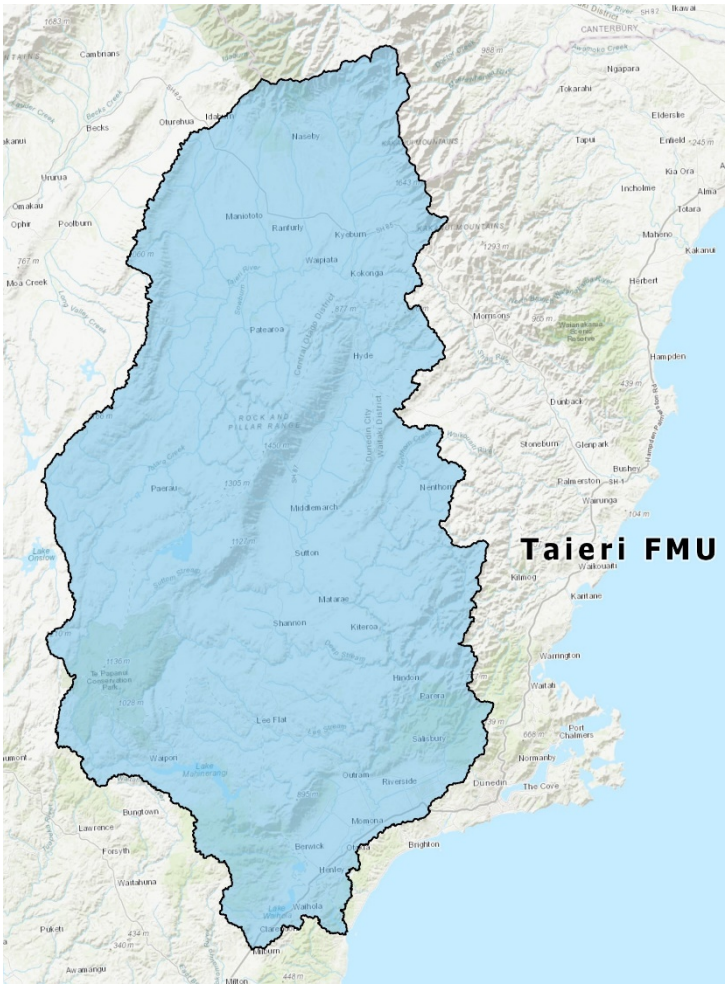
The Taieri Snapshot

This snapshot summarises what ORC knows about the Taieri, to help create a vision for its freshwater.

The Taieri FMU extends from Naseby down to Mosgiel, encompassing most notably the Taieri scroll plains, Taieri River, Kyeburn tributary, Lake Mahinerangi and Lake Waipori.



Brief history

Historically, European settlers used the Maniototo land for livestock as early as the 1850s, while the gold rush saw significant economic growth around Waipiata and Kye Burn in the 1860s.

Post the 1860s Otago Gold Rush the primary economic drivers changed from gold to pastoral farming, which has now become the main economic driver in the Taieri FMU. Of which water is an important component. Macraes Flat, an extensive open-faced gold mine, still operates presently.

Mosgiel is the largest settlement situated at the very bottom of the Taieri, with a population of just over 13,000, followed by Ranfurly and Naseby in the upper Taieri. Much smaller settlements such as Tiroiti, Middlemarch and Waipiata have benefited from the tourism associated with the Otago Rail Trail cycling track and Gold mining heritage.

Flooding has been a historical pressure from the 1800s to present day, and while engineering has significantly reduced the impacts of flooding there is still risk.

Kāi Tahu used all areas of the Taieri catchment, with numerous mahika kai sites and settlements associated with the many waterways, lakes and wetlands in the Upper Taieri, the Strath Taieri and the Lower Taieri Plains. Many of these waterways have been modified, or in the case of Taieri Lake lost, as a result of resource use and development. The Waihola/Waipori wetlands were once one of the most significant food baskets in the Otago region, supporting coastal settlements as far away as the Otago Peninsula and harbour and beyond. The wetlands were once much larger and were connected by a labyrinth of waterways. Lake Waipori was central in a line of lakes that connected with the Taieri River and were the main access to the sea through the coastal range lining the eastern side of the Taieri lowlands. Other ara tawhito[1] also connected the coastal settlements to the plentiful mahika kai in the Taieri catchment.

