



Otago
Regional
Council

Otago Coast Issues and Opportunities Report



October 2026

Executive Summary

1. The Otago coast is a significant environmental, cultural, recreational and economic asset. Stretching from the Waitaki River mouth to Wallace Beach in the Catlins, it supports diverse ecosystems, coastal communities, tourism, recreation, fisheries, port operations, cultural heritage and customary activities. It is central to the identity and wellbeing of Otago communities and holds deep significance for Kāi Tahu as mana whenua and mana moana (customary authority relating to the coastal marine area).
2. This report has been prepared to inform the development of Otago's future coastal planning framework under the new resource management system, while also helping to guide complementary non-regulatory actions and initiatives. Drawing on technical studies, mana whenua input and community and stakeholder engagement, it identifies the key issues and opportunities facing the coast.
3. The findings indicate that the Otago coast is facing a range of complex and interrelated challenges. Biodiversity loss, degradation of coastal habitats, pressures on wildlife, declining water quality, biosecurity threats, and the effects of climate change and coastal hazards are affecting the health and resilience of coastal environments. At the same time, growth, development, and increasing demand for coastal space create challenges in balancing environmental protection with social, cultural, recreational, and economic aspirations. The report also identifies information gaps and uncertainty that can make decision-making more difficult.
4. Despite these challenges, the coast presents significant opportunities. These include strengthening integrated coastal management and recognition of Kāi Tahu values, customary relationships, and mana moana within coastal management, restoring coastal ecosystems, improving public access and recreation opportunities, increasing resilience to climate change and coastal hazards, and supporting sustainable economic activities such as tourism, fisheries, aquaculture, and port operations. Opportunities also exist to improve monitoring and research, support adaptive management, and encourage greater stewardship and community involvement in caring for the coast.
5. A consistent theme throughout the report is the importance of a holistic and integrated *ki uta ki tai* (mountains to sea) approach that recognises the connections between land, freshwater and coastal environments. Many coastal issues, including biodiversity decline, water quality, biosecurity, coastal hazards and climate change, are interconnected, while others originate beyond the coastal marine area. Therefore, these issues require coordinated responses across agencies, communities and sectors. Achieving positive outcomes for the coast will therefore depend on integrated and collaborative approaches that recognise these interconnections.
6. Overall, the report concludes that Otago's coast faces increasing environmental and development pressures, but also significant opportunities. The new planning framework provides an opportunity to establish a more integrated, adaptive and collaborative approach to coastal management in Otago. Future planning should seek to protect and

enhance coastal ecosystems and biodiversity, improve resilience to future change, recognise and provide for Kāi Tahu values and interests, support public access and enjoyment of the coast, and enable the sustainable use and development of coastal resources. In doing so, it can help ensure that the distinctive environmental, cultural, social, and economic values of the Otago coast are maintained and enhanced for present and future generations.

7. Drawing on the key issues and opportunities identified in this report, the future coastal planning framework should seek to:

- Adopt a *ki uta ki tai* (mountains to sea) approach to integrated management.
- Strengthen recognition of Kāi Tahu values, mana moana (customary authority relating to the coastal marine area) and mahika kai.
- Improve resilience to climate change and coastal hazards.
- Protect and restore biodiversity and coastal ecosystems.
- Support adaptive management through monitoring and research.
- Maintain public access while protecting sensitive environments.
- Enable sustainable economic development.
- Strengthen marine biosecurity management.
- Protect natural character, landscapes, surf breaks and historic heritage.
- Promote nature-based solutions and collaborative stewardship.

Overview of Otago's Coastal Issues and Opportunities

Coastal management foundations: Principles and approaches for effective coastal management

Integrated management

Issue

- [IM-I1: Fragmented management approaches can make it difficult to effectively address interconnected coastal issues](#)

Opportunity

- [IM-O1: Integrated management can improve outcomes for coastal communities and environments](#)

Using regulatory and non-regulatory tools

Issue

- [RNR-I1: Regulation is not always effective and not always the best approach in addressing coastal issues](#)

Opportunity

- [RNR-O1: Non-regulatory tools can support positive coastal outcomes](#)

Collaboration and adaptive management

Issue

- [CAM-I1: Many coastal issues require coordinated action across organisations, communities and resource users.](#)

Opportunity

- [CAM-O1: Collaboration and adaptive management can improve coastal outcomes](#)

Knowledge, monitoring and understanding coastal environments

Issue

- [KM-I1: Uncertainty and information gaps can make it difficult to understand and manage coastal issues](#)

Opportunity

- [KM-O1: Increased investment in monitoring and research can improve understanding of coastal environments](#)

Coastal uses and development: How people interact with, use and develop the coast.

Building well-functioning coastal communities

Opportunities

- [CC-I1: Coastal land use and urban development can strengthen connections between people and the coast](#)
- [CC-O1: Coastal land use and urban development support economic development](#)

Public access

Issues

- [PA-I1: Access to the coastal environment can be limited by structures and physical barriers.](#)
- [PA-I2: Public access may need to be managed to protect coastal values and public health and safety](#)
- [PA-I3: Vehicle use in the coastal environment can damage natural and cultural values, reduce resilience to coastal hazards, and affect the safety or enjoyment of others.](#)

Opportunity

- [PA-O1: Improving access and connections can increase use and enjoyment of the coast.](#)

Occupying space

Issue

- [OS-I1: Exclusive occupation of the coastal marine area can limit public use of coastal space and create conflict between activities.](#)

Opportunity

- [OS-O1: Providing for activities and structures in the coast can contribute to social, cultural or cultural economic benefits](#)

Removal and deposition of natural material

Issues

- [RD-I1: Removing natural materials can have adverse effects on the coastal environment](#)
- [RD-I2: Deposition of material on the seabed and foreshore can have adverse effects on the coastal environment.](#)

Opportunity

- [RD-O1: Removal and deposition of coastal natural material can bring benefits to people and communities.](#)

Coastal infrastructure

Issues

- [INF-I1: Inappropriate use and development can compromise the performance of regionally and nationally significant coastal infrastructure.](#)
- [INF-I2: Coastal infrastructure can have adverse effects on coastal processes, values, and activities](#)
- [INF-I3: Coastal infrastructure is vulnerable to coastal processes](#)

Opportunities

- [INF-O1: Coastal infrastructure supports recreation, tourism and community wellbeing.](#)
- [INF-O2: Future infrastructure development provides an opportunity to reduce environmental impacts and improve resiliency](#)

Commercial ports

Issues

- [CP-I1: Commercial port activities can have an adverse impact on coastal processes and values.](#)
- [CP-I2: Activities in the coastal environment can adversely affect the efficient and safe operation of commercial port activities.](#)
- [CP-I3: Commercial port activities can have adverse effects on public access and recreational activities.](#)

Opportunity

- [CP-O1: Recognise the national and regional significance of Port Otago.](#)

Marine aquaculture

Issues

- [AQ-I1: Marine aquaculture can have adverse effects on the marine environment.](#)
- [AQ-I2: Marine aquaculture can conflict with other activities, uses and values associated with coastal space.](#)

Opportunities

- [AQ-O1: Marine aquaculture can support economic development and contribute to the social, economic and cultural well-being of communities in Otago.](#)
- [AQ-O2: Marine aquaculture can have positive impacts on biodiversity.](#)

Biosecurity

Issues

- [BS-I1: Activities in or near the Coastal Marine Area can increase the risk of invasive pests and disease spreading in Otago's coastal environment.](#)
- [BS-I2: Responding to marine pest incursions may create adverse effects on the marine environment](#)

Opportunity

- [BS-O1: Coastal planning and cross-agency collaboration can improve biosecurity management](#)

Coastal features and characteristics: The natural landforms, habitats, and processes that shape the coastal environment

Biodiversity

Issue

- [BD-I1: Coastal biodiversity is under threat from a wide range of human activities.](#)

Opportunity

- [BD-O1: Land use and urban development can create opportunities to enhance biodiversity with designs that restore or enhance coastal ecosystems](#)

Coastal natural hazards and climate change

Issues

- [CH-I1: Coastal hazards can negatively affect communities, infrastructure, historic heritage and the environment.](#)
- [CH-I2: Structures and other activities in the coastal marine area can exacerbate natural hazards](#)
- [CH-I3: Reliance on hard protection structures to manage coastal hazards can have adverse effects.](#)
- [CH-I4: Shoreline erosion is exposing contaminated sites in the coastal environment](#)

Opportunity

- [CH-O1: The effects of coastal natural hazards are managed to support resilient communities](#)

Water quality

Issue

- [WQ-I1: Activities undertaken on land, in freshwater and in the coastal marine area can have adverse effects on coastal water quality.](#)

Opportunity

- [WQ-O1: Managing water quality through integrated management](#)

Historic Heritage

Issue

- [HH-I1: Inappropriate subdivision, use, and development in the coastal environment can cause adverse effects on historic heritage.](#)

Natural character and outstanding natural features and landscapes

Issues

- [NC-I1: Natural character of the coastal environment can be affected by the modification of natural systems and processes including exclusive occupation.](#)
- [NC-I2: Outstanding natural features, landscapes and seascapes within the coastal environment can be affected by changes in the type or intensity of activities on land and in the marine area](#)

Surf breaks

Issue

- [SB-I1: The use and enjoyment of surf breaks can be impacted by activities on land and in the coastal marine area.](#)

Opportunity

- [SB-O1: Improved management and access to Otago's surf breaks can support economic, recreational and community benefits](#)

Kāi Tahu values and relationship with the coast

Mana motuhake

Issue

- [KT-I1: The ability of Kāi Tahu mana whenua to exercise rakatirataka, manaakitaka and kaitiakitaka can be hampered by a lack of recognition of mana moana.](#)

Opportunity:

- [KT-O1: Mana whenua-led environmental management and improved involvement of mana whenua in decision-making would support the relationship of Kāi Tahu to the coast and contribute to positive environmental outcomes.](#)

Mauri

Issue:

- [KT-I2: Degradation of the coastal environment, including wāhi tūpuna, wāhi tapu, taoka and mahika kai, has negative impacts on the connection of Kāi Tahu to the coast.](#)

Opportunity:

- [KT-O2: Use of mātauraka alongside other science programmes can improve the health of the coastal environment and restore the mauri of valued places.](#)

Mahika kai

Issue:

- [KT-I3: Lack of recognition for customary fisheries and degradation of the coastal environment has limited the ability of Kāi Tahu to manage and use these resources](#)

Opportunity:

- KT-O3: Active mana whenua leadership in management of the coastal environment provides the opportunity to restore mahika kai and ensure mahika kai species and habitats are resilient to climate change.

Ahi kā**Issue:**

- KT-I4: The ability for Kāi Tahu to live on and use native reserves and Māori land has been impeded by institutional and regulatory barriers.

Opportunity:

- KT-I4: Improved infrastructure connections and removal of barriers to land development would support reconnection of Kāi Tahu whānau to the coastal environment and enhance opportunities for mana whenua to work with neighbouring communities to achieve environmental outcomes.

Contents

Executive Summary	2
Overview of Otago's Coastal Issues and Opportunities	4
Introduction	12
Purpose of this report	12
Overview of report structure.....	12
Scope of report.....	13
Inputs in the development of this report	14
Spatial extent of the Otago coast	15
Key features and values of the Otago coast	18
Coastal rivers, wetlands and beaches	18
Coastal settlements and infrastructure	18
Significance to Kāi Tahu	19
Recreational, economic and wider community values.....	19
Marine life and coastal ecosystems	19
Otago's Coastal Issues and Opportunities.....	21
Coastal management foundations: Principles and approaches for effective coastal management.....	21
Integrated management	21
Using regulatory and non-regulatory tools	22
Collaboration and adaptive management	23
Knowledge, monitoring and understanding coastal environments.....	24
Coastal uses and development: How people interact with, use and develop the coast.	26
Building well-functioning coastal communities	26
Public access	27
Occupying space.....	32
Removal and deposition of natural material.....	33
Coastal infrastructure.....	35
Commercial ports.....	39
Marine aquaculture	41
Biosecurity.....	44
Coastal features and characteristics: The natural landforms, habitats, and processes that shape the coastal environment.....	48

Biodiversity.....	48
Coastal natural hazards and climate change	51
Water quality	56
Historic Heritage.....	58
Natural character and outstanding natural features and landscapes.....	60
Surf breaks.....	63
Kāi Tahu values and relationship with the coast	66
Mana motuhake (autonomy, self-determination).....	66
Mauri (life-supporting capacity)	67
Mahika kai.....	68
Ahi kā (long-burning fires of occupation)	69
Conclusion	71
References	73
Appendix A: Roles, responsibilities, regulatory functions and limitations, and management approaches for the Otago coast	78
Roles and responsibilities in coastal management.....	78
Regulatory functions and limitations	79

Introduction

10. The Otago Regional Council (ORC) is responsible for managing Otago's Coastal Marine Area (CMA) under the Resource Management Act 1991 (RMA) and will retain this responsibility under the Natural Environment Act 2026 and Planning Act 2026.¹ The Regional Plan: Coast for Otago (Coast Plan) currently supports ORC in carrying out this role. However, under the new legislative framework the Coast Plan will be replaced with a new natural environment plan and land-use plan for the coast.

Purpose of this report

11. The purpose of this report is to identify the key issues and opportunities relevant to the Otago coast. This will inform how coastal management is carried forward within the new resource management system.
12. This Issues and Opportunities Report is an early step in reviewing Otago's coastal management framework. It has been prepared during a period of significant national resource management reform. As a result, its findings are not intended to support a like-for-like replacement of the Coast Plan. Instead, they will provide a foundation for future regional planning, including the development of a new regional spatial plan, and a combined regional natural environment plan and land use plan, while also helping to guide complementary non-regulatory actions and initiatives.

Overview of report structure

13. This report examines the key issues and opportunities facing the Otago coast across four broad themes.

Coastal management foundations: Principles and approaches for effective coastal management.

14. This theme includes well-functioning coastal communities, information and understanding of coastal environments, integrated management, the use of regulatory and non-regulatory tools, and collaboration and adaptive management. These matters underpin effective management across all other themes and recognise that many coastal issues are complex and interconnected, often requiring coordinated responses across sectors, agencies and communities.

Coastal uses and development: How people interact with, use and develop the coast.

15. This theme includes land use and urban development, public access, structures and activities that occupy coastal space, the extraction or deposition of natural materials, coastal infrastructure, commercial ports, marine aquaculture, and biosecurity.

¹ Under section 228 of the Natural Environment Act 2026 and section 217 of the Planning Act 2026, regional councils retain responsibility for managing the coastal marine area.

Coastal features and characteristics: The natural landforms, habitats, and processes that shape the coastal environment

16. This theme encompasses the natural, cultural and physical characteristics that contribute to the distinctive qualities of the Otago coast, including biodiversity, water quality, historic heritage, natural character, landscapes and seascapes and surf breaks. Coastal natural hazards and climate change are also included because they influence how the coast behaves and changes over time.

Kāi Tahu values and relationship with the coast

17. This theme explores the relationship of Kāi Tahu with the coastal environment in Otago. It highlights the importance of mana moana (customary authority relating to the CMA), mahika kai (practices, knowledge, and activities related to food gathering), and the ability of Kāi Tahu to act as kaitiaki (guardian, trustee). The relationship of Kāi Tahu with the coastal environment in Otago, and associated customary fisheries and aquaculture interests, is recognised in Treaty settlement legislation and must be considered in resource management planning.²
18. While the report is organised around these four themes, many themes overlap. Where appropriate, cross-references have been included to direct readers to related issues or opportunities discussed elsewhere in the report.

Scope of report

19. Regional councils are responsible for enabling, regulating and managing the use, protection and enhancement of the natural environment within their region, including managing the CMA and the effects of activities on its resources and values.³ Within this role, ORC manages a range of activities in the CMA including the occupation of coastal space, disturbance of the seabed, reclamation, structures such as wharves and seawalls, and the deposition and removal of natural materials like sand and shingle.
20. Appendix A outlines the activities that ORC can manage under the RMA and its successor, the Natural Environment Act, and those activities that fall outside the scope of its statutory responsibilities.
21. While the primary focus of this report is the CMA, activities occurring on the landward side of the Mean High Water Springs (MHWS), the highest line that regular high tides reach, can also impact on coastal processes, values and wellbeing of its coastal communities. Some of these activities, such as land use activities outside the CMA that result in contaminants being discharged to coastal waters, fall within the responsibilities of regional councils.

² Section 6(e) of the Resource Management Act 1991 requires that "the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga, " is recognised and provided for, while section 8 requires that the principles of the Treaty of Waitangi are taken into account. The Natural Environment Act that replaces the Resource Management Act 1991 also recognises Treaty settlement obligations in section 8.

³ Section 30 of the Resource Management Act 1991 and Section 228 of the Natural Environment Act 2026.

Others are managed by different agencies. For example, the provision and operation of public toilets and management vehicle access to the coast are generally the responsibility of territorial authorities.

22. Feedback from the community also highlighted that the provision of amenities on the landward side of MHWS influences how people access and use the coast. Understanding their environmental footprint and how their location and design can influence people's use and enjoyment of the coast, can help inform decisions about coastal management.
23. For these reasons, the scope of this report extends beyond the CMA and the statutory responsibilities of regional councils where this is necessary to understand the issues and opportunities affecting the Otago coast.

Inputs in the development of this report

24. Many of the issues and opportunities discussed in this report were identified through a review of existing reports on the Otago coast, alongside findings from technical studies undertaken by ORC and other agencies.⁴
25. Mana whenua perspectives have been incorporated through the work of Aukaha Ltd, who engaged with Otago rūnaka to identify their values and concerns.⁵ The Kāi Tahu issues and values identified in this report have been derived from engagement with rūnaka, the Kāi Tahu ki Otago Natural Resource Management Plan 2005, Te Tangi a Tauira – The Cry of the People is the Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 and Resource Management Issues of Importance to Iwi described in the Otago Regional Policy Statement 2021 (ORPS).
26. To inform this report ORC sought feedback from the public and stakeholders on coastal management issues and opportunities through a combination of online and in-person engagement. An online survey and supporting discussion document were developed to seek views on various coastal management topics. The discussion document presented a draft set of issues and opportunities to support discussion and gather feedback. Community members were invited to attend public drop-in sessions, while stakeholders participated in workshops focused on specific topics. These engagement activities were undertaken between 13 July and 10 August 2026 and helped inform the findings of this report. A more detailed summary of the engagement process and feedback received is provided in the *Otago Coast Engagement Report. Summary of Feedback on Issues and Opportunities for the Otago Coast, July-August 2026* (ORC, October 2026)

⁴ Te Awa Ōtākou Issues & Opportunities Report, (2025); Giles, H. Pisces Consulting Limited (2026) Information and advice for managing the effects of marine aquaculture in the Otago region.(2025)

⁵ The term mana whenua refers to the iwi or hapū that hold customary authority and responsibilities within a particular area through ancestral occupation and whakapapa connections. The term Rūnaka refers to the representative governing body of a Kāi Tahu community, responsible for matters relating to its people, resources, and area of interest.

Spatial extent of the Otago coast

27. Otago's CMA extends from the line of MHWS to the outer limits of the territorial sea at 12 nautical miles (22.2 kilometres), from the Waitaki River in the north to Wallace Beach in the south (See **Figure 1** Northern Otago and **Figure 2** Southern Otago). It includes the sea, the airspace above it, the seabed, and those parts of the foreshore covered and uncovered by the tide.



