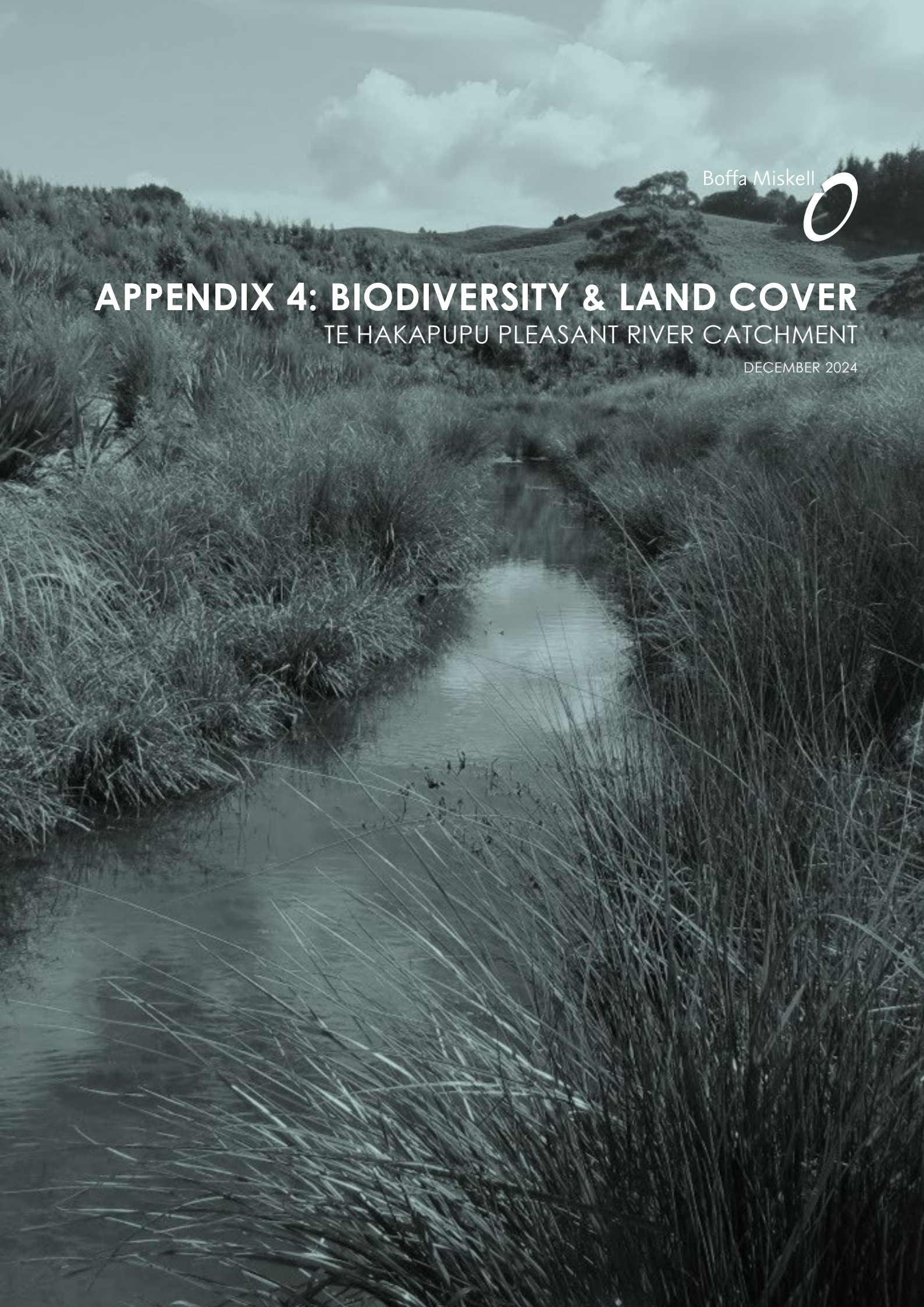


Boffa Miskell

APPENDIX 4: BIODIVERSITY & LAND COVER

TE HAKAPUPU PLEASANT RIVER CATCHMENT

DECEMBER 2024

BIODIVERSITY & LAND COVER CONTEXT

LAND COVER & CONSERVATION

The vegetation cover in Te Hakapupu catchment that may have existed prior to human arrival was likely dominated by forest species such as mataī, tōtara, and kahikatea, with mild climate forest types present in lower elevations and wetland surrounding the upper estuary (Leathwick *et al,* 2012). Today, indigenous forest / scrub areas consisting of kānuka, mānuka, matagouri, and other grey shrub species collectively cover approximately 1% of the catchment. These remnants of indigenous forest are mostly clustered in areas surrounding the estuary and through steeper parts of the south-eastern aspect of the catchment. Threatened and At-Risk plant species previously recorded in the catchment include climbing groundsel and desert broom (both At Risk – Declining; de Lange et al. 2018; Ahikā Consulting Ltd, 2023).