[1] Old trails used for trade, transport, and resource gathering expeditions.

Geography and hydrology

The upper Taieri headwaters drain a relatively undeveloped area of native tussock country on the northern side of the Lammerlaw Range. The river then flows through the dry, 660km2 area of the Maniototo Plain, west of the Rock and Pillar Range. At the southern end of the Rock and Pillar Range is the man−made Logan Burn reservoir; part of the Combined Maniototo Irrigation and Hydroelectric Scheme. A secondary reservoir for this scheme is located near Paerau.

To the east of the Rock and Pillar Range, the midreaches of the Taieri River flow through the smaller Strath Taieri Plain (occupying an area of 85km2), past Middlemarch, and through the spectacular Taieri Gorge. Many small tributaries join the main stem of the river along this sub−region. Unique native fish communities have been identified in these mid to lower catchment areas. New Zealand's only inland Salt Lake (Sutton Salt Lake) is located in this sub−region, near Sutton.

Most of the human settlement within the Taieri catchment is on the Lower Taieri Plain (occupying an area of 180km2), where the town of Mosgiel is located. The floodplain area is intensively farmed (mostly dairying). The lower Taieri River is joined by the Silverstream, which provides high quality trout spawning and nursery habitats for the river fishery. A large floodplain and the associated Lake Waipori/Waihola wetland complex are the dominant features of the lower catchment. The lake and wetland complex provide some of the most important habitat for native fish, wetland vegetation, and water birds in the region, because of its size, variety of habitats, and position.

Water Quality

The mainstem Taieri generally has high nitrogen concentrations, this is likely to be a combination of the naturally nutrient−rich geology of the catchment alongside the catchment hosting intensive agriculture. Some elevated bacteria results are also present.

It is important to note that water quality changes in all rivers with distance downstream. In a catchment the size of the Taieri it can be expected that the degree of water quality deterioration with distance is significantly influenced by human activities, and depends on complex interactions between:

- climatic factors (affecting flows and temperatures)
- catchment land use (eg. factors affecting diffuse source pollution)
- riparian zones (eg. buffering capacity, bank stability, degree of shade provided)
- impacts of tributaries (which may increase or dilute main stem contaminant concentrations)
- impacts of abstractions (which may reduce assimilative capacity)
- impacts of impoundments (which change physio−chemical conditions)
- effects of point source discharges.

It is also important to note that natural environmental factors are present that reduce water clarity. These include natural dissolved substances such as wetlands releasing brown tanin/humic stained waters, or by suspended sediments during floods, even in natural catchments.

Lakes Waihola and Waipori are at the bottom of the Taieri catchment, they are nutrient rich and extremely shallow. They are prone to algal blooms during the summer months.

Freshwater values and challenges

	What's special about The Taieri:	What isn't working so well:
Kāi Tahu values	• Significant wetlands, including the Waihola/Waipori complex and the Upper Taieri scroll plain wetlands • Mahika kai values across the catchment • The ongoing relationship of mana whenua with wāhi tupuna[2]	• Loss or reduction of water bodies and wetlands • Loss of connections to wāhi tupuna from modification of water bodies and land • Damming of water bodies interrupting the continuity of flow from mountains to the sea • Sedimentation and eutrophication of Lake Waipori and Waihola/Waipori wetlands • Effects on mauri and mahika kai resulting from water body modification, water abstraction, restriction of fish passage and environmental degradation • Loss of access to mahika kai and other significant areas
Environment	• Upper Taieri Wetland complex, High natural values, and culturally significant natural landscapes • Snow Tussock, vulnerable Tufted Hair Grass, and remnant shrublands, Galaxiids, Eels, Clutha and Taieri Flatheads, and the Otago Skink (endangered).	• Sedimentation • E. coli, nitrogen and phosphorus contamination in places • Flooding • Potential for low flows during irrigation season.
Economy	• Paerau and Patearoa hydro power stations • Maniototo and Hawkdun Irrigation Schemes. • Extensive sheep, beef, deer, crops, dairy farming, Macraes Flat gold mining, and Tourism	Intensified land use and potential water availability issues • Climate Change resilience
Social	• Swimming, Kayaking, Hunting, Otago rail trail • Valuable trout fishing and Whitebaiting sites • Gold mining sites, Toroiti Railway Station, Green Bridge, Waipiata Sanatorium (En Hakkore)	• Water quality restricts human contact in some areas

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