Coastal Marine Area

Otago Regional Council's Northern coastal area of responsibility



Otago
Regional
Council



Figure 1: Spatial extent of the Otago coastal Marine Area (Northern Otago)

Coastal Marine Area

Otago Regional Council's Southern coastal area of responsibility



Figure 2: Spatial extent of the Otago coastal Marine Area (Southern Otago)

Key features and values of the Otago coast

28. The Otago coast is one of New Zealand's most striking and diverse coastal landscapes, where dramatic natural features create a strong sense of place. The sweeping beaches, rugged cliffs and volcanic landforms that now form the Otago Harbour, create a coastline rich in wildlife habitats and offer a unique mix of natural and historic heritage, cultural significance, and recreational opportunities, that support community wellbeing and regional prosperity. Otago's 480-kilometre-long coastline ranges from the gravel beaches of the Waitaki River fan in the north to the forested, rugged Catlins coastline in the south.

Coastal rivers, wetlands and beaches

29. Major rivers, like the Waitaki and Clutha/Mata-Au, along with many smaller rivers, flow into the coast, creating estuarine wetlands that support significant wildlife. These rivers also supply sediments to many beaches of the eastern South Island.
30. Coastal wetlands are often connected to forested catchments that extend to the sea. These continuous land-sea ecosystems are now a rare feature on the New Zealand mainland, where coastal forest connections have largely been lost. In recent times, much of the coastline has been observed to be slowly retreating at varying rates⁶ due to a combination of climate change and natural coastal processes, although some small areas are advancing.
31. Beaches such as St Clair, Brighton, and Kākā Point provide opportunities for swimming and beach activities, including surfing. The Otago Harbour is a hub for rowing, sailing, and inshore fishing. Aramoana, Karitāne and Taieri Mouth are popular for surfcasting and small-boat fishing, and Port Chalmers and Careys Bay provide sheltered launching.

Coastal settlements and infrastructure

32. The main urban coastal centres in Otago are Ōamaru and Dunedin, and there are numerous smaller townships and settlements distributed along the coastline. Kākanui and Hampden are well-known holiday destinations, while Moeraki is a prominent fishing village with a jetty and boat-launching facilities.
33. Although numerous coastal structures are present along the Otago coastline, most are concentrated within Otago Harbour, reflecting the significant recreational and commercial shipping demands of Dunedin, Otago's largest city. In contrast, smaller coastal communities typically have limited infrastructure, often consisting of only a wharf or a rocky seawall. Otago Harbour also accommodates the region's principal commercial port, Port Otago, which serves as the primary cargo port for the lower South Island. Port Chalmers provides access for large cruise vessels, while Dunedin wharf provides access for smaller vessels.

⁶ National Institute of Water & Atmospheric Research Ltd (NIWA) Waitaki district coastal hazards report, 2018035CH (March 2019) and MacDonald, K, Jacobs New Zealand Limited (July 2021), Molyneux Bay and Clutha Delta morphology investigation

34. North of Otago Harbour, coastal settlements include Waikōuaiti, Karitāne, Sea Cliff, Warrington, Waitati, Pūrākanui, Osborne, Long Beach, and Aramoana. Around Otago Harbour are the settlements of Portobello, Harwood, St Leonards, and Port Chalmers. To the south of Dunedin City, coastal communities include Brighton, Ocean View, Westwood, and Taieri Mouth.

Significance to Kāi Tahu

35. The coastal environment is particularly significant for Kāi Tahu. Most permanent Kāi Tahu settlements in Otago were established on the coast, where winters were milder, and kaimoana (seafood) resources abundant. Today, Kāi Tahu communities are still based around ancestral marae at Moeraki, Karitāne and Ōtākou, with significant tracts of Māori land also located in other coastal areas such as Pūrākaunui, Taieri Mouth, Kaka Point and Tautuku. The coastal waters and processes were integral to the way of life tūpuna (ancestors) enjoyed, and the coastal environment continues to support significant mahika kai resources.⁷ The coastal waters are also the receiving environment for fresh water, gravels and sediment from the land, which sustain natural processes and the domain of Takaroa⁸, the atua (god) associated with the oceans and seas and their ecosystems.

Recreational, economic and wider community values

36. The coast is important for wellbeing, community identity, and regional character. It is a place where fishing, food gathering, and everyday enjoyment are woven into community life. Beaches shape the region's summer culture and provide spaces for relaxation and active recreation such as boating and surfing. The coastal environment also underpins economic activity, supporting tourism, fisheries, aquaculture, and port-related transport and trade. Coastal properties are highly valued for their outlook and lifestyle appeal, reflecting the strong connection people have with this unique environment.

Marine life and coastal ecosystems

37. The Otago coast supports rich marine life. It is home to a number of iconic species, such as toroa/northern royal albatross, kororā/little blue penguin and hoiho/yellow-eyed penguin. Kekenō/New Zealand fur seals commonly haul out on Otago's rocky coasts, while whakahao/New Zealand sea lion can be found on many sandy beaches. More than 80 protected areas lie along the landward edge of Otago's coastline, ranging from scenic, recreational, and historical reserves to wildlife and bird sanctuaries. Most are managed by the Department of Conservation (DOC), with others are managed by territorial authorities.⁹ Our healthy coastal systems also act as natural buffers, helping communities adapt to extreme weather and rising sea levels.

⁷ Gathering of food and natural materials by Kāi Tahu whānui in accordance with tikaka, the places where those resources are gathered, and the work, methods and cultural activities involved in obtaining them.

⁸ Atua of the sea and fish, he was one of the offspring of Rangi-nui and Papa-tū-ā-nuku and fled to the sea when his parents were separated. Sometimes known as Tangaroa-whaiariki.

⁹ The territorial authorities within the Otago Region with a border to the coast are the Waitaki District Council, Dunedin City Council and Clutha District Council.

38. Otago has one established taiāpure, the East Otago Taiāpure, one established mātaimai, the Ōtākou Mātaimai Reserve, and one proposed mātaimai.^{10 11} Taiāpure and mātaimai are fisheries management tools that allow tangata whenua to protect and sustain traditional fishing grounds using their own knowledge and practices. Taiāpure provide for local management in areas of special customary significance, while mātaimai recognise traditional food-gathering areas and prohibit commercial fishing.¹²
39. In addition to customary fisheries management areas, a network of five new marine reserves, known as Te Au Roa o Te Rakihouia, came into effect in July 2026. These reserves aim to protect special and unique marine habitats and marine life along the Otago coast. Together they cover 308 square kilometres or four per cent of the Otago CMA.¹³ Six Aquaculture Settlement Areas have also recently been established in Otago.¹⁴ These are specific coastal areas set aside for iwi as part of the Māori Commercial Aquaculture Settlement.¹⁵ They are not marine reserves or protected areas, but areas where iwi have the right to develop aquaculture.
40. The Otago coast supports a diverse range of natural, cultural, recreational and economic values that contribute significantly to community wellbeing, identity and regional prosperity. Understanding these values provides important context for the issues and opportunities identified in this report. As Otago's population and economy continue to grow, increasing pressure is likely to be placed on these values over time, reinforcing the importance of effective and sustainable coastal management.

¹⁰ Otago Regional Council, Ministry for Primary Industries (2016, August) 'Ōtākou Mātaimai Reserve' Retrieved from <https://www.orc.govt.nz/media/r2akxnaw/otakou-mataimai-reserve-2016.pdf>

¹¹ Ellison, M (2025, June) 'Puketeraki' Mātaimai Application' Retrieved from <https://www.mpi.govt.nz/consultations/application-for-puketeraki-mataimai-reserve-east-otago>

¹² Te Tiaki Mahinga Kai, 2026 "'rea Management Tools (AMTs)' Retrieved from <https://www.mahingakai.org.nz/resources/what-are-amts/>

¹³ Department of Conservation (2026) 'New marine reserves for the southeast of the South Island' retrieved from <https://www.doc.govt.nz/news/media-releases/2026-media-releases/new-name-for-otagos-marine-reserve-network/>

¹⁴ Minister of Oceans and Fisheries (October 2024) 'Notice Declaring Aquaculture Settlement Areas in the Otago Region for the Purposes of the Māori Commercial Aquaculture Claims Settlement Act 2004' (Notice No. MPI 1869)

¹⁵ The Māori Commercial Aquaculture Settlement is a Treaty settlement that recognises Māori interests in the development of New Zealand's aquaculture industry, such as marine farming of mussels, salmon, and oysters. It is implemented through the Māori Commercial Aquaculture Claims Settlement Act 2004, which provides for the full and final settlement of Māori commercial aquaculture claims arising since 21 September 1992.

Otago's Coastal Issues and Opportunities

Coastal management foundations: Principles and approaches for effective coastal management

42. Several recurring themes emerged during the preparation of this report and the associated community engagement process. These themes influence many of the issues and opportunities identified elsewhere in this report and are important considerations for future coastal management. They often involve challenges arising from the interactions between environmental, social, cultural and economic factors, or opportunities that depend on coordinated responses across different sectors and agencies.
43. The following sections discuss the key issues and opportunities associated with these cross-cutting themes.

Integrated management

Issue IM-I1: Fragmented management approaches can make it difficult to effectively address interconnected coastal issues

44. Many of the issues discussed throughout this report reflect the interconnected nature of our environment. Activities undertaken on land, in freshwater environments, and in the CMA can influence one another and have impacts beyond their immediate location.
45. Historically, resource management has often separated responsibility for different parts of the natural environment. Under the RMA, coastal, freshwater, land use and other resource management issues have frequently been addressed through separate planning instruments and management frameworks and multiple regulatory authorities. These approaches have not always supported an integrated approach to the management of activities and their receiving environments.

Opportunity IM-O1: Integrated management can improve outcomes for coastal communities and environments

46. Community and stakeholder engagement consistently highlighted the importance of managing the coast as part of a connected system rather than as separate environments. An integrated approach to coastal management recognises the ki uta ki tai (mountains to sea) connection and acknowledges that activities occurring within inland catchments, rivers, estuaries, harbours and coastal waters influence coastal health.
47. Integrated management provides an opportunity to better align decision-making across land, freshwater and coastal environments, improve consideration of cumulative effects and support more coordinated responses to issues. As pressures on the coast continue to increase, integrated management is likely to become increasingly important for maintaining coastal values while supporting resilient communities and sustainable economic activity.

Using regulatory and non-regulatory tools

Issue RNR – I1: Regulation is not always effective and not always the best approach in addressing coastal issues

48. While regulatory tools play an important role in managing activities and environmental effects, regulation may not always be the most effective way to address complex coastal issues or achieve positive long-term outcomes.
49. Community and stakeholder engagement highlighted that many coastal issues are also influenced by public awareness, individual behaviour, access to information and community stewardship. Examples discussed throughout this report include interactions with wildlife, marine biosecurity, vehicle use on beaches and public access. In many cases, participants recognised that positive outcomes depend not only on rules and enforcement, but also on people understanding the values being protected.

Opportunity RNR-O1: Non-regulatory tools can support positive coastal outcomes

50. Feedback received during engagement identified opportunities to complement regulatory approaches with education, research, monitoring, stewardship and community involvement.
51. Education and information sharing were frequently identified as tools for improving awareness of coastal values, responsible recreation, wildlife protection and biosecurity risks. Improved awareness and understanding of coastal values, pressures and management responses can also encourage better stewardship and support positive environmental outcomes.
52. A range of national and international programmes help build understanding of the relationship between people and the marine environment. For example, NIWA's marine monitoring and research programmes contribute to knowledge of New Zealand's coastal and marine environments, while the Intergovernmental Oceanographic Commission (IOC) of UNESCO's Ocean Literacy Programme promotes understanding of the ocean's influence on humanity and humanity's influence on the ocean.¹⁶ These initiatives demonstrate the important role that education and knowledge sharing can play in supporting informed decision-making and responsible environmental stewardship.
53. Community-led initiatives, including biodiversity restoration, predator control, native planting and stewardship programmes, were also recognised as important ways of improving environmental outcomes while strengthening people's connection to the coast. However, restoration or enhancement initiatives may not always be able to reverse

¹⁶ <https://oceanliteracy.unesco.org/about> The Ocean Literacy programme of IOC of UNESCO fosters global understanding of the ocean's influence on humanity and humanity's influence on the ocean. NIWA <https://niwa.co.nz/oceans?pt=10#filters>

biodiversity loss due to factors such as changing species distributions and environmental change.

54. Together, regulatory and non-regulatory tools provide complementary approaches to coastal management and can support healthy coastal environments, resilient communities and shared stewardship of the Otago coast.

Collaboration and adaptive management

Issue CAM-I1: Many coastal issues require coordinated action across organisations, communities and resource users

55. The Otago coast is used, valued and managed by a wide range of organisations, communities and individuals. Regional councils, territorial authorities, mana whenua, government agencies, industry groups, community organisations, landowners and coastal users all have roles and responsibilities that influence coastal outcomes. As a result, many of the issues identified throughout this report cannot be effectively addressed by any single organisation acting alone.
56. Participants frequently identified the need for better coordination between agencies and stronger engagement with communities and mana whenua. Issues such as biodiversity protection, biosecurity, coastal hazards, public access, infrastructure planning and the management of recreational and commercial activities often involve multiple organisations, competing interests and interconnected values.

Opportunity CAM-O1: Collaboration and adaptive management can improve coastal outcomes

57. Community and stakeholder engagement identified opportunities for stronger partnerships between councils, mana whenua, government agencies, industry groups, community organisations and coastal users.
58. Coastal environments are dynamic and continually changing. Management approaches need to respond to changing circumstances to remain effective in the long term.
59. Adaptive management provides an opportunity to respond to changing circumstances and new information as it becomes available. Monitoring, evaluation and periodic review can help ensure management responses remain effective and responsive to changing conditions. Together, collaboration, stewardship and adaptive management can support resilient communities, healthy ecosystems and the sustainable use of coastal resources over the long term.
60. Adaptive management approaches will be required in the new natural environment plan where environmental effects are uncertain. This includes activities such as marine aquaculture and marine primary production, where monitoring and adaptive responses may be required to manage potential effects on indigenous biodiversity.

Knowledge, monitoring and understanding coastal environments

Issue KM-I1: Uncertainty and information gaps can make it difficult to understand and manage coastal issues

61. Robust information and a sound understanding of coastal environments supports effective decision-making. While a significant amount of information exists about the Otago coast, knowledge gaps remain in relation to topics such as biodiversity, coastal processes, water quality, cumulative effects, historic heritage and the condition and functioning of marine ecosystems.
62. The scale and diversity of the Otago coast, together with competing priorities and resource constraints, can limit the ability to undertake comprehensive monitoring across all coastal environments. As a result, information is often unevenly distributed across locations and topics, and information gaps remain for some parts of the coast. Stakeholders highlighted that limitations in baseline information and long-term monitoring can make it difficult to identify trends, understand environmental change and assess cumulative effects.
63. Examples identified throughout this report include the lack of baseline data on benthic communities, uncertainty regarding the condition of marine ecosystems, the cumulative effects of activities on coastal biodiversity and water quality and the effects of climate change and sea-level rise on coastal processes and hazards.
64. Information about historic sites and archaeological sites are held by different agencies.¹⁷ There is currently no single, comprehensive and up-to-date record of historic heritage and archaeological sites within the Otago CMA. This creates challenges for effective management of historic heritage and increases the risk that unidentified sites may be inadvertently damaged.

Opportunity KM-O1: Increased investment in monitoring and research can improve understanding of coastal environments

65. Community and stakeholder engagement identified opportunities to improve monitoring, research, and information sharing. Improved understanding of the coastal environment, the activities occurring within it, and their effects can support more informed planning and management decisions.
66. Investment in monitoring, research and information management can improve understanding of coastal processes, biodiversity, water quality, natural hazards, heritage values and cumulative effects. Better information can help identify emerging issues, measure environmental change over time and improve understanding of how activities on land, in freshwater and within the CMA interact with each another.

¹⁷ These include Heritage New Zealand, Pouhere Taonga and the New Zealand Archaeological Association's ArchSite database, which is updated periodically.

67. While uncertainty will always remain, ongoing monitoring and research can improve understanding of the coast and support more informed decision-making.

Coastal uses and development: How people interact with, use and develop the coast.

68. The ability to access, use and develop the natural and physical resources of the coast is essential for the social, cultural, and economic well-being of the Otago communities. The CMA supports a variety of activities. Some of these, such as the development and expansion of coastal settlements, have long-lasting effects on the coastal environment. Others, such as the passage of vessels, are temporary in nature or have no or only minor environmental effects.

Building well-functioning coastal communities

69. The Otago coast contains a diverse network of settlements, urban areas and rural communities that rely on the coastal environment for recreation, employment, infrastructure, tourism, cultural identity and community wellbeing. Community and stakeholder engagement consistently highlighted the importance of maintaining vibrant and resilient coastal communities and strengthening people's connection to the coast.

Opportunity CC-O1: Coastal land use and urban development can strengthen connections between people and the coast

70. Otago's coastal towns and communities each have distinct histories, landscapes, cultural values and relationships with the sea. Feedback from the public identified opportunities to strengthen these connections through additional coastal amenities, improved walking and cycling connections, public spaces and enhancements to existing infrastructure. Participants also emphasised the importance of ensuring people can continue to enjoy the coast.
71. Development of coastal land can reinforce these characteristics, celebrate local identity and maintain the qualities that make individual coastal places unique. Thoughtfully planned development can improve public access to coastal environments, create new recreational opportunities, support active transport networks, and enhance community wellbeing. This can contribute to a stronger sense of place for residents and visitors and help retain the diversity of Otago's coastal communities.

Opportunity CC-O2: Coastal land use and urban development support economic development

72. Coastal urban settlements and coastal rural areas contribute to the region's economy by supporting a wide range of activities, including ports, tourism, recreation, hospitality, marine industries, fisheries and aquaculture-related services. Appropriate urban development and land use can create attractive, compact, and connected coastal communities that make efficient use of land and infrastructure and help provide the services and workforce needed to support these activities while recognising environmental, cultural and landscape values.
73. The requirements to develop a regional spatial plan and a land use plan for the CMA under the Planning Act 2026 provides an opportunity to better coordinate future growth,

infrastructure investment and land use planning within coastal communities.¹⁸ This includes identifying opportunities to improve access and connections, planning for population growth, and reducing exposure to coastal hazards and climate change risks. Integrating these considerations into long-term planning can help create resilient coastal communities that continue to support both economic activity and community wellbeing.

74. Many of the issues and opportunities discussed throughout this report influence the ability of coastal communities to support economic activity. Maintaining public access, providing supporting infrastructure and managing coastal hazards all contribute to the long-term prosperity and resilience of coastal communities. Future planning and investment decisions provide opportunities to support thriving communities while maintaining the values that make the Otago coast distinctive.

Public access

75. The ability to access and enjoy the coast is an important contributor to people's quality of life and community well-being.¹⁹ Public access to the coast was consistently identified through community and stakeholder engagement as a fundamental value that should be protected and enhanced. Participants highlighted its importance for health and wellbeing, recreation, social connection, equity, and sense of place.
76. Access encompasses not only the ability to reach the coast, but also opportunities to view, experience and enjoy coastal environments. Stakeholder feedback generally supported public access to coastal areas, (including, in some circumstances vehicle access), viewing it as a key enabler of recreational activities, wellbeing, tourism, and people's connection to the natural environment. Coastal access trails also provide opportunities for people to enjoy and connect with the coastal environment.
77. Public access to the coast relies on the provision of adequate infrastructure, such as signage, tracks and cycleways, roads, parking areas, boat ramps, harbour access, navigation routes, public facilities and safe access points to the water.