Hawkesbury Bush represents the only moderately large QEII covenant in the catchment, covering 10 hectares of native forest remnants located near the southern extent of the catchment. Restoration planting undertaken by ORC, Kāti Huirapa Rūnaka ki Puketeraki, and the local landowners as part of the Toitū Te Hakapupu project has established approximately 68,000 plants and 27 km of fencing for freshwater enhancement, contributing to the biodiversity values in the area.[1]

ESTUARY WETLAND BIODIVERSITY

The wetland and estuary, known as Te Hakapupu Pleasant River estuary wetland complex, is predominantly an estuarine system covering approx. 84 hectares (~0.6% of the catchment). The estuary wetland complex comprises of mostly salt marsh, saltmeadow, mud flat, and sandspit, supporting vegetation including glasswort (*Salicornia quinqueflora*), saltgrass (*Puccinellia* spp.), rekoreko (*Selliera radicans*), sea primrose (*Samolus repens*), and saltmarsh ribbonwood (*Plagianthus divaricatus*). It is the largest wetland in the North Otago Freshwater Management Unit, and, as an estuary, is a naturally uncommon ecosystem (Williams et al. 2007; Ahikā Consulting Ltd, 2023).

eDNA analysis of fish species in the three main tributaries within the catchment indicated ten species of freshwater fish and seven estuarine / marine species. Of these species, four freshwater fish are considered mahika kai species (īnaka and tuna / longfin eel; At Risk-Declining; and banded kōkopu, and tuna / shortfin eel; Not Threatened). All three estuarine species are considered mahika kai species (kahawai, pātiki / sand flounder, and aua / yellow-eyed mullet).

The estuary and wetland complex provides important habitat for birdlife within the catchment, including kuaka / bar-tailed godwit, pohowera / banded dotterel, tōrea / South Island pied oystercatcher, tarāpuka / black-billed gull and tara / white-fronted tern (all At Risk – Declining), tōrea pango / variable oystercatcher (At Risk - Recovering), as well as poaka / pied stilt and matuku moana / white-faced heron (both Not Threatened; Ahikā Consulting Ltd. 2023).

[1] Toitū Te Hakapupu planting and fencing figures are based on ORC reporting for December 2024 – Successes: planting, fences, and sediment traps.

Table 1: Fish species of the Hakapupu catchment, threat status based on the New Zealand Threat Classification system, and mahika kai status

	SPECIES	THREAT CLASSIFICATION	MAHIKA KAI
Freshwater Migratory	Banded kōkopu	Not Threatened	✓
	Bluegill bully	At Risk – Declining	
	Common bully	Not Threatened	
	Īnaka (inanga)	At Risk – Declining	✓
	Tuna / longfin eel	At Risk – Declining	✓
	Redfin bully	Not Threatened	
	Tuna / shortfin eel	Not Threatened	✓
Freshwater Non-Migratory	Upland bully	Not Threatened	
	Brown trout	Introduced	
	European perch	Introduced	
Marine Estuary	Estuary clingfish	Not assessed	
	Kahawai	Not assessed	✓
	Pātiki / sand flounder	Not assessed	✓
	Spotty	Not assessed	
	Thornfish	Not assessed	
	Aua / yellow-eye mullet	Not Threatened	✓

FISH PASSAGE

An assessment of potential fish passage barriers in the Hakapupu catchment was conducted by Kāti Huirapa Rūnaka Puketeraki and ORC in 2024 (Dale & Rata te Raki, 2024). In total, 20 instream structures were assessed for fish passage across the Hakapupu catchment, with 7 structures considered to be of high priority for replacement or remediation. The Toitū Te Hakapupu project is currently working to improve or replace five of these high priority structures to improve fish passage.

