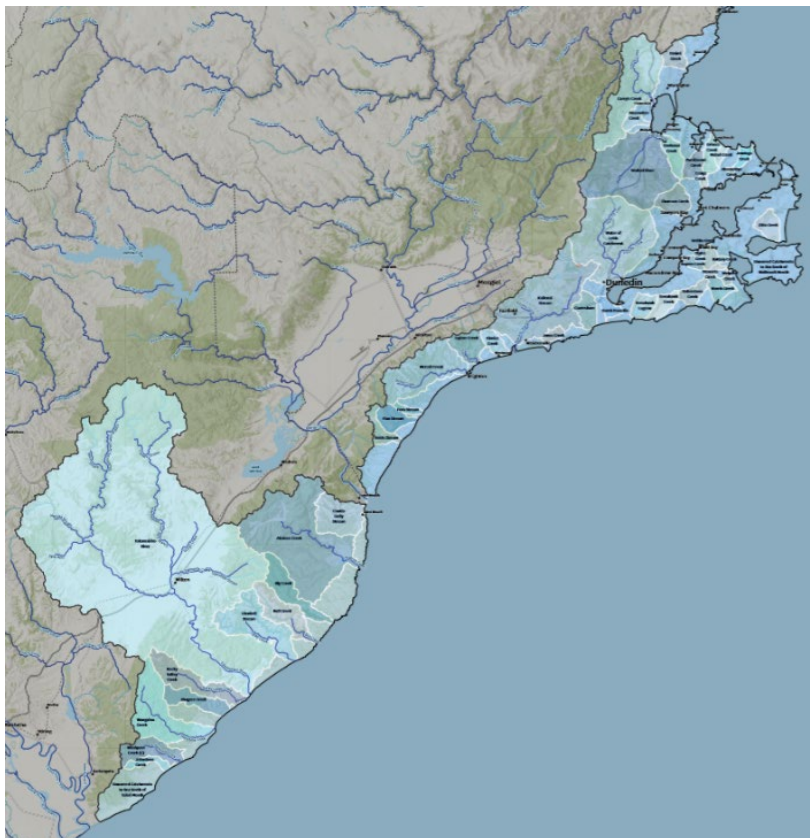


Dunedin Coast FMU

This snapshot summarises what ORC knows about the Dunedin Coast FMU, to support the community in developing a vision for its freshwater.

The Dunedin Coast FMU spans over 1,000 square kilometres of urban and rural land and is home to more than 125,000 people. The Dunedin Coast FMU includes a number of areas : the coastal margins to the north and east of Waitati; Otago Harbour and Otago Peninsula; the City of Dunedin; the narrow coastal strip from Dunedin to north of the Clutha River, and the Tokomairiro River catchment near Milton. With the exception of Tokomairiro River



catchment, many of the catchments are predominantly short river or stream catchments, some associated with estuaries and/or wetlands, especially where the Taieri River cuts through.

Brief history

Maori settlement dates back to around 1250 AD. Initially moa supported a growing population. This was followed by development of fortified settlements from the 1500s associated with further population growth. The arrival of European settlers came with a whaling industry from the early 1800s, and this coincided with the start of a decline in the Maori population. Dunedin was settled in 1848 with a significant Scottish emigration through to 1900. The gold rush of the mid-19th century supported the establishment of a vibrant city. The economy prospered after the gold boom, with Dunedin becoming the leading wool-selling centre in the South Island. Post World War II a diverse economy has continued to develop and is now based on farming, manufacturing, publishing and technology-based industries as well as education, research and tourism.

The estuaries and lagoons fed by the rivers and streams in the Dunedin coastal area, together with the Otago Harbour, were significant mahika kai resources that supported numerous Kāi Tahu settlements in the area.

Matainaka/Hawksbury Lagoon was originally considerably larger. It is now degraded when compared to its historical size and can be eutrophic at times. However, it is still an available and accessible mahika kai and remains a wāhi taoka because of its traditional importance. Kaikarae/Kaikorai Estuary and Owheo/Leith Stream were also important for mahika kai but have been degraded by pollution and water body modification.