¹⁸ The Planning Act 2026, s72 and s98

¹⁹ Section 4(2)(e)(i)-(ii) of the Marine and Coastal Area (Takutai Moana) Act 2011 recognises, through the protection of public rights of access, navigation, and fishing, the importance of the common marine and coastal area for its intrinsic worth; and for the benefit, use, and enjoyment of the public of New Zealand.

Issue PA-I1: Access to the coastal environment can be limited by structures and physical barriers.

78. Public access to and along the coast can be constrained by both natural coastal processes and human activities. Concerns were raised in the public drop-in sessions about the loss of access over time through coastal erosion, inundation and, for harbour users, sedimentation affecting navigation and mooring sites. Loss of sand can further restrict access to the coast. Well-known examples include St Clair Beach, Ocean Beach and St Kilda Beach in Dunedin, where sand loss has occurred due to a combination of a high energy coastline and modifications to natural coastal processes, such as the St Clair Seawall.²⁰ Erosion-related access issues were also identified through engagement along other parts of the Dunedin coast, including Brighton, Tunnel Beach, and Boulder Beach.
79. Loss of access can also be caused by ‘coastal squeeze’, which occurs when rising sea levels cause coastal habitats and shorelines to naturally migrate inland, but this movement is constrained by fixed infrastructure such as roads, seawalls, buildings, or other development. As a result, beaches and coastal habitats can be progressively reduced and access to and along the coast may become more difficult, especially at high tides as there is little or no beach left to walk on. *(see the Coastal natural hazards and climate change section of this report for more detail).*
80. Other barriers that impede access to the coast include roadworks, closed tracks and wheelchair access ramps not fit for purpose, and private boat sheds and jetties. Structures, such as roads with steep embankments also prevent physical access to coastal water, although they may provide viewing opportunities to the coast from the road or footpath and often connect coastal settlements with each other.
81. Modified coastlines and steep dune systems and coastal bluffs can create unsafe or impassible conditions for people wanting to access the coast. For example, dune systems that have been modified by planting marram grass for dune stabilisation, often have steeper or higher slopes than dunes dominated by native species. These altered dune systems can make access to the coast more difficult.

Issue PA-I2: Public access may need to be managed to protect coastal values and public health and safety

82. Many coastal wildlife habitats, including those of endangered species such as the whakahao/New Zealand sea lion and hoiho/yellow-eyed penguin, occur in areas that are also popular for recreation and tourism.²¹ For example, whakahao/New Zealand sea lions are regularly found on popular swimming beaches, and there is a high concentration of

²⁰ Tonkin and Taylor Limited, June 2011 ‘Ocean Beach Domain Reserve Management Plan Coastal issues and options’, Dunedin City Council retrieved from <https://ref.coastalrestorationtrust.org.nz/site/assets/files/8633/ocean-beach-coastal-issues-and-options-report.pdf>

²¹ Department of Conservation (2026) ‘A strategy to support the health of Hoiho/Yellow-eyed penguin’ retrieved from <https://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/penguins/yellow-eyed-penguin-hoiho/a-strategy-to-support-the-health-of-hoiho/>

breeding sites along the Otago Peninsula.²² Community feedback identified some areas where access was restricted to protect wildlife, particularly whakahao/New Zealand sea lion.

83. Engagement feedback frequently described encounters with native species as one of the most valued aspects of the coastal experience. However, increasing numbers of domestic and international visitors place pressure on sensitive environments, especially at hoiho/yellow-eyed penguin and whakahao/New Zealand sea lion breeding sites.²³ Visitors are often unaware of appropriate tikaka (the customary system of values and practices developed by Māori communities and individuals) and behaviour around endangered species.²⁴ As a result, tourism and recreational uses need to be managed to ensure activities do not threaten coastal values. Site-specific management responses, including closures or guided-only access, may be required to protect the most vulnerable species and habitats.²⁵
84. Participants generally recognised that public access should be actively managed to achieve an appropriate balance between public enjoyment, environmental protection and public health and safety. However, some noted that restrictions for dogs on beaches or in sensitive areas limits the available options for dog walking along the coast.
85. Coastal rehabilitation works, such as dune restoration, may also require temporary access restrictions to allow works to be undertaken or sites to recover. Where clear formal access is not provided, people may create multiple informal pathways, which can damage sensitive coastal habitats, destabilise dunes, and contribute to the degradation of indigenous vegetation and ecosystems.
86. Some coastal activities, such as marine aquaculture, marina and port operations and sand mining, may involve use of machinery, vessel movements, or operational hazards that require access restrictions for health and safety reasons. Similarly, access may also be restricted because of safety concerns associated with infrastructure or utilities such as roading and rail networks. In such instances, access may need to be temporarily or

²² DOC provides an interactive web map that shows the predicted suitable sites for whakahao/New Zealand sea lion breeding colonies on mainland New Zealand and potential surrounding human interaction areas on land. Department of Conservation (2026) 'Predicted suitable sites for NZ sea lions' retrieved from <https://www.doc.govt.nz/nature/native-animals/marine-mammals/seals/new-zealand-sea-lion/predicted-suitable-sites/>

²³ Department of Conservation (2026) 'A strategy to support the health of Hoiho/Yellow-eyed penguin' retrieved from <https://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/penguins/yellow-eyed-penguin-hoiho/a-strategy-to-support-the-health-of-hoiho/>

²⁴ DOC has developed a wildlife care code for Dunedin, which recommends that you stay 20m away from sea lions and other seals and 50m away from penguins. Department of Conservation(2018) 'Dunedin wildlife care code' retrieved from <https://dunedinhost.co.nz/wp-content/uploads/2018/12/Dunedin-Wildlife-Care-Code-AO-Poster-1.pdf>

²⁵ Te Rūnanga o Ngāi Tahu, Department of Conservation, Yellow-eyed Penguin Trust and Fisheries New Zealand (2019) 'Te Kaweka Takohaka mō te Hoiho 2019-2029'. Retrieved from <https://www.doc.govt.nz/globalassets/documents/conservation/native-animals/birds/sea-and-shore/te-kaweka-takohaka-mo-te-hoiho-2020.pdf>

permanently restricted. Public access may also need to be restricted temporarily because of weather events destabilising coastlines, leaving debris on beaches or creating water quality hazards.

87. Overall, participants expressed support for management measures such as controlling vehicle access, applying temporary restrictions in sensitive areas, using permit systems where appropriate, and implementing rules and bylaws to protect threatened species. Education was identified as an important tool to help people understand where access is appropriate and how recreational activities can occur while minimising environmental impacts.

Issue PA-I3: Vehicle use in the coastal environment can damage natural and cultural values, reduce resilience to coastal hazards, and affect the safety or enjoyment of others.

88. People use vehicles on beaches for a variety of reasons, including launching a boat, reaching a favourite fishing spot, or driving on hard sand. Vehicle access is also important for emergency services, surf lifesaving operations, and construction or maintenance activities undertaken along the coast.
89. However, vehicle use can damage coastal ecosystems and dunes, disturb wildlife, and degrade shellfish beds and bird nesting areas. Vehicles on beaches can also damage sites important to mana whenua and historic places, weaken natural coastal defences and reduce the safety and enjoyment of other beach users.
90. Views on vehicle use along the coast were mixed. Forty-six percent of survey respondents considered vehicle use to be a problem, while 33% did not and 21% were unsure. Concerns were raised across much of the coast, particularly in North Otago, Dunedin's coastal areas, and the Catlins and South Otago.
91. The most commonly identified concerns about vehicle use related to impacts on wildlife, including birds, penguins, seals, and sea lions, as well as damage to beaches, dunes, and other coastal environments. Safety, noise, and conflicts with other users were also commonly raised. Many respondents considered vehicle access unnecessary in some areas. Additional concerns included speeding on beaches, freedom camping, damage to planting and erosion-control works, parking pressures and limited enforcement.
92. Locations including Toko Mouth, Kākanui Estuary, Pūrākaunui and parts of the Catlins were identified in the public drop-in sessions as places where vehicle use was affecting wildlife, habitat or coastal amenity. Overall, feedback reflected a desire to balance practical access needs with environmental protection, public safety and enjoyment of the coast.

93. District and city councils play an important role in managing vehicle use on beaches and within the coastal environment through bylaws and reserve management plans.²⁶
94. While many respondents suggested that vehicle access was best managed through planning rules or access controls, some stakeholders highlighted that user behaviour can have greater impacts than the activities themselves, underscoring the importance of education about coastal access rights and responsibilities.

Opportunity PA-O1: Improving access and connections can increase use and enjoyment of the coast.

95. Many participants in the community and stakeholder engagement emphasised the importance of keeping coastal areas publicly accessible and ensuring people can continue to enjoy the coast at little or no cost. Importance was placed on retaining existing access where erosion is affecting roads, tracks, and access points.
96. Participants identified a range of opportunities to improve coastal access, including expanding access opportunities and improving connections between destinations. There was strong support for improved walking and cycling access, including shared coastal pathways and trail connections such as the Coastal Connection Trail, a partially built cycle and walking trail north of Dunedin, and the potential for a Dunedin-to-Ōamaru Trail.²⁷
97. Accessibility for people with disabilities was also raised in the community drop-in sessions. Suggestions to improve access included beach-access wheelchairs, improved facilities and more mobility-friendly access points.
98. Participants identified various locations where access could be improved, particularly on the Otago Peninsula and around the Otago Harbour, in North Otago, and in the Catlins. Participants also wanted to see improvement of access to beaches, estuaries, surf breaks and river mouths that are currently difficult to reach. They highlighted opportunities to improve pedestrian access around Otago Harbour, strengthen connections between the Dunedin city centre and waterfront, provide additional public spaces, and increase

²⁶ Dunedin City Council does not permit driving or parking on beaches except for launching or retrieving boats or in emergencies, because of concerns about environmental damage and conflicts with other users. Dunedin City Council (2026) 'Driving on the beach' retrieved from <https://www.dunedin.govt.nz/community-facilities/parks-and-reserves/driving-on-the-beach>;

Waitaki District Council does not have specific rules that ban or restrict driving on beaches, but its Roding Bylaw makes it an offence to cause damage to a "public place," which includes parks, reserves, and beaches. Waitaki District Council (2020), Roding Bylaw 2020, Clause 4.7 <https://www.waitaki.govt.nz/files/assets/public/v/1/files/our-council/policies-and-bylaws/bylaws/roding-bylaw-2020-traffic.pdf>

Clutha District Council restricts driving on beaches, including prohibiting driving on dunes, above the high-water mark (except in emergencies), and in ways that endanger people, plants, or native animals Clutha District Council (2023) Vehicles on Beaches Bylaw <https://www.cluthadcc.govt.nz/repository/libraries/id:2c0gik8bh17q9s5atec4/hierarchy/Documents/Vehicles%20on%20beaches%20bylaw/Vehicles%20on%20Beaches%20Bylaw%202023.pdf>

²⁷ Dunedin Tracks and Trails are a community group fundraising to build cycleway connections north of Dunedin (<https://www.dunedintracksandtrails.nz/coastal-connection>)

recreational opportunities. Some suggested a pedestrian bridge linking the city and waterfront. New access opportunities for boating and rowing activities were also identified on the Taieri/Taieri River at Henley.

Occupying space

99. Exclusive occupation of the CMA occurs when an activity or structure uses coastal space on land or sea to the exclusion of others. Under current legislation, no one may occupy the CMA unless allowed by a regional coastal plan or a resource consent.²⁸ A review of ORC's consents database shows that 82% of current coastal consents are for occupation of the CMA. The most common consent types are for moorings (30%), boat sheds (20%) and boat ramps (20%).²⁹ Coastal permits can authorise occupation of a specified area of coastal space, but only to the extent authorised by the permit and for the duration of its term.

Issue OS-I1: Exclusive occupation of the coastal marine area can limit public use of coastal space and create conflict between activities.

100. Access to the coast is important to the Otago community and, because the CMA is public space, exclusive occupation needs to be managed to achieve an appropriate balance between private and public use. Feedback from the community and stakeholders recognised the need for structures in the CMA and generally supported those that provide recreational, community or economic benefits. Respondents also emphasised the importance of ensuring that the public can continue to use structures like wharves and jetties, and occupation of coastal space does not unnecessarily prevent people from enjoying the coast.
101. Conflicts can arise when several activities want to use the same coastal space or rely on the same resources. Recreational uses like boating, fishing, swimming, surfing, and driving on beaches often occur in the same places as commercial activities such as aquaculture, port operations, and tourism. In these circumstances, activities can reduce one another's safety, enjoyment, or economic value. Considering how different coastal values and competing uses interact can improve the management of coastal space and the benefits people derive from the coastal environment.
102. Feedback also identified concerns about how coastal space is allocated in parts of the Otago Harbour and Ōamaru Harbour, particularly in relation to moorings and other structures that occupy public coastal space. Some participants questioned whether current arrangements appropriately balance recreational, commercial and public interests. Others questioned whether owners of private coastal structures should make a financial contribution for that use.

²⁸ Resource Management Act 1991, s12

²⁹ SLR Consulting New Zealand Limited (December 2025) 'Coastal Consent Data Monitoring Review'

Opportunity OS-O2: Providing for activities and structures in the coast can contribute to social, cultural or cultural economic benefits

103. Activities and structures in the CMA can provide for a variety of recreational, commercial or industrial purposes. Some recreational events or cultural activities may require short-term exclusive occupation that temporarily restricts public access, such as regattas or fireworks displays. Construction and maintenance work may also require temporary structures or exclusion zones for operational and safety reasons.
104. Structures such as boat ramps, slipways, jetties and wharves provide access to and support recreational use of the coast. Other structures, such as coastal infrastructure, boatsheds, marinas and port facilities play an important role in recreation and economic development. Heritage structures and historic boatsheds can also contribute to the character of the coast.
105. While feedback from community and stakeholder engagement indicated mixed views on structures and activities occupying coastal space, respondents were generally positive about structures that provide access to the coast, recreational opportunities and wider community benefits or heritage value, such as historic boatsheds. Respondents also identified opportunities for more moorings, particularly in Otago Harbour, and other public facilities such as filleting tables. Infrastructure that contributes to economic benefits were generally viewed favourably, provided an appropriate balance is maintained between of exclusive occupation of the coastal space and public access.

Removal and deposition of natural material

106. Under current legislation, activities that may disturb the foreshore or seabed are restricted. These activities generally require a resource consent unless they are permitted in a regional plan or national environmental standard.³⁰

Issue RD-I1: Removing natural materials can have adverse effects on the coastal environment.

107. Extraction of material from the seabed and foreshore provides economic opportunities but also carries environmental risks. A review of ORC's consents database shows that the most common reason for removing sand or shingle in Otago is dredging associated with the Ōamaru and Dunedin harbours, with only one consent for sand removal for flood protection and commercial use. Responses from the community and stakeholders generally recognised that dredging is necessary for harbour maintenance and navigation, but it needs to be carefully managed to avoid adverse effects on coastal processes, beach condition, including surf breaks, and the ecological health of the harbour.
108. Extraction of material from the CMA can significantly alter natural coastal processes and impact on cultural and heritage values. Environmental effects associated with extraction were a common theme in community and stakeholder feedback, with several locations

³⁰ Resource Management Act 1991, s12; Natural Environment Act 2026, s21

specifically mentioned, including Tomahawk Beach, Te Rauone Beach and Blackhead. Therefore, allocation of coastal resources, such as sand and shingle, must be carefully managed to avoid adverse impacts on the coastal environment. *(See the Coastal natural hazards and climate change, Biodiversity, Historic heritage, and Kāi tahu values sections of this report for more detail).*

Issue RD-I2: Deposition of material on the seabed and foreshore can have adverse effects on the coastal environment.

109. Deposition of material in Otago is mostly undertaken for beach replenishment and disposal of dredged material. A review of ORC's consents database shows that the most common reason for the deposition of material in the CMA is erosion protection, followed by beach replenishment and deposition of dredged material.
110. Deposition of material on the seabed and foreshore can disturb coastal and marine environments. When sediment or other material is placed on the seabed, it can smother habitats, and create sediment plumes that reduce clarity, clog the feeding structures of filter-feeding species, and affect fish behaviour. Deposition can also alter natural sediment movement, potentially causing erosion or changes to currents and wave patterns. If the material contains contaminants, it may degrade water quality and harm marine life.
111. Responses from the community and stakeholders reinforced concerns about the environmental impacts of altering the foreshore and seabed on biodiversity, marine habitats and fish and shellfish populations. Respondents were also concerned that relocating or depositing material can alter sand movement, erosion patterns, drainage, and other natural coastal processes.
112. Reclamation can physically bury the seabed or foreshore and alter natural shorelines. It can have adverse effects on natural coastal processes, natural character, amenity values, and sites of significance to Māori. Concerns were raised in community feedback about historic reclamation activities and their ongoing influence on harbour conditions, citing the example of Back Beach in Port Chalmers and the continuing accumulation of silt around nearby moorings.
113. Some respondents also raised concerns that alteration of the foreshore and seabed can adversely affect coastal ecosystems. Deposition or extraction of material can degrade productive habitats and impact benthic environments, coastal wetlands, lagoons, and swamps in and around river mouths and estuaries. Hoopers Inlet on the Otago Peninsula was highlighted as an example.

Opportunity RD-O1: Removal and deposition of coastal natural material can bring benefits to people and communities.

114. Sand, shingle, gravel, shell and other material are removed from the CMA for a range of purposes, including construction, coastal management (particularly flood control, sediment management and beach replenishment) and dredging activities. Dredging can improve navigation safety and port efficiency, contributing to economic growth and development. Depositing material such as dredged sediment, sand, gravel, or

construction fill onto the seabed or foreshore can rebuild eroded beaches, dunes, or foreshore areas and help protect coastal communities from storm surges, sea-level rise, and wave damage. During the community and stakeholder engagement, there was some recognition of the need for erosion protection works such as rock armouring, seawalls and beach renourishment to help protect infrastructure, property and public access. Feedback generally supported carefully considered intervention where there is clear public benefit, recognising the importance of maintaining long term functioning of natural coastal processes.

115. Reclamation can create new land along the coast for activities such as ports, roads, and marinas. It can improve public access and support local economies by providing additional usable coastal land.
116. Responses from the community and stakeholders identified opportunities associated with carefully managed extraction. Some supported the sustainable use of sand, shingle, seaweed, and kelp where environmental impacts can be minimised and community or economic benefits achieved. Kelp was highlighted as an underutilised resource with potential applications in food production, animal feed, bioplastics, alginate, and other industries. Positive feedback was provided for locations where deposited sand was considered to have improved environmental or recreational conditions, including Macandrew Bay and Harrington Point. Suggestions included using deposited materials to create or restore coastal habitats, as well as beach replenishment. Gravel and sediment management at river mouths was identified as important for land drainage and flood protection on coastal farmland.

Coastal infrastructure

117. Otago's coast contains many infrastructure assets, some of which are regionally or nationally significant.³¹ Regionally significant infrastructure is essential to a specific area, such as an arterial road or a shipping channel and navigational aid, and its failure would have significant consequences for the people, economy, or services in that region. Nationally significant infrastructure, by contrast, is important to the whole country, such as state highways or commercial ports, and disruption to these assets can have impacts felt across New Zealand.
118. Some types of regionally and nationally significant infrastructure must be in the CMA to meet their functional and operational needs.³² For example, port facilities and navigation infrastructure, such as beacons and lighthouses, need to be on or near the coast, close to shipping routes. Similarly, coastal protection and hazard management structures, such as

³¹ The Otago Regional Policy Statement 2021 defines regionally and nationally significant infrastructure. It includes the Port of Otago, New Zealand's railway network and other associated infrastructure.