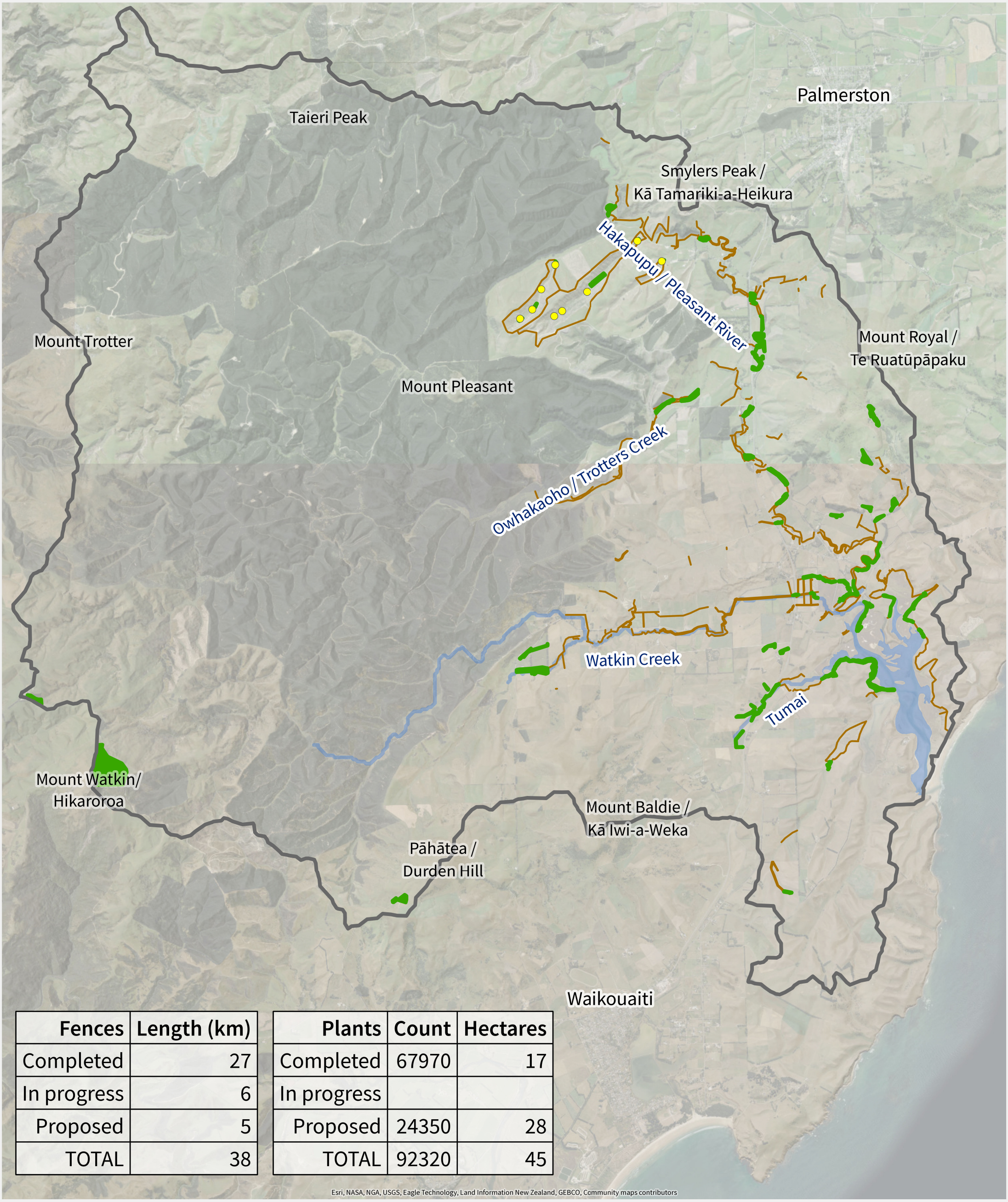
PEST SPECIES

The most prominent pest plants in the wider catchment include gorse and broom. Within the estuarine area, vast meadows of spartina can form causing a build-up of sediment, increasing flood risk. ORC undertakes spartina control work but can also issue notices requiring occupiers to eliminate spartina infestations on their land. Other pests include willows and alders, which disrupt the natural flow characteristics of the waterways under high flow conditions, exacerbating flooding. However, these species are also valued by some in the local community, on the basis that these trees provide riparian shade, stabilise riverbanks and reduce bank erosion. Community feedback has also described high number of pigs and deer coming out of forestry areas in the upper catchment, causing damage to pasture.

Toitū Te Hakapupu

Successes: plantings, fences and sediment traps

Otago Regional Council



Fences	Length (km)
Completed	27
In progress	6
Proposed	5
TOTAL	38

Plants	Count	Hectares
Completed	67970	17
In progress		
Proposed	24350	28
TOTAL	92320	45

Pleasant River Catchment

Plantings

Fences

Completed Sediment Traps (9)

0 1.5 3
kilometres

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