Geography and hydrology

Coastal Dunedin has a temperate climate, with oceanic influences. Summer temperatures are generally around 12-19 degrees with the occasional day of up to 30 degrees. Winter temperatures

range from 4-11 degrees with some frosts and occasional light snowfall. Rainfall averages about 700 mm spread evenly through the year. Inland, at Milton there can be a wider range of temperatures.

The Dunedin Coast FMU contains high producing grassland (62%), and grazing for wool, lamb, beef, dairy or deer farming production. Areas of forestry (16%) and native cover (15%) are also widespread. While this FMU has the largest urban centre across Otago, the urban area comprises only 2% of the land area.

Water Quality

Water quality in the Dunedin Coastal area strongly reflects the nature and intensity of surrounding land use. The urban streams (Water of Leith, Lindsay’s Creek and the Kaikorai Stream), have catchment-specific water quality issues due to the presence of infrastructure and stormwater runoff from high levels of impervious surfaces. The Leith Stream catchment has an upper catchment covered in indigenous hardwoods, production forest, manuka/kanuka, and native grassland. While in the lower catchment the bottom and side slopes of the valley are occupied to a large degree by an urban environment consisting of streets and buildings, parks and open spaces. The lower catchment of the Kaikorai Stream has similar characteristics to the Leith Stream in as much as it flows through urban and industrial areas (Kaikorai Valley) before entering the Kaikorai Estuary.

Fraser’s Stream is a major tributary of the Kaikorai Stream into which the Dunedin City Council discharges up to 560 litres per second of high-quality water from the Mt Grand Water Treatment Plant. This flow significantly improves the water quality and instream values of the Kaikorai Stream downstream of the discharge point. The lower catchment of the Tokomairiro has agricultural intensification (sheep, beef and dairy farming as well as some cropping), as well as flowing through an urban area, whereas the upper catchment has a high proportion of forestry. Water quality in all three catchments deteriorates as it travels through more intensive landscapes in the mid to lower catchment.

Freshwater values and challenges

	What’s special about Dunedin Coastal:	What isn’t working so well:
Kai Tahu Values	<ul style="list-style-type: none"> • The ongoing relationship of mana whenua with wāhi tūpuna¹ • Mahika kai values 	<ul style="list-style-type: none"> • Loss of connections to wāhi tupuna from modification of water bodies and land • Effects of nutrient enrichment from waste discharges and urban and rural run-off on estuarine and coastal mahika kai • Effects on mauri and mahika kai resulting from water body modification, restriction of fish passage and environmental degradation • Loss of access to mahika kai and other significant areas

¹ Cultural landscape, encompassing places where the tūpuna travelled, stayed, gathered and used resources, and the associated stories and traditions that transcend the generations.

Environment	<ul style="list-style-type: none"> • Natural character and form of coastal landscape (e.g Otago Peninsula) • Ecological values including <ul style="list-style-type: none"> - forests - healthy estuaries (e.g. Hoopers / Papanui, Blueskin, Tokomairiro, Kaikorai, Akatore, Purakaunui - wetlands (e.g south of Taieri). - wildlife (e.g Hoiho, Albatross, seals, sea lions, red bill gulls, black bill gulls) - marine habitats (e.g cockles on the Peninsula, sea grass) - threatened species e.g lamprey in coastal streams, Eldons galaxiids, Taieri flathead galaxiids. 	<ul style="list-style-type: none"> • Increasing contamination trends in places. <ul style="list-style-type: none"> ▪ Loss of or adverse effects on natural features, landscapes and ecosystem management of the coastal environment ▪ Control of pest plants and animals ▪ Response to climate change threats. ▪ Biodiversity loss. • Impact of upstream uses on the coastal environment.
Economy	<ul style="list-style-type: none"> • Agriculture includes wool, lamb, beef, dairy or deer production. • Forestry and fishing • Tourism • Urban and industrial development 	<ul style="list-style-type: none"> • Marine industry production adversely affected as a result of poor water quality.
Culture and Social	<ul style="list-style-type: none"> • Coastal areas as a place to live and work. • Recreation including beaches, walking, fishing, water sports, wildlife. • Cultural/mana whenua values including important cultural sites for Kāi Tahu. 	<ul style="list-style-type: none"> • Housing development/availability. • Recreational infrastructure • Access to water bodies. • Loss of cultural values.