³² Under Standard 14 of the National Planning Standards 2019, operational needs means the need for a proposal or activity to traverse, locate or operate in a particular environment because of technical, logistical or operational characteristics or constraints; functional needs means the need for a proposal or activity to traverse, locate or operate in a particular environment because the activity can only occur in that environment.

seawalls and breakwaters, are essential in some areas, as they protect communities from waves and storm surges.

119. Coastal infrastructure can unlock economic potential, enhance connectivity and strengthen the resilience of coastal communities. At the same time, its development, operation and maintenance can create challenges for the management of the coastal environment.

Issue INF-I1: Inappropriate use and development can compromise the performance of regionally and nationally significant coastal infrastructure.

120. Certain activities in the coastal environment can affect the efficient and safe operation of coastal infrastructure. Private structures such as boats sheds, slipways, and jetties built for tourism or recreational use need to be appropriately located and maintained to ensure they do not compromise the integrity or functioning of important infrastructure. Residential, commercial, or industrial development near infrastructure in the CMA can also constrain operational flexibility for infrastructure providers.
121. Human activities that disturb or alter foreshore or seabed conditions can increase the vulnerability of regionally and nationally significant infrastructure. For example, coastal reclamation or the construction of structures too close to coastal protection works can change how waves and sediment move, increasing the likelihood of damage to these structures or undermining the stability of infrastructure such as wharves or coastal protection works. Other marine activities, such as anchoring or mooring outside designated areas, can interfere with navigation infrastructure, while contaminant discharges and the dumping of waste may cause corrosion, fouling or deterioration of infrastructure assets.
122. Regionally and nationally significant infrastructure is essential for the safety, wellbeing and resilience of coastal communities and the functioning of the economy. Ensuring this infrastructure is appropriately safeguarded from the impacts of other activities in the CMA helps maintain its efficient, safe, and reliable operation over the long term. This can reduce maintenance and replacement costs, extend asset lifespan, and enhance the overall performance of critical infrastructure, while reducing the likelihood of asset failure.

Issue INF-I2: Coastal infrastructure can have adverse effects on coastal processes, values, and activities

123. Infrastructure within the CMA can occupy coastal space, influence coastal processes, affect natural character, landscape and wider amenity values and limit opportunities for other activities to occur. For example, marinas, moorings and stormwater or wastewater outfalls can have visual effects or may create conflicts with recreation, customary activities and other uses of the coastal environment. Similarly, culverts or bridges crossing coastal inlets can alter tidal flows by narrowing channels, changing current speeds, affecting sediment deposition and reducing tidal flushing.

124. These potential effects of coastal infrastructure on coastal processes, values and activities were also raised by community members and stakeholders during the preparation of this report.



Figure 3: Coastal erosion, Ōamaru

Issue INF-I3: Coastal infrastructure is vulnerable to coastal processes

125. Infrastructure located in the coastal environment is inherently exposed to coastal processes. Climate change, sea level rise and more frequent severe weather events increase the exposure of many coastal infrastructure assets to these processes, increasing the risk of damage, disruption, and failure. While coastal flooding, rising groundwater, coastal erosion (**Figure 3**) and shoreline change are placing additional pressure on them.³³

Opportunity INF-O1: Coastal infrastructure supports recreation, tourism and community wellbeing

126. Coastal infrastructure can help communities and visitors access, use and enjoy the coastal environment. Infrastructure can support a wide range of recreational, social, cultural and economic activities while influencing how people interact with and move through coastal areas. *(See the Public access section of this report for more detail).*

127. Marinas, jetties and boat launching facilities enable access to coastal waters and support boating and water-based recreation. Waterfront public spaces and event areas can create focal points for community activities, tourism, and use of the coast. Destination

³³ Ministry for the Environment (2024) Coastal hazards and climate change guidance. Wellington: Ministry for the Environment.

infrastructure, such as promenades or viewing platforms, can increase the attractiveness of coastal areas and support local economies.

128. Opportunities also exist to make better use of existing infrastructure and urban areas by encouraging development that is well-connected to transport networks, services, community facilities and employment opportunities. Coordinated infrastructure planning and carefully designed infrastructure upgrades can help reduce pressure on sensitive coastal environments, improve infrastructure efficiency, and support more sustainable patterns of development.
129. The opportunity to develop coastal infrastructure that strengthens people's connection with the coast was reflected in community and stakeholder feedback gathered during the preparation of this report. Harbourside precincts in Dunedin and Ōamaru were identified as areas where additional infrastructure could enhance how people interact with and enjoy the coast. New and emerging activities in the coastal environment can also create demand for supporting infrastructure and facilities, both within the CMA and on land. Where appropriately located and designed, such infrastructure can broaden the range of recreational opportunities, support economic activity, and contribute to community wellbeing. Overall, coastal infrastructure can help realise the social, cultural and economic benefits of the coastal environment, while supporting a diverse range of coastal experiences.

Opportunity INF-O2: Future infrastructure development provides an opportunity to reduce environmental impacts and improve resiliency

130. Tensions often exist between allowing natural coastal processes to occur, protecting existing development through engineering and hazard mitigation works, and enabling new development and activities. The cost of maintaining, upgrading, replacing or protecting coastal infrastructure is likely to increase over time as the effects of climate change and coastal hazards become more apparent. In some locations, this may affect the long-time viability of coastal infrastructure and activities and communities it supports, potentially requiring adaptation or relocation
131. The feedback collected highlighted the importance of long-term resilience of coastal infrastructure when designing, planning and upgrading infrastructure. Participants emphasised that, where practicable, infrastructure should work with coastal processes and systems rather than against them, while also reducing the impacts on infrastructure on the coastal environment. For example, more nature based coastal infrastructure could be utilised such as artificial reefs and coastal planting to minimise impacts of coastal erosion and storm surges rather than hard engineering infrastructure such as sea walls, break waters and armouring.

Commercial ports

132. Commercial ports are essential infrastructure that support local, regional and national economies, and play an important role in New Zealand's domestic and international transport networks. They have a functional and operational need to be located on the coast and have specific needs such as deep-water access, secure storage areas, and efficient transport links for road and rail.

Issue CP-I1: Commercial port activities can have an adverse impact on coastal processes and values.

133. Commercial port activities that are recognised as national or regional infrastructure need to be protected to maintain effective and safe operation. Commercial ports are large, complex operations, which need to be carefully managed, to ensure adverse effects on the coastal environment are appropriately addressed.
134. Port operations involve the handling, storage, and transfer of fuels, lubricants, and other hazardous materials, which can harm marine life and pollute coastal waters if not appropriately managed. Stormwater runoff from port yards, log storage areas, container terminals, and disturbed sediments from dredging and other port activities can have adverse effects on coastal habitats, disturb the seabed, and affect natural coastal processes.
135. Heavy machinery, container handling, and 24-hour operations generate noise, dust, artificial lighting, and emissions from ships and vehicles, affecting wildlife and communities. Exotic marine organisms can be introduced through ballast water discharges or biofouling on ship hulls. Once established, these species can outcompete native organisms and disrupt existing ecosystems.
136. Feedback from the community and stakeholders recognised the importance of Port Otago and associated infrastructure. However, some survey respondents emphasised that the economic benefits of structures including ports and associated infrastructure need to be carefully weighed against their environmental impacts.

Issue CP-I2: Activities in the coastal environment can adversely affect the efficient and safe operation of commercial port activities.

137. The Otago coast and harbour offer important commercial and recreational opportunities for local communities, including commercial and recreational fishing, wildlife tourism operations, and recreational boating. People also like living in this area because of its scenic beauty.
138. Residential, commercial, or industrial development near the port can create reverse-sensitivity issues that constrain Port Otago's operational flexibility. For example, increased residential density near the port can lead to more complaints about noise, lighting, and heavy vehicle movements, which may require additional mitigation. Recognising and managing these potential conflicts is important to support the ongoing operation of Port Otago while also providing for surrounding communities.

139. The presence of other activities in the coastal environment, such as water-based recreation or commercial activities, can compromise the efficient and safe operation of commercial port activities. Management of these activities is required to ensure that they do not adversely affect the efficient and safe operation of Port Otago. For example, private structures such as boats sheds, slipways, and jetties built to support commercial tourism operators or recreational activities need to be appropriately located and properly maintained to avoid them compromising the operation of the port. Navigational and safety conflicts can arise when recreational crafts operate within or cross commercial shipping lanes. Effective management of these surrounding activities is therefore important to ensure the ongoing safe and efficient operation of Port Otago.

Issue CP-I3: Commercial port activities can have adverse effects on public access and recreational activities.

140. Operation and development of port activities can affect surrounding areas and have impacts on local communities and other users. Because the Port operates in close proximity to established neighbourhoods, there is potential for operational activities to have an impact on the surrounding area, if not carefully managed.
141. Recreational users of the harbour, including boaties, rowers, and fishers, may be affected by the wake and wave action generated by large vessel movements. Dredging can disturb fish habitats, while the large scale of the port operation also restricts waterfront access for the community.³⁴
142. Community and stakeholder respondents generally recognised that Port activities and infrastructure are important, but some respondents considered that there are locations where these activities limit access to the waterfront. Several respondents expressed a desire to see greater access to waterfront areas where operational and safety requirements allow.

Opportunity CP-I4: Recognise the national and regional significance of Port Otago.

143. Port Otago is an important regional asset that provides economic, social, and transport benefits to the Otago region. As the primary export port for the lower South Island, it enables regional industries to access national and international markets. Its deep-water harbour, established infrastructure, and ability to accommodate large commercial vessels and cruise ships provide opportunities for continued trade, tourism, and economic development. The ORPS recognises Port Otago as nationally and regionally significant infrastructure which needs to be provided for.
144. Port Otago plays an important role in community life in Port Chalmers. The Port provides benefits through employment, community facilities such as the Port Chalmers Maritime Museum, and support for community initiatives. Feedback from the community and

³⁴ NIWA (2009) Biological Resources of Otago Harbour and Offshore: Assessment of Effects of Proposed Dredging by Port Otago Ltd.

stakeholders generally acknowledged that the Port and associated infrastructure are important contributors to the region's economy and the well-being of local communities.

Marine aquaculture

145. Marine aquaculture involves the cultivation or farming of marine organisms in seawater. There are two main types: inshore aquaculture, which occurs in coastal waters influenced by tides, and offshore aquaculture, which takes place in the open ocean. Currently there are no commercial marine aquaculture activities occurring in Otago, although there are some research activities and some proposals in development.^{35 36 37}
146. The New Zealand government has set an ambitious target to support the growth of the marine aquaculture industry from NZ\$760 million in annual revenue to NZ\$3 billion by 2035. The *New Zealand Aquaculture Development Plan 2025–2030* outlines strategies to achieve this, focusing on expanding production, diversifying species, and streamlining regulatory processes.³⁸
147. New Zealand's inshore aquaculture sector is well established, with key species currently farmed including green-lipped mussels, Pacific oysters and king (Chinook) salmon. These species are typically grown in sheltered bays, harbours, and inlets such as the Marlborough Sounds, Tasman and Golden Bay, Northland, Stewart Island, and the Coromandel Peninsula. Many inshore areas are approaching capacity. New Zealand is actively developing its offshore aquaculture sector, which offers potential for larger-scale salmon and mussel production.
148. Climate change presents significant challenges for the marine aquaculture industry. Many aquaculture species in other parts of the country, are experiencing rising sea temperatures, more frequent marine heatwaves, lower oxygen levels and increased disease pressure.³⁹ In regions like Marlborough and Canterbury, marine heatwaves and

³⁵ There are locations in the coastal marine area where commercial harvesting of shellfish is undertaken, these activities are regulated by quotas by the Ministry of Fisheries and are not considered to be marine aquaculture activities.

³⁶ For example, see Lewis, J, Otago Daily Times (11 December 2021) 'Aquaculture farm experimental' retrieved from <https://www.odt.co.nz/news/dunedin/campus/aquaculture-farm-experimental>

³⁷ For example, see Project East proposal to establish and operate two open-ocean salmon farms to the northeast of Otago Harbour, comprising up to approximately 20 circular floating pen structures and a centralised barge for every 10 pens.

³⁸ Ministry for Oceans and Fisheries, (December 2024) 'New Zealand Aquaculture Development Plan 2025–2030', retrieved from <https://www.beehive.govt.nz/sites/default/files/2025-03/NZ%20Aquaculture%20Development%20Plan%202025-2030.pdf>

³⁹ Ministry for Primary Industries (2023), State of Knowledge: Climate Change and New Zealand's Seafood Sector, Ministry. Retrieved from <https://www.mpi.govt.nz/dmsdocument/56242-Climate-change-and-NZs-seafood-sector-2023>

warmer summers are starting to impact on salmon farms.⁴⁰ Shellfish populations in the upper North Island, Marlborough and Nelson are also under pressure during heatwave years.⁴¹ These trends suggest increasing challenges for traditional aquaculture regions.

Issue AQ-I1: Marine aquaculture can have adverse effects on the marine environment.

149. Aquaculture can have adverse effects on the marine environment and must be managed carefully. Different types of aquaculture, such as finfish, mussel, and seaweed farming, can affect the marine environment in different ways. Potential impacts include changes to the seabed or coastal water quality or impacts on plants and animals that live in the water column. Some types of marine aquaculture also pose risks to marine biodiversity through wildlife entanglement. A key concern is that nutrient release from aquaculture may exceed the environment's ability to process these nutrients without adverse effects.
150. Community and stakeholder engagement identified concerns about the potential adverse effects of aquaculture on the marine environment, and how aquaculture may impact wild fisheries and the behaviour of marine mammals and predators. Marine farms need to be appropriately located, and their environmental effects need to be well understood, appropriately managed, and carefully monitored.
151. While aquaculture can have positive impacts on fish stocks and recreational, customary and commercial fisheries, it can also increase the risk of disease and parasite transfer from farmed to wild populations. These risks need to be managed through appropriate biosecurity practices and monitoring. The degree of risk that marine farming poses to coastal values and ecology depends on a range of factors, including the type, scale, and intensity of the farming operation, the species being farmed, the cultivation method and the stage of production (e.g., spat vs grow-out). It also depends on the sensitivity of the receiving environment, which may be affected by various human activities and natural processes.⁴²

Issue AQ-I2: Marine aquaculture can conflict with other activities, uses and values associated with coastal space.

152. Marine farms require a range of in-water structures, such as fish cages or pens, longlines, ropes, and racks for shellfish and seaweed, along with floats, buoys, anchors, moorings, and nets to support, secure, and mark the farm. These structures occupy coastal space and can conflict with other activities, uses and values. In addition, land-based facilities,

⁴⁰ Cardwell, H, RNZ, (5 July 2022) 'Marine heatwaves: How is aquaculture adapting to climate change?' Retrieved from https://www.rnz.co.nz/news/national/470344/marine-heatwaves-how-is-aquaculture-adapting-to-climate-change?utm_source=copilot.com | RNZ News

⁴¹ Cawthron Institute (July 2021) Case Study: Climate change and shellfish aquaculture. Retrieved from https://www.cawthron.org.nz/research/climate-change-shellfish-aquaculture/?utm_source=copilot.com

⁴² Giles, H, Pisces Consulting Limited for Otago Regional Council (2026) Information and advice for managing the effects of marine aquaculture in the Otago region

such as offices, equipment storage and processing areas, are also needed to carry out operational, administrative, and biosecurity tasks.⁴³

153. The occupation of coastal space by aquaculture can limit or exclude other uses, including recreational activities such as boating or angling, public and cultural access and conservation initiatives. Land-based facilities associated with aquaculture can also restrict access to the coast or the use of coastal space for other users.

154. Aquaculture in certain locations can affect Kāi Tahu cultural relationships with the coast, as some parts of the coast hold significant cultural value to Kāi Tahu and may not be considered appropriate for aquaculture development.

Opportunity AQ-O1: Marine aquaculture can support economic development and contribute to the social, economic and cultural well-being of communities in Otago

155. Marine aquaculture can support economic development and contribute to the social, and cultural well-being of communities in Otago. It can create employment opportunities, attract investment, support marine research and innovation, and contribute to infrastructure and services that support coastal communities. Marine aquaculture may also provide opportunities for iwi economic development, including within aquaculture settlement areas.

156. Recent proposals for offshore salmon farming in Otago highlight this potential. Otago's coast and offshore waters are generally considered to have high-quality coastal conditions, good water quality and deep, well-flushed, high-energy waters, suitable for future marine aquaculture development.^{44 45}

157. Activities associated with marine aquaculture could help diversify Otago's coastal economy and support the development of specialised marine industries. Stakeholders and the wider community identified the potential to develop a distinctive aquaculture industry in Otago, including seaweed and kelp production. These activities could support innovation, research partnerships and value-added processing opportunities linked to the marine economy.

158. Legislation and national policy direction, such as the New Zealand Coastal Policy Statement 2010 (NZCPS), require regional councils to provide for aquaculture in appropriate areas in the coastal environment, including provision for iwi aquaculture

⁴³ National Institute of Water & Atmospheric Research Ltd (NIWA) (2026) 'Aquaculture activities' Retrieved from <https://niwa.co.nz/freshwater/kaitiaki-tools/what-proposed-activity-or-industry/aquaculture-and-customary-fisheries/aquaculture-activities#:~:text=Fish%20farming,appropriate%20stocking%20densities%20and%20feeding>.

⁴⁴ SLR Consulting New Zealand Limited for Otago Regional Council (December 2025) Coastal Consent Data Monitoring Review Technical Advice for the Otago coastal Plan Review

⁴⁵ The New Zealand Coastal Policy Statement 2010 recognises the need for high water quality for aquaculture activities, and that aquaculture can make a significant potential contribution to the economic and cultural well-being of people and communities

within aquaculture settlement areas.^{46 47} Currently, Otago has no specific regional planning framework for managing marine aquaculture. While this does not prevent aquaculture development, it creates a more complex and uncertain regulatory environment for assessing new proposals for aquaculture and their impacts on the marine environment and other coastal values.⁴⁸

159. Community and stakeholder views gathered while preparing this report were generally supportive of the opportunities associated with marine aquaculture where it provides economic and community benefits and environmental effect are appropriately managed.

Opportunity AQ-O2: Marine aquaculture can have positive impacts on biodiversity

160. Marine farms can increase local fish abundance, as wild fish are often attracted to marine farm structures that provide surfaces where food sources, such as algae and small organisms, can grow. Cages, ropes and lines also offer protection from predators and shelter from currents.

Biosecurity

161. Biosecurity is the protection of the environment from biological threats. It involves preventing unwanted organisms from damaging the economy, natural biodiversity, or public health.⁴⁹ Invasive organisms and diseases pose a significant threat to Otago's unique coastal environment, its diverse cultural, economic, recreational and ecological values, and the many activities taking place in this environment. These organisms can include non-native species, pests, and pathogens that are introduced either accidentally or deliberately.
162. Regional councils have a mandate under Part 2 of the Biosecurity Act 1993 to provide regional leadership in activities that prevent, reduce, or eliminate adverse effects from harmful species present within their region. ORC holds this role in the region.
163. Otago's coastal environment is particularly vulnerable to biosecurity risks due to the wide range of activities occurring within it, including commercial shipping, recreational boating, commercial and recreational fishing, and dredging, as well as the interconnected nature of marine ecosystems. Community and stakeholder engagement reinforced this concern, with participants frequently identifying the spread of Undaria (**Figure 4**), Mediterranean fanworm, golden clam, avian influenza, and other pests and diseases as

⁴⁶ Policy 8 of the New Zealand Coastal Policy Statement 2010 requires regional councils to proactively plan for aquaculture and identify appropriate places for it in the coastal environment, as these activities have a functional need to be located there

⁴⁷ Māori Commercial Aquaculture Claims Settlement Act 2004.

