to coordinate consistent Project partners communications update strategy to update strategy messaging related to earthquake-induced landslide and group established to co-develop a based on Tsunami incorporate new collective hazard risk communications tsunami risk at Piopiotahi Milford Sound. knowledge Modelling strategy, based on the GNS Science Version one of strategy ready for implementation risk communication advice report. (Dec 2025 - Jan 2026) ▶ New tsunami signage installed by EMS ▶ Staff induction tool built (Jan 2026). ▶ Milford Sound staff induction by EMS

During 2025

Jan 2026

Mid 2026

Late 2026

Dependant on progress

Risk research and management

Actions already taken:

- ► A project partners group established to progress scientific research and risk management.
- Commissioned GNS Science report on risk communication advice for Piopiotahi Milford Sound.
- Shared research findings with Fiordland Hazard Working Group
- ▶ Re-formed Piopiotahi duty managers group.

Synthesis of existing knowledge

Critical synthesis of existing research relevant to Piopiotahi, and global knowledge to date.

To provide:

- ► A common understanding of the problem and inform agency responsibilities.
- ► Foundations for modelling and risk assessment.

Tsunami hazard modelling

Hydrodynamic tsunami modelling specific to Piopiotahi, using new LiDAR and bathymetry data.

To provide:

▶ Detailed modelling of tsunami hazard properties such as peak flow-depth and water-velocity, suitable for loss modelling purposes.

Proposed future project stages

- An exposure model specific to the tsunami hazard at Piopiotahi, which includes vulnerability of people and boats.
- A robust calculation of individual risk to staff and visitors, and societal risk to Aotearoa NZ, based on exposure modelling.
- An analysis of potential mitigation options based on new hazard risk modelling.