⁴⁸ Otago Regional Policy Statement, Coastal Environment-Policy12 – Aquaculture provides for the development and operation of aquaculture activities taking into account policies CE-P4 to CE-P13. Coastal Environment Method-M4 requires council to amend and maintain its regional plans to identify areas that may be appropriate for aquaculture.

⁴⁹ New Zealand Biosecurity Institute 'What is Biosecurity?' Retrieved from <https://www.biosecurity.org.nz/about-us/what-is-biosecurity/>

significant risks because of their potential impacts on Otago's biodiversity and iconic species, including hoiho/yellow-eyed penguin and other seabirds, Kekenos/New Zealand fur seals and whakahao/New Zealand sea lion.

Issue BS-I1: Activities in or near the Coastal Marine Area can increase the risk of invasive pests and disease spreading in Otago's coastal environment

164. Activities and structures in the CMA can spread or harbour marine pest species, exacerbating the threat to Otago's coastal environment and marine biodiversity. The discharge of ballast water, and biofouling removed from vessel hulls can introduce or spread pest species. Coastal structures such as marinas, wharves, jetties, pilings, moorings and seawalls, particularly in sheltered, high-traffic areas, can act as artificial "stepping stones" that allow pest species to establish and spread. Similarly, aquaculture activities, including the use of equipment and structures and the movement of stock and vessels between sites, can spread unwanted species. Commercial shipping, fishing vessels, and recreational boats can also carry organisms on hulls, anchors, and equipment, spreading them between ports or moorings.⁵⁰ Even fishing and diving gear can transfer unwanted species between locations if not properly cleaned.
165. Climate change is expected to further increase the threat from invasive pests and diseases.⁵¹ Rising ocean temperatures in Otago's marine environment may favour species that prefer warmer waters, increasing the likelihood of invasions by new pest species. In addition, changes to coastal habitats caused by human activities, such as coastal development, reclamation, sediment disturbance and nutrient enrichment from discharges, can create favourable conditions for exotic species, including pests. Coastal habitats that are already under pressure from human activities are often less resilient and therefore more vulnerable to invasion, with cumulative effects increasing this risk. In these modified environments, pest species can establish more easily and spread more rapidly, outcompeting native species in a similar way to terrestrial pests.
166. Once established, pest species can have wide-ranging and long-lasting effects on Otago's CMA. They can displace or outcompete native species for food and habitat and alter habitats in ways that reduce their suitability for native species. As a result, they pose a significant threat to marine biodiversity and unique coastal ecosystems.
167. The spread of pests can also result in the loss of important ecosystem services, such as food production or coastal protection, and can have ongoing economic impacts on local industries and communities. For example, invasive weeds can replace native coastal vegetation that is more effective in stabilising sediment, leading to increased erosion and less natural buffering from waves and storms. This can, in turn, require greater investment in engineered solutions to manage coastal hazards. Invasive weeds can also degrade

⁵⁰ All vessels that enter New Zealand territory after a voyage outside of New Zealand's territory must meet the Craft Risk Management Standard for Vessels in accordance with the Biosecurity Act 1993 which includes standards for biofouling.

⁵¹ Tonkin Taylor, prepared for Otago Regional Council, (2021)'Otago Climate Change Risk Assessment 2021'

nursery habitats for fish and shellfish, reducing the productivity of local fisheries. In addition, pests can contaminate boats, equipment and coastal structures, increasing the costs associated with maintenance, cleaning and efforts to prevent their spread.

Issue BS-I2: Responding to marine pest incursions may create adverse effects on the marine environment

168. The current coastal planning framework for Otago does not provide guidance on implementing biosecurity measures in response to marine pest incursions. While the development of a new planning framework offers an opportunity to address this gap, care needs to be taken to ensure a more agile response framework does not create unanticipated adverse impacts on the health of our coast. Discharges associated with biosecurity measures, such as the application of herbicide or pesticide to control invasive marine pests, can have unintended adverse impacts on marine life and surrounding ecosystems. For example, these substances can harm non-target species, reduce water quality through the decay of treated organisms, and affect sensitive habitats or species through toxicity or disturbance.



Figure4:Herbicide treatments used to control invasive seaweeds like Undaria have raised concerns about impacts on nearby native algae and invertebrates.

Opportunity BS-O1: Coastal planning and cross-agency collaboration can improve biosecurity management

169. Effective biosecurity management helps to protect the coast's biodiversity and ecosystems, and the customary, recreational and commercial activities that depend on them, from marine pest incursions. Once introduced, marine pests can be difficult or impossible to remove. Early detection and rapid intervention are critical to containing new infestations before they become established and start spreading to other areas, where they are more difficult to control. It also reduces the economic burden associated with large-scale pest management.
170. The development of a future planning system provides an opportunity to enable more effective biosecurity management across Otago's coast by providing for the infrastructure and facilities that are needed to manage biosecurity risks in the marine environment. For example, facilities needed for cleaning boat hulls and containing the discharges associated with the cleaning of biofouling.
171. The stakeholder and community feedback also identified an opportunity to improve the monitoring and surveillance of biosecurity threats in the marine environment through partnerships with other government agencies, mana whenua, industry, recreational users and coastal communities. Local knowledge, mātauraka Māori (Māori knowledge), citizen science and community-based reporting could play an important role in strengthening biosecurity surveillance, monitoring and awareness and support the development of rapid responses to marine pest incursions.

Coastal features and characteristics: The natural landforms, habitats, and processes that shape the coastal environment.

Biodiversity

173. Coastal biodiversity includes the species and habitats found in marine environments and the land-sea interface, including salt marshes, dune systems and coastal margins. It also includes species that rely on different habitat types, such as tuna (eels), which migrate between freshwater and coastal waters, and penguins and marine mammals that depend on both the sea, and coastal land margins.
174. Otago's coast has a remarkable diversity of habitats, including harbours, lagoons and estuaries, sandy beaches, extensive kelp forests, a narrow continental shelf and deep-sea canyons. These habitats support both native and non-native wildlife. Some iconic species, such as toroa/northern royal albatross, hoiho/yellow-eyed penguin, whakahao/New Zealand sea lion and tutumairekurai/ Hector's dolphin, are found here. In addition, the Otago coast supports a wide range of less well-known but ecologically vital species, including shellfish such as cockles, pipi, and tuatua; fish species such as flounder, blue cod, and sprat; seabirds such as gulls, terns, and shags; and various benthic invertebrate species that form the base of coastal food webs. Together, these species contribute to the functioning and resilience of our coastal ecosystems.
175. Healthy ecosystems contain a diverse range of species that have evolved over time to survive in particular habitats. The combination of these habitats and the species that live within them is what makes Otago's coastal systems unique. Each species plays an important role in keeping our environment healthy and relies on others for its survival. The Otago Peninsula, particularly Taiaroa Head, Hoopers Inlet, Harwood, and Sandymount, were identified in community engagement as areas with high biodiversity values and ecological importance, supporting healthy populations of seabirds, albatross, seals, sea lions, and penguins. Participants also noted thriving estuaries such as Tautuku, Waipati and Blueskin Bay, and the persistence of seagrass and seaweed in some locations. Within Otago Harbour and Aramoana, respondents observed healthy populations of shags, spoonbills, herons, seals, sea lions, dolphins, and orca. Respondents also reported positive outcomes for seabirds, seals, blue penguins, and coastal vegetation around Ōamaru Harbour and parts of the Kākanui coast. However, many respondents considered hoiho/yellow-eyed penguin, especially around Sandfly Bay, to be under threat from human disturbance, dogs, habitat loss, invasive species, and fishing impacts.

Issue BD-I1: Coastal biodiversity is under threat from a wide range of human activities.

176. Coastal biodiversity is under threat from a wide range of land-based and marine activities. Without adequate protection, biodiversity can decline across many interconnected environments, such as estuaries and rivers. Declining biodiversity can lead to loss of social, cultural, economic, recreational and ecological values.
177. Human-induced pressures on coastal biodiversity include physical modification of the coast, such as the construction of sea walls and other hard structures. The extraction or deposition of materials, including dredging, sand removal or deposition of dredge spoil, can also modify habitats, as can fishing methods, such as trawling, that disturb the benthic habitat.
178. Community and stakeholder engagement identified concerns about the impacts of development, port activities, pollution, habitat degradation and dredging on fish and shellfish abundance, rock pool ecosystems, kelp forests, and seabird habitat. These activities have interconnected and cumulative impacts on coastal biodiversity through physical modification of habitats or direct impacts on indigenous species. For example, reclamation in Otago Harbour, drainage and reclamation of salt marshes and estuaries, and the artificial opening of lagoons have contributed to habitat loss across the region. Even where habitats remain, they can become degraded through reduced flushing, introduction of exotic species and increased sedimentation.
179. Direct modification of benthic habitat through the placement of structures can disrupt marine food webs and affect the viability of threatened and sensitive coastal ecosystems. Physical barriers can impede fish migration between marine and freshwater habitats and disrupt natural lifecycle processes such as spawning. Hard structures such as sea walls can also cause scouring and erosion, leading to loss of dune systems and other adverse effects on coastal habitats.
180. Activities occurring within coastal or inland catchments can also affect coastal biodiversity. The presence of stock in estuarine and other coastal habitats can cause vegetation loss through grazing, pugging or trampling. Changes to the movement of freshwater, sediment and nutrients from land use activities can alter species composition and habitat conditions. For example, changes in freshwater inflows and loss of estuarine buffers can impact salinity levels, while increased sediment loads can smother habitats such as kelp forests and pāua beds. Elevated nutrient levels can also contribute to nuisance algal growth, reducing habitat quality and biodiversity. Reduced salinity in

estuarine environments can cause stress to marine organisms adapted to saline conditions, while prolonged exposure to freshwater can cause marsh grasses to die off.^{52 53}

181. Other human activities can also disturb wildlife and alter ecosystem functioning. Vehicles and people in sensitive coastal habitats can disturb wildlife, while noise from activities such as commercial tourism, shipping, naval sonar and oil exploration can adversely impact on marine mammals and other marine species.^{54 55} Noise from marine activities can interfere with navigation, communication and feeding, while also causing stress and behaviour changes. Some stakeholders also identified overfishing and seafood harvesting as potential factors contributing to biodiversity decline, particularly near some river mouths. These pressures can be further compounded by disruptions to predator-prey relationships and the harvesting of species, which can destabilise populations and alter ecosystem functioning.
182. Feedback from public and stakeholder engagement frequently emphasised the need to balance public access and recreation with the protection of wildlife and natural habitats. Participants supported restricting vehicle, motorbike, and dog access in some locations to reduce impacts on biodiversity and allow coastal habitats to recover. Some called for stronger environmental protections, including more marine reserves and taiāpure, to help protect vulnerable habitats and species.

Opportunity BD-O1: Land use and urban development can enhance biodiversity through designs that restore or enhance coastal ecosystems

183. Coastal biodiversity is important because biodiverse environments are generally more resilient to environmental change and are likely to sustain a greater abundance and diversity of animals and plants than modified environments.
184. Healthy, viable, resilient ecosystems that support high biodiversity also contribute to social, cultural, economic and recreational values by supporting food security and sustainable fisheries, providing for coastal protection and climate resilience, generating tourism opportunities and enabling Kāi Tahu mana whenua to exercise rakatirataka (mana, authority), manaakitaka (the process of showing respect, generosity and care for others) and kaitiakitaka (guardianship, stewardship).
185. Protecting and restoring dunes, wetlands, estuaries, coastal vegetation and ecological corridors can help improve biodiversity, support water quality, strengthen natural coastal processes and contribute to community amenity. Integrating environmental

⁵² Smyth, A. R., Laughinghouse, H.D., Reynolds, L.K., Camp, E.V., and Havens, K. (April 2024) 'Climate Change: Effects on Salinity in Florida's Estuaries and Responses of Oysters, Seagrass, and Other Animal and Plant Life.'

⁵³ Queensland Government (July 2026) 'Wetland Info- Salinity (Water)' retrieved from <https://wetlandinfo.detsi.qld.gov.au/wetlands/ecology/components/water-chemical/salinity-water/>

⁵⁴ Hoshino, M. (2014) The Effects of Noise Pollution on Marine Mammals, University of Otago

⁵⁵ Marine Biodiversity & Sustainability Learning Center (July 2026) 'Understanding Marine Noise Pollution: Sources and Scale' retrieved from <https://www.marinebiodiversity.ca/the-oceans-silent-crisis-how-noise-pollution-is-destroying-marine-life/>

enhancement into urban development can deliver benefits for both people and ecosystems. Increased biodiversity was often linked to predator control, native planting, habitat restoration, restricted access, ecological monitoring, and long-term conservation efforts. There is potential for land use activities and urban development along the coast to incorporate environmental enhancement into their design and ongoing use.

Coastal natural hazards and climate change

186. Otago's coastline is exposed to a range of coastal natural hazards due to its dynamic environment and interaction between land and sea. Coastal hazards include erosion, inundation, vertical land movement, groundwater table rise, tsunamis, sea-level rise, warmer oceans, and ocean acidification. Parts of the Otago coastline have experienced noticeable erosion in recent decades.⁵⁶
187. Feedback from the public on erosion impacts was focused on the Dunedin coast, particularly at St Clair and St Kilda, with additional concerns raised in North Otago, and elsewhere along the coast including Toko Mouth, Kaka Point and Pounaweia. Feedback also highlighted the potential exposure of old rubbish dump sites as an issue. Some pointed to erosion at Te Rauone Beach and suggested that dredging, channel widening in the Otago Harbour, and groynes may be affecting erosion patterns. Many people supported better monitoring, early intervention, improved management, and greater use of sand traps in erosion-prone areas.
188. Flooding and sea level rise were most often associated with South Dunedin and other low-lying coastal areas. Respondents called for proactive measures to reduce flood risk, particularly in South Dunedin and Ocean View. Risks were also identified in coastal settlements across North Otago, the Otago Peninsula, and other parts of the Dunedin coast. Many considered sea level rise to be a long-term issue affecting much of the Otago coastline. Respondents generally viewed storm impacts as a concern across the entire coast, especially in low-lying and exposed areas. Concerns about tsunami hazards focused on Dunedin's south coast, northern coastal settlements, the Ōamaru area, and other low-lying coastal locations.

⁵⁶ Two recent studies investigated coastal changes in Otago. One study focused on the Waitaki coastline, while the second one investigated changes to the lower Clutha coastline. These studies show how the coastline has eroded and changed in the past and estimate the future rate of erosion. Historical erosion rates and sea level rise estimates have been used to project the position of the shoreline in the future. National Institute of Water & Atmospheric Research Ltd (NIWA) Waitaki district coastal hazards report, 2018035CH (March 2019) and MacDonald, K, Jacobs New Zealand Limited(July 2021), Molyneux Bay and Clutha Delta morphology investigation

Issue CH-I1: Coastal hazards can negatively impact communities, infrastructure, historic heritage and the environment.

189. Climate change is increasing the intensity and frequency of coastal hazards. While climate change and sea level rise are not expected to create new types of hazards, they are changing the nature, magnitude, frequency and extent of their impacts.⁵⁷
190. Increased coastal hazards and climate change exposure gives rise to a wide variety of impacts, including accelerated erosion, land instability, habitat loss, loss of coastal extent and public access, flooding of coastal communities and saline intrusion.
191. Coastal erosion caused by increased wave energy and inundation can also threaten heritage sites or sites of cultural significance located in the coastal environment (*See the Historic heritage section for more details*).
192. Stakeholders identified coastal erosion, severe storms, high rainfall events, and sea-level rise as key natural hazard concerns, emphasising the risks these hazards pose to coastal infrastructure and structures and the need to repair these when damaged or undermined. Stakeholders also identified the impacts of flooding and climate change on coastal communities and marine ecosystems as key concerns. They recognised the growing pressure of more frequent and intense weather events on water quality through increased runoff and sedimentation, with potential impacts on coastal habitats such as kelp beds. Climate change, particularly rising sea temperatures, was also identified as a challenge for fisheries through its influence on species distribution and ecosystem dynamics.
193. Additionally, planning and decision-making needs to consider land-based hazards, such as landslides, which can cause sediment or debris to enter the coastal marine area.

Issue CH-I2: Structures and other activities in the coastal marine area can exacerbate natural hazards

194. Access to and along the coast has resulted in the development of road and rail infrastructure in the CMA. While these structures are often vulnerable to natural hazards, they can also exacerbate them by impacting on natural coastal processes, such as sediment accumulation and deflection of wave energy.
195. Loss of sediment supply can also exacerbate erosion. Activities like sand extraction can disrupt the balance between erosion and deposition and cause sediment loss, particularly where sediment supply is already limited. The damming of large river systems, such as the Clutha River/Mata-Au and Waitaki River, traps sediment behind dams that would otherwise reach the coast, leading to potential wide-scale sediment deficits and increased erosion along the coast.

⁵⁷ Ministry for the Environment (2024) Ngā pūmete takutai me te ārahitanga huringa āhuarangi, Coastal Hazards and climate change guidance, p24 Retrieved from <http://environment.govt.nz/assets/publications/Coastal-hazards-and-climate-change-guidance-2024-ME-1805.pdf>

196. Jetties and sea walls can change natural sediment movement along the coast and affect tidal flows, degrading habitats in estuaries, harbours and salt marshes. An example is the rail and cycle causeway along the western edge of the Otago Harbour in Dunedin, where restricted tidal exchange has caused muddy conditions and nuisance algae growth in enclosed bays. Remediation work at such sites includes widening culverts to improve tidal flushing.

Issue CH-I3: Reliance on hard protection structures to manage coastal hazards can have adverse effects.

197. Protection of property and access along the coast is often achieved using hard protection structures such as seawalls (**Figure 5**), rock revetments, groynes and breakwaters. These approaches are often favoured over natural defences due to constraints on resources and space. Nature-based approaches, such as beach renourishment, can involve higher upfront costs, require ongoing maintenance, and may take longer to deliver benefits than hard protection structures, especially in areas with high sediment deficit.⁵⁸ Their effectiveness can also be more difficult to quantify, which can limit their consideration in cost-benefit analyses. In addition, landowners often prioritise protecting their existing assets over providing space for nature-based solutions.



Figure 5: Privately constructed seawalls along Kaika Beach, north of Dunedin.

198. Coastal “hardening”, or the construction of engineered coastal protection structures, such as seawalls, is expected to increase by between 49 and 76 percent in New Zealand over the next 17 years.⁵⁹ However, hard protection structures can limit the ability of

⁵⁸ Sánchez-Arcilla, A., Cáceres, I., LeRoux, X., Hinkel, J., Schuerch, M., Nicholls, R.J., Otero, dM., Staneva, J., deVries, M., Pernice, U., Briere, C., Caiola, N., Gracia, V., Ibáñez, C., Torresan, S. December 2022) ‘Nature Based Solutions, Vol 2, Barriers and enablers for upscaling coastal restoration’, Retrieved from <https://www.sciencedirect.com/science/article/pii/S2772411522000246>

⁵⁹ Ministry for the Environment (2025) ‘Our Marine Environment 2025 Tō Tātou Taiao Moana, Our coasts and estuaries are affected by a changing ocean’ Retrieved from <https://environment.govt.nz/publications/our-marine-environment-2025/our-coasts-and-estuaries-are-affected-by-a-changing-ocean/>

intertidal areas from migrating inland in response to sea-level rise. This process, known as coastal squeeze, can result in degradation and loss of habitat.^{60 61} These effects are often most pronounced in highly modified salt marshes and estuaries located in close proximity to urban areas.⁶²

199. Many respondents expressed support for nature-based solutions to erosion and inundation, including wetland restoration, improved stormwater management, and infrastructure that works with natural coastal processes. Others emphasised the need for long-term planning, resilience, and stewardship to help communities adapt to future coastal change.

Issue CH-I4: Shoreline erosion is exposing contaminated sites in the coastal environment

200. The ORC maintains a register of sites, often referred to as Hazardous Activities and Industries List (HAIL) sites, where there is either confirmed soil contamination or a high likelihood of contamination resulting from previous hazardous activities.⁶³ DoC also maintains records of contaminated sites located on public conservation land and within the CMA.⁶⁴
201. These records indicate that various sites near the Otago coastline were historically used for the disposal of municipal and hazardous waste or other activities that could lead to soil contamination.⁶⁵ Many of these contaminated sites are now vulnerable to coastal erosion, increasing the risk that contaminated material may be exposed and released into the environment.
202. An example is the former landfill below Kettle Park adjacent to Middle Beach in Dunedin, operated between 1900 and 1950 and capped a decade later. It contains an estimated 300,000m³ of waste, including asbestos, cyanide and heavy metals.⁶⁶ Erosion of the dune

⁶⁰ Mangan S, Bryan KR, Thrush SF, Gladstone-Gallagher RV, Lohrer AM, & Pilditch CA. (2020). Shady business: The darkening of estuaries constrains benthic ecosystem function. *Marine Ecology Progress Series*, 647, 33–48. <https://doi.org/10.3354/meps13410>

⁶¹ An example of coastal squeeze can be seen at St Clair Beach in Dunedin or at Kaika Beach north of Dunedin, where the construction of a seawalls has contributed to beach loss, causing the shoreline to become narrower.

⁶² Rullens V, Mangan S, Stephenson F, Clark DE, Bulmer RH, Berthelsen A, ... & Pilditch CA. (2022). Understanding the consequences of sea level rise: The ecological implications of losing intertidal habitat. *New Zealand Journal of Marine and Freshwater Research*, 56(3), 353–370. <https://doi.org/10.1080/00288330.2022.2086587>

⁶³ Otago Regional Council, (2026) Selected Land Use Sites (SLUS) Register, Retrieved from <https://www.orc.govt.nz/environment/waste/contaminated-land/#selected-land-use-sites-slus-register>

⁶⁴ Department of Conservation (2025) , ‘Contaminated sites management, Contaminated sites programme priority list’ Retrieved from <https://www.doc.govt.nz/globalassets/documents/about-doc/role/managing-conservation/contaminated-site-management/contaminated-sites-programme-priority-list.pdf>

⁶⁵ Morris, C (5 April 2019) Otago Daily Times, ‘Many Otago landfills at risk from erosion’ Retrieved from <https://www.odt.co.nz/news/dunedin/many-otago-landfills-risk-erosion>

⁶⁶ McNelly, H (25 August 2025) Stuff, ‘The former dump at risk of coastal exposure’ retrieved from <https://www.stuff.co.nz/nz-news/360799708/former-dump-risk-coastal-exposure>

face that once protected this landfill has exposed the fill materials⁶⁷ and modelling predicts that without intervention, large quantities of contaminated waste material could be released into the environment over the next 100 years.⁶⁸

203. Respondents also highlighted the potential exposure of contaminated sites as a concern. They frequently referred to the historic landfill beneath Kettle Park in St Clair and St Kilda, along with other landfills, dumps, and contaminated industrial sites that may be vulnerable to erosion, flooding, or sea level rise. Concerns were also raised about contaminated water entering the marine environment, particularly near settlements and agricultural areas.

204. The erosion of contaminated sites and release of hazardous substances and contaminants into the coastal environment can degrade water quality degradation and cause harm to human health and coastal ecosystems. Large volumes of waste entering the CMA can also impact recreation, natural character and mana whenua values.

Opportunity CH-O1: The effects of coastal natural hazards are managed to support resilient communities

205. Future planning and development provide opportunities to improve the long-term resilience of coastal settlements, infrastructure and community assets. Considering changing coastal conditions and natural hazards when making land-use and investment decisions can help ensure that communities remain safe, functional and adaptable over time. Integrating hazard information into growth planning can also support more informed decision-making and reduce future costs associated with maintaining or relocating infrastructure and development.

206. Feedback from the community emphasised the importance of using the best available information and considering managed retreat where appropriate to reduce exposure in high-risk areas. However, views differed on how to best adapt to coastal hazards. Some participants advocated for hard protection structures such as seawalls and rock armouring. Others supported nature-based solutions and accepted that some areas will need to adapt over time. Respondents also highlighted the importance of improving hazard information, including enhanced tsunami warning systems and clearer communication of sea level rise risks. Despite differing views on solutions, there was broad recognition that climate change will increasingly shape how the coast is managed.

⁶⁷ Tonkin and Taylor Limited, (August 2025) Kettle Park Landfill, Assessment of remedial options, Dunedin City Council, August 2025 p8 Retrieved from https://infocouncil.dunedin.govt.nz/Open/2025/08/CNL_20250826_ATT_3120_EXCLUDED.HTM#PDF3_ATT_ACHMENT_27140_1

⁶⁸ Tonkin and Taylor Limited, (August 2025) Kettle Park Landfill, Assessment of remedial options, Dunedin City Council, August 2025 p8 Retrieved from https://infocouncil.dunedin.govt.nz/Open/2025/08/CNL_20250826_ATT_3120_EXCLUDED.HTM#PDF3_ATT_ACHMENT_27140_1

Water quality

207. Coastal water quality is important to the people of Otago because it influences how they experience and use the coast. Clean coastal water provides opportunities for swimming, surfing, diving, fishing and other recreational activities. Good coastal water quality is also essential for protecting marine ecosystems and wildlife. In addition, it can strengthen local economies through activities such as aquaculture and tourism, while helping to sustain food resources such as shellfish.

Issue WQ-I1: Activities undertaken on land, in freshwater and in the coastal marine area can have adverse effects on coastal water quality.

208. A wide range of activities on land and in the sea can put pressure on coastal water quality.⁶⁹

209. Urban areas are located along much of Otago's coastline, with the largest centres, Dunedin and Ōamaru, established around their harbours. Urban land uses can affect water quality through treated and untreated wastewater, which can add nutrients and harmful bacteria to harbours, estuaries, and coastal waters. Stormwater runoff from roads, car parks, and rooftops can carry sediment, heavy metals, oil, rubbish, and bacteria into waterways and the coast.⁷⁰ Stormwater and wastewater, including septic tanks, were commonly identified through community and stakeholder engagement as causes for concern in relation to coastal water quality, particularly after storms or periods of heavy rainfall.

210. Rural land uses, such as farming and forestry, are common in many coastal areas and inland catchments that drain to the coast. Runoff from farming and forestry can transport nutrients, such as nitrogen and phosphorus, along with sediment, through rivers and streams into coastal water, degrading water quality, reducing water clarity and smothering habitats in estuaries and coastal waters.⁷¹ Although these issues were commonly identified through community and stakeholder engagement as matters of concern, participants also recognised the efforts being made by many landholders and catchment groups to improve water quality outcomes and reduce the effects of nutrient, sediment, and contaminant runoff.

211. Activities undertaken at sea can also affect water quality. Discharges from boats, along with maintenance activities such as hull cleaning, can release contaminants into the marine environment. Work in ports and marinas can stir up seabed sediments, which may

⁶⁹ Ministry for the Environment & Stats NZ (2025). New Zealand's Environmental Reporting Series: Our environment 2025 | Tō tātou taiao

⁷⁰ Otago Regional Council (2025) Te Awa Ōtākou Issues & Opportunities Report

⁷¹ Ministry for the Environment & Stats NZ (2025). New Zealand's Environmental Reporting Series: Our environment 2025 | Tō tātou taiao

contain harmful chemicals.⁷² Aquaculture can also contribute waste, including uneaten feed, fish waste, shells, and other material that can spread into surrounding waters.⁷³



Figure 6: The Jane Marie, a fishing vessel that ran aground in Ōamaru Harbour in 2017 carrying about 500 litres of fuel. Despite concerns over the risk of fuel spillage, fuel tanks were able to be isolated and no impact on wildlife was reported. Right – Marine spill exercise in the Otago Harbour.

212. Declining coastal water quality not only affects marine life. Human health, local economies, and cultural practices such as mahika kai, and Kāi Tahu's relationship with the coastal environment can also be adversely affected when water is unsafe for swimming or gathering seafood. High nutrient levels can lead to algal blooms, especially in estuaries. These blooms can reduce oxygen in the water, kill marine life, and sometimes produce toxins that can harm people through the consumption of contaminated shellfish.
213. Community and stakeholder perception of Otago's water quality ranges from average to good, suggesting that experiences vary depending on location and conditions. Much of Otago's open coastline has relatively good water quality due to strong wave action and water movement. However, some areas are more vulnerable than others. Estuaries, harbour margins, and river mouths can be particularly affected because contaminants can accumulate there, and flushing is often limited.
214. Community and stakeholder engagement identified a number of areas where water quality is perceived to be a concern, such as Kaikorai Estuary, Blueskin Bay, Catlins Lake, and the Kākanui, Taiari/Taieri, and Waianakarua River mouths. Respondents also mentioned Tomahawk, St Clair and St Kilda beaches, along with Otago and Ōamaru harbours. Otago harbour (Te Awa Ōtākou), in particular, has a legacy of contaminants that have accumulated in harbour sediments and that can be released back into the water column if these sediments are disturbed. This may pose risks to water quality, marine life,

⁷² <https://environment.govt.nz/publications/our-marine-environment-2019/issue-3-our-activities-at-sea-are-affecting-the-marine-environment/>

⁷³ Giles, H. Pisces Consulting Limited, (2026) 'Information and advice for managing the effects of marine aquaculture in the Otago region.

and potentially human health.⁷⁴ However, some respondents indicated that they have observed improvements in the harbour and at St Clair Beach compared with previous years.

215. Monitoring of water quality along the Otago coast is currently focused on a limited number of indicators and locations. It mainly focuses on swimming sites, alongside measures of habitat condition and key stressors such as sediment levels, muddy seabed extent, algal growth, and changes in kelp forests. Community and stakeholder feedback suggested that improved monitoring, information sharing, and education could enhance public awareness and support better environmental outcomes.

Opportunity WQ-O1: Managing water quality through integrated management

216. Managing water quality in an integrated manner was a recurring theme in the community and stakeholder feedback. As discussed above, many participants recognised that activities within inland catchments can affect the CMA, particularly estuaries, harbours and beaches near river mouths. As a result, many identified opportunities for catchment-based management, particularly in relation to discharges from wastewater and stormwater management systems, as well as the effects of rural land uses.
217. An integrated, ki uta ki tai (from mountains to sea) approach recognises the interconnected nature of land, freshwater, and coastal systems, and acknowledges actions in one part of the environment can affect other parts of the system. *(See Integrated management section and Appendix A for more details)*

Historic Heritage

218. Historic heritage includes sites and places with archaeological, architectural, cultural, historic, scientific, and technological qualities, such as historic buildings, areas, archaeological sites and sites of significance to Māori, including wāhi tapu (sacred site or sacred place).⁷⁵ These places and features help people understand and connect with their history and culture, while also providing a sense of identity and belonging. It also supports education and can contribute to local economies by attracting visitors, supporting heritage and cultural tourism, and creating opportunities for local businesses.
219. The Otago CMA and wider coastal environment contain a significant concentration of historic heritage. This reflects the coast's long-standing Māori occupation, early European settlement, and the economic and strategic importance of coast settlements for the wider Otago community.

⁷⁴ Otago Regional Council (2025) Te Awa Ōtākou Issues & Opportunities Report

⁷⁵ Section 3 of the Planning Act 2026 defines historic heritage as natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from archaeological, architectural, cultural, historic, scientific and technological qualities and includes historic sites, structures, places, and areas; and archaeological sites; and sites of significance to Māori, including wāhi tapu, water bodies, or sites in or on the coastal marine area; and surroundings associated with those natural and physical resources.

220. Various historic heritage sites along the Otago coast are listed in the operative Coast Plan. Some sites, such as Moeraki Harbour, Karitāne Point, Pūrākaunui Inlet, Ōtākou/Wellers Rock, Taieri Island/Moturata, Willsher Bay, and Tautuku, are scheduled for their association with whaling and sealing. Other sites are recognised for their military and industrial significance, including the Taiaroa Head stone jetty, Pilots Beach, Deborah Bay torpedo boat site, and the Careys Bay ship breaking and dumping yards and slipway (Isbisters slipway).⁷⁶
221. In addition to sites scheduled in the Coast Plan, historic heritage in the CMA also includes shipwrecks and boat remains. For example, the S.S Victory Wreck Site at Victory Beach and Quarantine Island/Kamau Taurua Historic Area include shipwrecks and boat hulks and are listed on Heritage New Zealand Pouhere Taonga's New Zealand Heritage List/Rārangi Kōrero. This list contains a range of heritage categories, such as Historic Areas, Category 1 and Category 2 Historic Places, National Historic Landmarks, Wāhi Tapu, Wāhi Tapu Area and Wāhi Tūpuna/Tīpuna.⁷⁷
222. Several other locations were identified as having important historic and cultural values in the online survey. These included Shag Point, Mapoutahi Whareakake, and Karitāne, which were often recognised for their Māori and archaeological significance. Respondents also highlighted Taiari/Taieri Mouth, the Ōamaru Historic Town Centre and Port and the Matanaka farm buildings. Participants also recognised the importance of the shipwreck sites and maritime heritage areas situated between Port Chalmers and Aramoana, including areas offshore near the mole.

Issue HH-I1: Inappropriate subdivision, use, and development in the coastal environment can cause adverse effects on historic heritage.

223. The ORPS seeks to protect special or outstanding historic heritage from adverse effects of public access by restricting public walking and vehicle access where necessary, while encouraging the ongoing use and adaptive re-use of historic heritage in a way that maintains and enhances its heritage values.⁷⁸
224. Some activities, such as the construction of new structures or the removal of existing ones, can affect the integrity of historic heritage sites. Activities involving earthworks, deposition, reclamation and disturbance of foreshore and seabed can also damage historic heritage and archaeological sites. Discharges to the CMA may degrade historic heritage values, especially at sites valued for cultural or spiritual reasons.
225. Coastal development and land-use change may also lead to the discovery of previously unknown historic heritage or archaeological sites. While this can create opportunities for

⁷⁶ Otago Regional Council (2001), Regional Plan: Coast for Otago, Schedule 8: Historic sites and values.

⁷⁷ Wāhi Tūpuna means landscapes and places that embody the relationship of mana whenua and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taoka.

⁷⁸ Otago Regional Council, Otago Regional Policy Statement 2021, Coastal Environment CE-P9: Public access & Historical and Cultural Values – Historic Heritage HCV-HH-P7 Maintenance and enhancement of historic heritage

their protection, it can also increase the risk of disturbance or vandalism if these sites are not appropriately managed.

226. Stakeholder feedback emphasised the importance of protecting the Otago coastal environment's diverse heritage values, including archaeological sites, wāhi tapu, wāhi tūpuna, historic structures, cultural landscapes, industrial heritage, and shipwrecks. Participants noted that these places and values make an important contribution to community identity and a sense of place. Feedback also highlighted the need to recognise and protect both recorded and unrecorded heritage sites, proactively manage the effects of climate change on heritage resources, and integrate heritage considerations into coastal development and climate adaptation planning.
227. Unrecorded sites can be exposed by coastal erosion. For example, Māori middens along the Otago Peninsula have been uncovered by wave action. Once exposed, human disturbance (e.g. due to fossicking) can accelerate their degradation.
228. During the community and stakeholder engagement concerns were raised about a lack of protection, monitoring, and enforcement for heritage sites. Some respondents also noted that some heritage features are being allowed to deteriorate over time, while others expressed concern that fast-track development processes could place historic heritage at risk. While a small number of respondents took the opposite view, suggesting that some heritage sites are already over-protected, most respondents who commented on historic heritage generally valued its cultural, archaeological, and maritime significance, and expressed concerns that important heritage places may not be receiving sufficient protection or management.
229. Managing historic heritage in the coastal environment therefore requires balancing the protection of heritage values with other environmental, cultural, and recreational values. In some cases, measures used to protect historic heritage may themselves have adverse effects. For example, structures or fences used to protect heritage sites can interfere with natural coastal processes, restrict public access, or impede the movement of marine wildlife. While such circumstances are relatively uncommon, they illustrate the need to consider the broader environmental and social effects of heritage protection measures.

Natural character and outstanding natural features and landscapes

230. Natural character in the coast is defined by its natural elements and features (such as headlands, peninsulas, cliffs, beaches, dunes and estuaries), processes (such as the rise and fall of tides, sediment movement, and the natural formation and functioning of estuaries, wetlands, lagoons, beaches, dune systems, sand bars, sand spits and surf breaks), and patterns (such as dune succession). When determining natural character,

experiential attributes, including the sounds and smells of the sea, and their context or setting, are also considered.⁷⁹

231. Natural character exists along a spectrum, from areas of high naturalness to low natural character, where environments have been degraded or modified. The integrity of natural biophysical, ecological, geological and geomorphological systems and processes is central to the concept of natural character. Areas of high natural character are often valued for their wildness, scenic value and the natural darkness of the night sky.

232. Outstanding Natural features and landscapes /seascapes focus more specifically on visible, often iconic landforms and scenic beauty, but can also encompass a broader range of sensory, and associative values.⁸⁰ They can be highly valued for their visual character.

233. Otago has many outstanding natural features and landscapes along the coast. The existing Coast Plan identifies 15 Outstanding Natural Features and Landscapes, including large tracts of the Otago's Peninsula's eastern shoreline and Nugget Point/Tokata in the Catlins.⁸¹ These areas are located both on the landward and seaward side of MHWS to provide a mechanism for recognising the values adjacent to the CMA when assessing the impact of activities located within the CMA. Territorial authorities also have outstanding landscapes mapped on the landward side of the CMA.⁸²

234. Many coastal landscapes are also significant to tangata whenua with many existing mapped features referencing Kai Tahu cultural and spiritual values as a reason for their protection.

Issue NC-I1: Natural character of the coastal environment can be affected by the modification of natural systems and processes including exclusive occupation.

235. The natural character of the coastal environment relies on the functioning of dynamic natural systems such as estuaries, dunes and gravel bars and processes. Activities that modify the coastal environment can alter habitats, disrupt ecological processes, and reduce the naturalness of the coast.

⁷⁹ Environment Foundation (July 2026) 'Natural Character' Retrieved from <https://www.environmentguide.org.nz/issues/natural-character/>

⁸⁰ Department of Conservation (September 2013) 'NZCPS 2010 Guidance note Policy 15: Natural features and natural landscapes' Retrieved from <https://www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/>

⁸¹ Otago Regional Council (2001), Regional Plan: Coast for Otago, Schedule 3.2 Outstanding Natural Features and Landscapes above Mean High Water Springs.

⁸² Three district councils in the Otago region have mapped areas with natural character values, outstanding natural features and landscapes which have been assessed as worthy of protection.⁸²⁸²⁸² Overall, approximately 52% of Otago's coast on the landward side of the CMA is protected in some form. Dunedin City and Clutha District Council's District Plans include mapped coastal areas, landscapes and features with varying natural character and landscape value classifications, each associated with different levels of protection. The proposed Waitaki District Plan includes landscape overlays and a planning framework that identifies and protects coastal landscapes and features, but this plan is not yet operative.

236. Structures and long-term occupation of the CMA can also affect natural character. Structures may disturb or permanently alter seabed and foreshore habitats, change natural coastal character and processes, or reduce water quality through shading, sedimentation, and discharges of contaminants. Where poorly located, they can also reduce the sense of openness and naturalness of the coast. Multiple structures in the same area can result in cumulative effects on coastal values, while abandoned or poorly maintained structures can create safety hazards, restrict public access and use, or cause water quality degradation where contaminants are leaching from the structure. Community and stakeholder feedback suggests that monitoring and maintenance of coastal structures could be improved to reduce impacts on natural character.
237. Various other activities that impact on natural character of the coastal environment are addressed in other sections of this report and include reclamation, tourism and recreation, resource extraction such as sand mining, and land and marine-based pollution, all of which can further degrade natural character values through their effects on landforms and ecosystems.⁸³
238. Engagement feedback highlighted pollution and contamination, development and resource extraction as important threats to the natural character of the coast. Climate change and land reclamation were also raised as significant concerns.
239. Various participants emphasised the importance of protecting native wildlife and habitats and maintaining the natural character of the Otago coast while balancing environmental protection with recreation, tourism, infrastructure, community wellbeing, and economic development.
240. Concerns were also raised about changes to beaches. Participants noted apparent reductions in sand and increases in gravel along sections of the Clutha District and Catlins coastline, particularly around Toko Mouth and Kaka Point. Some considered these changes evidence of broader shifts in sediment supply and coastal processes.
241. Coastal development and changing land use patterns were also identified as risks to the natural character of Otago's coast, as they can significantly impact on coastal landscapes and natural character by changing the naturalness of an area, and the visual, cultural and amenity values associated with it.⁸⁴ Some stakeholders considered that spatial planning provides an opportunity to better manage activities that affect the coast's natural character, while others emphasised the need for planning frameworks that appropriately balance economic development with environmental protection. Engagement identified opportunities for greater collaboration between government agencies to support more effective management of coastal natural character.

⁸³ Quality Planning (2026) Managing activities in the coastal environment. Retrieved from Issues Relating to Coastal Land Development | Quality Planning

Issue NC-I2: Outstanding natural features, landscapes and seascapes within the coastal environment can be affected by changes in the type or intensity of activities on land and in the marine area

242. The demand for development and use of resources along the coast can impact the qualities that make landscapes and seascapes outstanding. The more outstanding a feature is, the more demand there is to experience and enjoy it. This can result in the establishment of more structures and facilities, such as roads, bridges, jetties, moorings, ramps, signs and pathways, within these areas.
243. A key driver of change in the coastal landscapes and seascapes is residential development, including the expansion of coastal settlements, population intensification, and increased rural residential development. These pressures are often driven by demand for coastal views and easy access to the recreational and economic opportunities offered by the coast.⁸⁵ Inappropriate subdivision, use and development can degrade natural landscape values, both individually and cumulatively. Coastal landscapes are vulnerable to visual impacts from coastal development due to their high visibility from the sea, foreshore and surrounding skylines.⁸⁶ Some people identified lighting along parts of Otago Harbour, port infrastructure, quarry activities, and built structures as activities that can cumulatively alter how the coast looks and feels.
244. Feedback from the community consistently described Otago's coast as rugged, wild, open, scenic, peaceful and natural. The sense of remoteness and opportunity to experience nature away from large numbers of people were frequently mentioned as one of the defining qualities of the region's coastline. People particularly valued sea views, undeveloped beaches, wildlife encounters, and the contrast between urban and remote coastal environments. The Catlins area was often cited as embodying these qualities.

Surf breaks

245. Surf breaks are an important component of coastal natural character and a significant recreational resource for New Zealanders and international visitors. They contribute economic and social benefits to both local communities and New Zealand as a whole. Surfing draws people to live in coastal areas and attracts domestic and international tourists. Local businesses are stimulated by the presence of surf breaks; surf-related retailers, surfboard rentals, surfboard shapers and surf schools can often be found nearby.
246. Surfing also provides social benefits, with many surf schools and local board-rider clubs promoting a sense of community. Programs like *Surfing for Farmers* promote surfing as a mental health break for people in rural communities.⁸⁷

⁸⁵New Zealand Coastal Policy Statement 2010 (Amended 2025)

⁸⁶Quality Planning (2026) Managing activities in the coastal environment, retrieved from [Issues Relating to Coastal Land Development | Quality Planning](#)

⁸⁷ Surfing for farmers (2026) Retrieved from <https://www.surfingforfarmers.com/our-locations-registercheck-in>

247. These social, recreational, and economic benefits were reflected in public feedback, which indicated that surf breaks are valued not only as recreation sites but also as an important part of Otago's identity and culture. Participants noted that surfing contributes to lifestyle, tourism and community wellbeing.
248. Various surf breaks along the Otago coast are recognised as having exceptional surfing value at a national scale. Otago has four of these nationally significant surf breaks identified in the NZCPS, more than any other region in New Zealand. These are The Spit at Aramoana, Karitāne, Whareakeake, and Papatowai.^{88 89}

Issue SB-I1: The use and enjoyment of surf breaks can be impacted by activities on land and in the coastal marine area.

249. The demand for development and use of resources in the CMA and wider coastal environment can affect the integrity, accessibility, use and enjoyment of surf breaks. Coastal development pressures often result in the establishment of new foreshore and offshore structures to support coastal development or protect it from coastal processes, such as seawalls or shoreline armouring, groynes, breakwaters, jetties and marinas. These structures and engineering works often interact with and modify coastal processes. While they can have a positive effect on wave quality (both accidentally and intentionally), more often their effects on surf breaks are negative.
250. Activities that either remove sediment from within the footprint of a surf break or reduce sediment supply to a surf break, such as dredging, can change the physical characteristics of the seabed, which can alter the wave shape, speed, and overall 'surfability'. While the disposal of dredge spoil near a surf break can create 'wave focusing' effects that may enhance surf break wave quality, the activity more often has adverse impacts on this quality.^{90 91} Concerns about the potential effects of dredging on surf conditions were frequently raised during the community and stakeholder engagement.
251. Other potential threats to surf breaks identified through the engagement were coastal development, poor water quality, and dumping activities. Landward development, including urban and infrastructure development, can result in increased discharge of contaminants to coastal waters which, if not appropriately controlled, can affect water quality and amenity values at surf breaks.

⁸⁸ Department of Conservation (September 2018) 'NZCPS 2010 Guidance note Policy 16: Surf breaks of national significance' Retrieved from <https://www.doc.govt.nz/Documents/conservation/marine-and-coastal/coastal-management/guidance/policy-16.pdf>

⁸⁹ New Zealand Coastal Policy Statement 2010 (Amended 2025), Schedule 1

⁹⁰ Davies-Campbell, J. A. T. A. (2018). The morphology and surf conditions of Aramoana Beach, Otago: A surf break of national significance (Thesis, Master of Science (MSc)). The University of Waikato, Hamilton, New Zealand. Retrieved from <https://hdl.handle.net/10289/12027>

⁹¹ Pitt, A., 2009. Surfing at Bombora Controlled Beaches. The 5th Western Australia Coastal Conference, Fremantle, WA. Pitt, A., 2010. Proposal for an Ephemeral Bombora at Cronulla. Report Prepared for the Bate Bay Sand Place Committee, Cronulla, NSW

252. Participants also recognised the impacts of natural hazards, sea level rise, and climate change on valued surfing locations, such as at St Clair Beach. Concerns were raised about quarrying, mining, material extraction and oil exploration, as well as the potential effects of aquaculture in swell-exposed areas.
253. Some respondents called for an inventory of regionally significant surf breaks and stronger protection for these areas.

Opportunity SB-O1: Improved management and access to Otago's surf breaks can support economic, recreational and community benefits

254. Stakeholder and community feedback indicated that Otago's surfing resources are an under-recognised economic opportunity, with potential to further support local businesses, attract visitors, and enhance the region's recreation and tourism offering.
255. There is an opportunity to better recognise and promote the value of surf breaks while ensuring that their environmental and recreational qualities are maintained. Feedback highlighted support for promoting public access to surf breaks, while recognising that access needs to be managed appropriately to avoid undue pressure on the environment and loss of the overall surfing experience. Participants expressed interest in learning from overseas experience and approaches to surf break management to help protect these valued coastal resources.



Kāi Tahu values and relationship with the coast

256. Kāi Tahu have a close and enduring kinship connection to the coastal environment in Otago. The relationship with the coast and with the indigenous species found there is both ancestral and contemporary, based on inherited whakapapa, mātauraka (knowledge) and pūrakau (myth, story), but also on the ongoing exercise of mahika kai and kaitiaki responsibilities.
257. Kāi Tahu are a coastal people, with permanent settlements tending to be on the coast and inland areas traditionally used for seasonal mahika kai gathering. Following the land sales of the mid-19th century, reliance on coastal land and the abundant resources available in the estuaries and coastal waters became increasingly important as access to and use of inland mahika kai was lost as a result of land development, drainage and clearance of indigenous vegetation.
258. The mana whenua authority that hapū and whānau hold over coastal land is accompanied by mana moana authority in the adjoining coastal waters. The authority and responsibility that mana moana carries includes the ability to act as kaitiaki and be actively involved in decision-making around management, access and use of natural resources. Mana is also associated with the ability to provide manaakitaka, which requires healthy ecosystems and kaimoana resources.

Mana motuhake (autonomy, self-determination)

Takaroa pūkunohi nui The god of the sea Takaroa can observe all we are doing

Issue KT-I1: The ability of Kāi Tahu mana whenua to exercise rakatirataka, manaakitaka and kaitiakitaka can be hampered by a lack of recognition of mana moana

259. Despite the longstanding customary authority held by Kāi Tahu over coastal waters, decisions about management of these areas in most circumstances have been made without recognition of this authority or any involvement of Kāi Tahu mana whenua. The sustainable management of the coast and mauri (life force, life-supporting capacity) of coastal waters and ecosystems is compromised by the exclusion of those who hold mātauraka and experience as kaitiaki and decision-makers. In some areas this has resulted in partial or total loss of access to kaimoana resources. Inappropriate use of information on areas regarded as tapu or taoka, or public release of detailed resource information in areas regarded as customary fisheries can also undermine rakatirataka and kaitiakitaka.
260. When the mana moana of Kāi Tahu mana whenua is not recognised, there is a sense of loss amongst hapū and whānau in relation to inter-generational responsibilities to safeguard resources and habitats. There can also be diminishment to mana when healthy

kaimoana cannot be provided to sustain whānau, manuhiri (visitor, guest) and mokopuna (future generations).

Opportunity KT-O1: Mana whenua-led environmental management and improved involvement of mana whenua in decision-making would support the relationship of Kāi Tahu to the coast and contribute to positive environmental outcomes.

261. Kāi Tahu already have significant involvement in management of the coastal environment. Through taiāpure and mātaimai mechanisms, mana whenua are leading well-established programmes to restore the habitats that support customary fisheries and the surrounding marine environment. More recently they have also begun working in partnership with the Department of Conservation to manage Te Au Roa o Rākohouia, the Otago marine protection network. Mana whenua have also identified further opportunities for playing a leading role in management of Otago Harbour. These include development of an Integrated Catchment Group for Otago Harbour, in partnership with councils and the community, and working with relevant agencies to improve harbour and coastal access.

Mauri (life-supporting capacity)

He pūkenga wai, he pūkenga kōrero A body of water is a body of knowledge

Issue KT-I2: Degradation of the coastal environment, including wāhi tūpuna, wāhi tapu, taoka and mahika kai, has negative impacts on the connection of Kāi Tahu to the coast

262. The relationship of Kāi Tahu to the coast is kept alive by the ongoing ability to interact with and care for the places and landscapes that provide connection to tūpuna and the indigenous species that inhabit the coast, and by the ability to exercise mahika kai. Activities such as dredging, reclamation and discharge of contaminants and sediment that degrade the coastal environment and coastal waters or harm indigenous species can impact on this relationship. Changes in coastal processes, introduction of structures into the coastal environment or exclusive occupation of coastal space can interrupt the relationship by impeding access to wāhi tūpuna and to mahika kai resources. Changes to coastal processes such as erosion and accretion can also damage wāhi tapu and wāhi tūpuna values.

263. When the Kāi Tahu connection to and use of the coast is interrupted or otherwise degraded, it is difficult to pass on mātauraka, to exercise kaitiakitaka and to use traditional resources, the result being cultural severance. Loss of indigenous species and habitats affects customary fishing and other mahika kai practices that are essential to Kāi Tahu identity and well-being. Lack of recognition that some areas and resources have been used for generations affects perception of customary title and status as mana

moana. Areas of particular significance such as wāhi tūpuna or wāhi tapu can become degraded or exploited where mana moana do not hold a decision-making role, or where there is lack of awareness around the Kāi Tahu relationship.

Opportunity KT-O2: Use of mātauraka alongside other science programmes can improve the health of the coastal environment and restore the mauri of valued places.

264. Opportunities for use of mātauraka to address the problems of coastal degradation extend across the areas of research, policy development, implementation of environmental enhancement programmes and environmental monitoring. Research and monitoring that brings together the knowledge of mana whenua and of scientists is already a central part of taiāpure and mātaimai work programmes. There is potential to expand this approach, drawing on intergenerational understanding of the interrelationships between species and their environment to inform monitoring and management. This intergenerational understanding is valuable not only for informing habitat restoration but also for addressing the challenges of adaptation to the changing climate.

Mahika kai

Te kōkopu, te kai o Maui The kōkopu, the food of Maui

Issue KT-I3: Lack of recognition for customary fisheries and degradation of the coastal environment has limited the ability of Kāi Tahu to manage and use these resources

265. Customary fisheries can be recognised via statutory mechanisms such as taiāpure and mātaimai, but this does not guarantee healthy and abundant kaimoana resources. Health and abundance of these resources are necessary requirements for harvest to be culturally appropriate. As a result, discharges, sedimentation and other activities affecting the mauri of coastal fisheries and the integrity of coastal habitats can limit the ability for Kāi Tahu to harvest resources.

266. Other parts of the Otago coast not covered by such statutory mechanisms may also be known by Kāi Tahu as customary fisheries but there is often no recognition of this or ability for Kāi Tahu mana whenua to act as kaitiaki over fisheries resources and habitats.

267. Many important indigenous mahika kai fish species are diadromous and move between freshwater and the ocean during different parts of their life cycle. The interconnection between land and marine environments needs to be carefully considered in order to manage effects on the life cycles of these species that cross the CMA boundary.

268. When Kāi Tahu who hold mana whenua/mana moana are unable to act as kaitiaki of customary fisheries, this can lead to degradation of the resource and associated habitats. Customary fisheries contribute to the economic and cultural well-being of Kāi Tahu mana

whenua and there is a strong cultural concern when these fisheries are degraded. Through the Ngāi Tahu Deed of Settlement 1992, customary fisheries mechanisms are a form of Treaty redress that need to be recognised and provided for. Provisions made to enable management of customary fisheries sometimes limit management techniques to those used traditionally. However scientific research and new technologies also need to be recognised as important tools for kaitiaki to use to enhance and restore resources where these have been diminished.

Opportunity KT-O3: Active mana whenua leadership in management of the coastal environment provides the opportunity to restore mahika kai and ensure mahika kai species and habitats are resilient to climate change.

269. Mātaitai and taiāpure customary fisheries management programmes provide a mandated opportunity for Kāi Tahu leadership in collaboration with researchers and others. This approach provides a model for broader mana whenua-led management and restoration of mahika kai. Opportunities for leadership in this area are not limited to management of traditional fisheries but could, for example, extend to development of aquaculture approaches that would support mahika kai resilience in the face of climate change, in tandem with positive ecological effects.

Ahi kā (long-burning fires of occupation)

Au ahi au ora. Au moana, aua noa atu. The comfort of a fire ashore; the uncertainty of a stormy or foggy sea.

Issue KT-I4: The ability for Kāi Tahu to live on and use native reserves and Māori land has been impeded by institutional and regulatory barriers.

270. Much ancestral land, including land in native reserves set aside for settlement purposes, has been alienated from Kāi Tahu ownership and use. Even where retained within Kāi Tahu ownership, a range of factors have made it difficult for land to be settled and used economically and for cultural purposes. This is a legacy issue, having played out since the 1840s, but some drivers remain relevant today.

271. Difficulty in achieving finance and insurance, particularly on Te Ture Whenua land with multiple owners, has been a longstanding problem that has limited the ability to develop this land. A lack of institutional understanding of the importance of the remaining land to provide a base for settlement and use, and lack of recognition of the close connection between traditional whenua and use of adjacent CMA, have also resulted in inadequate provision being made in resource management plans and in infrastructure planning for use of these areas. In some areas the obstacles to development and use are added to by planning provisions such as protective overlays that do not recognise the role of the land. In addition to these factors, the coastal location of many areas of native reserve and Māori land in Otago makes these areas susceptible to climate change and natural hazards.

272. The ability of Kāi Tahu hapū and whānau to connect to their haukāika (ancestral home) is compromised when they are hindered from being able to settle and use these ancestral areas. This causes harm to the economic and cultural wellbeing of mana whenua and Māori landowners and can damage the relationship to wāhi tūpuna and other taoka. This issue plays out across the interface between regional and district jurisdictions. For example, ancestral whenua may cross the boundary between the identified coastal environment and what is considered 'not coastal'; or areas of ancestral whenua are now in the marine area having been lost to coastal erosion. The rakatira (mana, authority) and kaitiaki roles of mana whenua across both whenua and adjacent CMAs is not factored in management approaches that focus on land-based users and activities.

Opportunity KT-O4: Improved infrastructure connections and removal of barriers to land development would support reconnection of Kāi Tahu whānau to the coastal environment and enhance opportunities for mana whenua to work with neighbouring communities to achieve environmental outcomes.

273. The ability to live on ancestral land is seen by Kāi Tahu hapū as an important factor in enabling whānau to reconnect with the whenua and the moana. This will result in stronger communities, increased visibility of the rich Kāi Tahu heritage associated with the Otago coast and a greater ability for mana whenua to carry out kaitiaki roles to ensure the health of the coastal environment for future generations of all Otago residents.



Conclusion

274. The issues and opportunities identified throughout this report highlight that the future of the Otago coast will be shaped by how effectively competing values, uses, and expectations are balanced. The coast supports a diverse range of environmental, cultural, social, and economic values, many of which are interconnected and, at times, can result in tension between these values. Achieving positive outcomes will require careful consideration of these interrelationships and recognition that decisions made in one location or sector often influence outcomes elsewhere.
275. The report demonstrates that many of the pressures facing the coast are not the result of a single activity or issue. Rather, they arise from the cumulative effects of land use, development, resource use, environmental change, and historic decisions. Climate change is likely to intensify many of these pressures, increasing the importance of long-term thinking and proactive management. At the same time, growing demand for coastal space and resources will require difficult choices about how the coast is used, protected, and developed
276. A consistent theme throughout the report is the importance of recognising the coast as part of a broader *ki uta ki tai* (mountains to sea) system. The health of coastal environments is closely linked to what happens in inland catchments, rivers, estuaries, harbours, and the wider marine environment. Similarly, the long-term wellbeing of coastal communities depends on maintaining healthy ecosystems, protecting important cultural and heritage values, and enabling sustainable economic opportunities.
277. The report also highlights the importance of partnership, collaboration, and shared responsibility. Many of the issues identified fall beyond the responsibilities of any single organisation and cannot be resolved through regulation alone. The aspirations expressed through community and stakeholder engagement highlight that councils, mana whenua, communities, industry, landowners, and resource users all play a role in shaping positive outcomes for the coast.
278. The transition to a new resource management system provides an opportunity not simply to replace existing planning documents, but to reconsider how coastal management is approached in Otago. The findings of this report suggest that future planning should move beyond managing individual activities in isolation and instead adopt a more integrated, adaptive, and collaborative approach. To achieve positive outcomes, the following key recommendations are proposed:
1. Adopt a *ki uta ki tai* (mountains to sea) approach that integrates the management of land, freshwater, estuarine and marine environments and addresses cumulative effects.
 2. Strengthen partnerships with Kāi Tahu by supporting participation in decision-making and recognising mana moana (customary authority relating to the coastal marine area), kaitiakitaka (guardianship, stewardship), manaakitaka (the process of showing respect, generosity and care for others), mahika kai, and associated cultural values.

3. Use the issues and opportunities identified in this report as a foundation for strategic planning.
 4. Improve resilience to climate change and coastal hazards through adaptive management, resilient infrastructure, risk-informed planning, and consideration of managed retreat where appropriate.
 5. Protect and restore coastal biodiversity by enhancing habitats and ecosystems, addressing invasive species and habitat loss, and supporting restoration initiatives.
 6. Support monitoring, research and adaptive management to improve understanding of coastal environments and inform future decision-making.
 7. Maintain and enhance public access while balancing the need to protect sensitive environments, cultural values, and public safety.
 8. Enable sustainable economic development that supports social, cultural and economic wellbeing while appropriately managing environmental effects.
 9. Provide a strategic framework for marine aquaculture that supports investment certainty, recognises iwi interests, and manages environmental effects.
 10. Strengthen coastal biosecurity management through effective planning, monitoring, infrastructure, and collaborative responses to marine pests.
 11. Protect natural character, landscapes, surf breaks and historic heritage as important components of Otago's identity and coastal values.
 12. Promote nature-based solutions where practicable to improve biodiversity and strengthen resilience to coastal hazards.
 13. Foster collaboration and shared stewardship between councils, mana whenua, agencies, communities, industry, landowners, and coastal users.
279. The Otago coast is both a highly valued resource and a shared responsibility. By adopting an integrated, resilient, and collaborative approach to coastal management, Otago can maintain and enhance the environmental, cultural, social, and economic values that make its coast distinctive while ensuring that future generations continue to benefit from a healthy and thriving coastal environment.

References

Cardwell, H, RNZ, (5 July 2022) 'Marine heatwaves: How is aquaculture adapting to climate change?' Retrieved from https://www.rnz.co.nz/news/national/470344/marine-heatwaves-how-is-aquaculture-adapting-to-climate-change?utm_source=copilot.com | RNZ News

Cawthron Institute (July 2021) Case Study: Climate change and shellfish aquaculture. Retrieved from https://www.cawthron.org.nz/research/climate-change-shellfish-aquaculture/?utm_source=copilot.com

Clutha District Council (2023) Vehicles on Beaches Bylaw

Davies-Campbell, J. A. T. A. (2018). The morphology and surf conditions of Aramoana Beach, Otago: A surf break of national significance (Thesis, Master of Science (MSc)). The University of Waikato, Hamilton, New Zealand. Retrieved from <https://hdl.handle.net/10289/12027>

Department of Conservation (2025), 'Contaminated sites management, Contaminated sites programme priority list' Retrieved from <https://www.doc.govt.nz/globalassets/documents/about-doc/role/managing-conservation/contaminated-site-management/contaminated-sites-programme-priority-list.pdf>

Department of Conservation (2026) 'A strategy to support the health of Hoiho/Yellow-eyed penguin' retrieved from <https://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/penguins/yellow-eyed-penguin-hoiho/a-strategy-to-support-the-health-of-hoiho/>

Department of Conservation (2026)' Predicted suitable sites for NZ sea lions' retrieved from <https://www.doc.govt.nz/nature/native-animals/marine-mammals/seals/new-zealand-sea-lion/predicted-suitable-sites/>

Department of Conservation (2026)'New marine reserves for the southeast of the South Island' retrieved from <https://www.doc.govt.nz/news/media-releases/2026-media-releases/new-name-for-otagos-marine-reserve-network/>

Department of Conservation (September 2013) 'NZCPS 2010 Guidance note Policy 15: Natural features and natural landscapes' Retrieved from <https://www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/>

Department of Conservation (September 2018) 'NZCPS 2010 Guidance note Policy 16: Surf breaks of national significance' Retrieved from <https://www.doc.govt.nz/Documents/conservation/marine-and-coastal/coastal-management/guidance/policy-16.pdf>

Department of Conservation (2026)'New marine reserves for the southeast of the South Island' retrieved from <https://www.doc.govt.nz/news/media-releases/2026-media-releases/new-name-for-otagos-marine-reserve-network/>

Department of Conservation (2018) 'Dunedin wildlife care code' retrieved from <https://dunedinhost.co.nz/wp-content/uploads/2018/12/Dunedin-Wildlife-Care-Code-AO-Poster-1.pdf>

Dunedin City Council (2026) 'Driving on the beach' retrieved from <https://www.dunedin.govt.nz/community-facilities/parks-and-reserves/driving-on-the-beach>

Ellison, M (2025, June) 'Puketeraki' Mātaitai Application' Retrieved from <https://www.mpi.govt.nz/consultations/application-for-puketeraki-mataitai-reserve-east-otago>

Environment Foundation (July 2026) 'Natural Character' Retrieved from <https://www.environmentguide.org.nz/issues/natural-character/>

Giles, H. Pisces Consulting Limited, (2026) 'Information and advice for managing the effects of marine aquaculture in the Otago region.

Green, C, Otago Daily Times (27 June 2015), 'Artefacts endangered by erosion', Retrieved from <https://www.odt.co.nz/news/dunedin/artefacts-endangered-erosion>

Heritage New Zealand, Pouhere Taonga(2026) New Zealand Heritage List, Rārangi Kōrero, Retrieved from <https://www.heritage.org.nz/places>

Hilton, M. Department of Geography, University of Otago (2010) 'The Geomorphology of the Ocean Beach Dune System – Implications for Future Management of Ocean Beach Domain.' retrieved from https://www.dunedin.govt.nz/_data/assets/pdf_file/0009/335817/Appendix-11.-Dune-Geomorphology.pdf

Hoshino, M. (2014) The Effects of Noise Pollution on Marine Mammals, University of Otago

Kāi Tahu ki Otago. 2005. *Kāi Tahu ki Otago Natural Resource Management Plan 2005*. Dunedin: Kāi Tahu ki Otago.

Kettle Park Landfill: Assessment of Remedial Options Retrieved from https://infocouncil.dunedin.govt.nz/Open/2025/08/CNL_20250826_ATT_3120_EXCLUDED.HTM#PDF3_ATTACHMNT_27140_1

Lewis, J, Otago Daily Times (11 December 2021) 'Aquaculture farm experimental' retrieved from <https://www.odt.co.nz/news/dunedin/campus/aquaculture-farm-experimental>

MacDonald, K, Jacobs New Zealand Limited(July 2021), Molyneux Bay and Clutha Delta morphology investigation

Marine Biodiversity & Sustainability Learning Centre (July 2026) 'Understanding Marine Noise Pollution: Sources and Scale' retrieved from <https://www.marinebiodiversity.ca/the-oceans-silent-crisis-how-noise-pollution-is-destroying-marine-life/>

Mangan S, Bryan KR, Thrush SF, Gladstone-Gallagher RV, Lohrer AM, & Pilditch CA. (2020) 'Shady business: The darkening of estuaries constrains benthic ecosystem function. *Marine Ecology Progress Series*; 647, 33–48. Retrieved from <https://doi.org/10.3354/meps13410>

Māori Commercial Aquaculture Claims Settlement Act 2004.

Marine and Coastal Area (Takutai Moana) Act 2011 Section 4(2)(e)(i)-(ii)

McNelly, H (25 August 2025) Stuff, 'The former dump at risk of coastal exposure' retrieved from <https://www.stuff.co.nz/nz-news/360799708/former-dump-risk-coastal-exposure>

Minister of Oceans and Fisheries (October 2024) 'Notice Declaring Aquaculture Settlement Areas in the Otago Region for the Purposes of the Māori Commercial Aquaculture Claims Settlement Act 2004' (Notice No. MPI 1869)

Ministry for Oceans and Fisheries, (December 2024) 'New Zealand Aquaculture Development Plan 2025–2030', retrieved from <https://www.beehive.govt.nz/sites/default/files/2025-03/NZ%20Aquaculture%20Development%20Plan%202025-2030.pdf>

Ministry for Primary Industries (2023), State of Knowledge: Climate Change and New Zealand's Seafood Sector, Ministry. Retrieved from <https://www.mpi.govt.nz/dmsdocument/56242-Climate-change-and-NZs-seafood-sector-2023>

Ministry for the Environment & Stats NZ (2025). New Zealand's Environmental Reporting Series: Our environment 2025 | Tō tātou taiao

Ministry for the Environment (2024) Ngā pūmete takutai me te ārahitanga huringa āhuarangi, Coastal Hazards and climate change guidance, p24 Retrieved from <http://environment.govt.nz/assets/publications/Coastal-hazards-and-climate-change-guidance-2024-ME-1805.pdf>

Ministry for the Environment (2025) 'Our Marine Environment 2025 Tō Tātou Taiao Moana, Our coasts and estuaries are affected by a changing ocean' Retrieved from <https://environment.govt.nz/publications/our-marine-environment-2025/our-coasts-and-estuaries-are-affected-by-a-changing-ocean/>

Ministry for the Environment (2025) 'Our Marine Environment 2025 Tō Tātou Taiao Moana, Section 4 Marine' Retrieved from <our-environment-2025.pdf>

Morris, C (5 April 2019) Otago Daily Times, 'Many Otago landfills at risk from erosion' Retrieved from <https://www.odt.co.nz/news/dunedin/many-otago-landfills-risk-erosion>

National Institute of Water & Atmospheric Research Ltd (NIWA) (2009) Biological Resources of Otago Harbour and Offshore: Assessment of Effects of Proposed Dredging by Port Otago Ltd.

National Institute of Water & Atmospheric Research Ltd (NIWA) (2026) 'Aquaculture activities' Retrieved from <https://niwa.co.nz/freshwater/kaitiaki-tools/what-proposed-activity-or-industry/aquaculture-and-customary-fisheries/aquaculture-activities#:~:text=Fish%20farming,appropriate%20stocking%20densities%20and%20feeding.>

National Institute of Water & Atmospheric Research Ltd (NIWA) (2019) Waitaki district coastal hazards report, 2018035CH

Ngāi Tahu ki Murihiku. (2008). *Te Tangi a Tauira: The Cry of the People : Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008*. Invercargill, New Zealand: Ngāi Tahu ki Murihiku.

Natural Environment Act, 2026

New Zealand Archaeological Association(2026), ArchSite database, Retrieved from <https://nzaa-archsite.hub.arcgis.com/pages/public-map>

New Zealand Biosecurity Institute ‘What is Biosecurity?’ Retrieved from <https://www.biosecurity.org.nz/about-us/what-is-biosecurity/>

New Zealand Coastal Policy Statement (NZCPS) 2010 (Amended 2025)

Otago Regional Council (2025), Te Awa Ōtākou Issues & Opportunities Report. Prepared by Morphem Environmental Ltd

Otago Regional Council (2026), Otago Coast Engagement Report. Summary of Feedback on Issues and Opportunities for the Otago Coast, July-August 2026

Otago coast Issues and Opportunities Engagement July-August 2026: Community and Stakeholder Feedback Summary Report

Otago Regional Council, Otago Regional Policy Statement (2021)

Otago Regional Council, (2026) Selected Land Use Sites (SLUS) Register, Retrieved from <https://www.orc.govt.nz/environment/waste/contaminated-land/#selected-land-use-sites-slus-register>

Otago Regional Council, Regional Plan: Coast for Otago (2001)

Pitt, A., 2009. Surfing at Bombora Controlled Beaches. The 5th Western Australia Coastal Conference, Freemantle, WA. Pitt, A., 2010. Proposal for an Ephemeral Bombora at Cronulla. Report Prepared for the Bate Bay Sand Place Committee, Cronulla, NSW

Planning Act 2026

Quality Planning (2026) Managing activities in the coastal environment, Retrieved from [Issues Relating to Coastal Land Development | Quality Planning](#)

Queensland Government (July 2026) ‘Wetland Info- Salinity (Water)’ retrieved from <https://wetlandinfo.detsi.qld.gov.au/wetlands/ecology/components/water-chemical/salinity-water/>

Resource Management (Stock Exclusion) Regulations 2020

Resource Management Act 1991

Rullens V, Mangan S, Stephenson F, Clark DE, Bulmer RH, Berthelsen A, ... & Pilditch CA. (2022). Understanding the consequences of sea level rise: The ecological implications of losing intertidal habitat. *New Zealand Journal of Marine and Freshwater Research*, 56(3), 353–370. Retrieved from <https://doi.org/10.1080/00288330.2022.2086587>

Sánchez-Arcilla, A., Cáceres, I., LeRoux, X., Hinkel, J., Schuerch, M., Nicholls, R.J., Otero, dM., Staneva, J., deVries, M., Pernice, U., Briere, C., Caiola, N., Gracia, V., Ibáñez, C., Torresan, S. December 2022) ‘Nature Based Solutions, Vol 2, Barriers and enablers for upscaling coastal

restoration’, Retrieved from

<https://www.sciencedirect.com/science/article/pii/S2772411522000246>

Sanford Limited, (19 December 2024) ‘Project East- Fast track application to the Ministry for the Environment’ retrieved from [Project East | Ministry for the Environment](#)

SLR Consulting New Zealand Limited (December 2025) ‘Coastal Consent Data Monitoring Review’

Smyth, A. R., Laughinghouse, H.D., Reynolds, L.K., Camp, E.V., and Havens, K. (April 2024)

‘Climate Change: Effects on Salinity in Florida’s Estuaries and Responses of Oysters, Seagrass, and Other Animal and Plant Life.’

Surfing for farmers (2026) Retrieved from <https://www.surfingforfarmers.com/our-locations-registercheck-in>

Te Rūnanga o Ngāi Tahu, Department of Conservation, Yellow-eyed Penguin Trust and Fisheries New Zealand (2019) ‘Te Kaweka Takohaka mō te Hoiho 2019-2029’ retrieved from <https://www.doc.govt.nz/globalassets/documents/conservation/native-animals/birds/sea-and-shore/te-kaweka-takohaka-mo-te-hoiho-2020.pdf>

Te Tiaki Mahinga Kai, 2026 ‘Area Management Tools (AMTs)’ Retrieved from <https://www.mahingakai.org.nz/resources/what-are-amts/>

Tonkin and Taylor Limited, June 2011 ‘Ocean Beach Domain Reserve Management Plan Coastal issues and options’, Dunedin City Council retrieved from <https://ref.coastalrestorationtrust.org.nz/site/assets/files/8633/ocean-beach-coastal-issues-and-options-report.pdf>

Tonkin and Taylor Limited, (August 2025) Kettle Park Landfill, Assessment of remedial options, Dunedin City Council, August 2025 p8 Retrieved from https://infocouncil.dunedin.govt.nz/Open/2025/08/CNL_20250826_ATT_3120_EXCLUDED.HTM#PDF3_ATTACHMENT_27140_1

Tonkin Taylor, prepared for Otago Regional Council, (2021) ‘Otago Climate Change Risk Assessment 2021’

Waitaki District Council, Roading Bylaw 2020, Clause 4.7

Appendix A: Roles, responsibilities, regulatory functions and limitations, and management approaches for the Otago coast

Roles and responsibilities in coastal management

281. The coastal environment is governed by many laws, national policy statements, regional and local authority planning instruments and strategies. Overlapping legislation, administered by different agencies and authorities for different purposes, all add to the complexity of managing the coastal environment.

282. Regional councils are responsible for managing how natural resources are used, protected, and improved within their regions. In the coastal marine area (CMA), this includes managing coastal water and natural hazards, controlling discharges to land, air, and water, allocating natural resources (including the use of water and energy from water), and protecting indigenous biodiversity, and natural character and landscapes.⁹²

283. Regional councils also have responsibility for the management of freshwater and can regulate certain land-based activities. Because activities on land or involving freshwater can directly affect the health of the coastal environment, management approaches across these different environments must be well-aligned.

284. While district councils have no responsibilities in the management of the CMA, they play a role in managing the wider coastal environment. Within Otago, the Waitaki District Council, Dunedin City Council, and Clutha District Council all have coastal boundaries. They manage land use and development adjacent to the CMA through their District Plans and bylaws.

285. Central government agencies also play key roles in coastal management:

- The Department of Conservation (DOC) is responsible for protecting and managing public conservation lands and waters, native species, and historic heritage across the region.
- The Environmental Protection Authority (EPA), New Zealand's National Environmental Regulator, is responsible for managing the effects of particular marine activities in offshore waters in the Economic Exclusion Zone (EEZ).
- The Ministry for Primary Industries (MPI) oversees biosecurity, fisheries and aquaculture management.
- The Ministry for Business, Innovation and Employment (MBIE) is responsible for the allocation of Crown-owned minerals.
- Heritage New Zealand Pouhere Taonga has an interest in the identification and protection of coastal heritage.

⁹² Resource Management Act 1991 s30

- Maritime New Zealand is responsible for maritime safety, security, and the environmental protection of coastal and inland waterways.

286. In some parts of the coast, mana whenua have responsibilities under the Fisheries Act for managing customary fisheries through mātaihai and taiāpure provisions. There are four mātaihai reserves and one taiāpure in the Otago region. In addition to customary fisheries management areas, a network of five new marine reserves, known as Te Au Roa o Te Rakihouia, came into effect in July 2026.

Regulatory functions and limitations

287. Under the Resource Management Act 1991 and the Natural Environment Act 2026, certain activities cannot occur in the CMA unless specifically allowed by a national instrument or regional plan, now called a natural environment plan. These activities include reclamation, disturbing, draining or placing structures on, the foreshore or seabed, depositing substances that may cause adverse effects, and introducing exotic plants.⁹³ In addition, national regulations also require stock to be excluded from natural wetlands that are located in CMA and that are identified in a regional plan.⁹⁴

288. Regional councils cannot manage through a natural environment plan specific activities that are managed under other legislation. Table 1 outlines the activities that ORC can manage in their natural environment plan and the activities it cannot manage.

⁹³ Resource Management Act 1991, s 12; Natural Environment Act 2026, s21

⁹⁴ Resource Management (Stock Exclusion) Regulations 2020, regulation 17

Table 1: Activities regional councils can and cannot manage under the proposed new resource management framework

Council CAN manage	Council CANNOT manage
Coastal water quality	
Taking, use, damming, or diversion of coastal water, or taking energy from coastal water	
Discharges of contaminants to land, air, or water	Activities controlled by the Resource Management (Marine Pollution) Regulations 1998 (e.g., ship discharges, offshore installation discharges)
Dumping and incineration of waste or other matter in CMA	
Allocation of natural resources (e.g., sand, shingle, shell)	
Occupation of coastal space	
Reclamation, disturbance or drainage of the foreshore or seabed	
Protection of indigenous biodiversity, including introduction of exotic or introduced plants	
Setting ecological health limits (using national methods)	Human health limits for coastal and freshwater (set by central government)
Managing environmental effects of fishing activities	Fishing activity itself (e.g., catch limits, stock sustainability, the Fisheries Act 1996)
Managing environmental effects of aquaculture activities and marine farming	Allocating aquaculture settlement areas (The Māori Commercial Aquaculture Claims Settlement Act 2004)
Managing environmental effects of petroleum and mineral extraction in the CMA	Granting rights to extract petroleum or minerals (Crown Minerals Act 1991)

