8. Management Units

8.1 Overview

The project area contains a number of reserves within the Pourewa Valley, including the Pourewa stream and its tributaries that require restoration work including pest plant control, pest animal control and planting. These reserves have been identified as management units (MU's) in Figure 26, with required weed and pest animal control and planting options outlined.

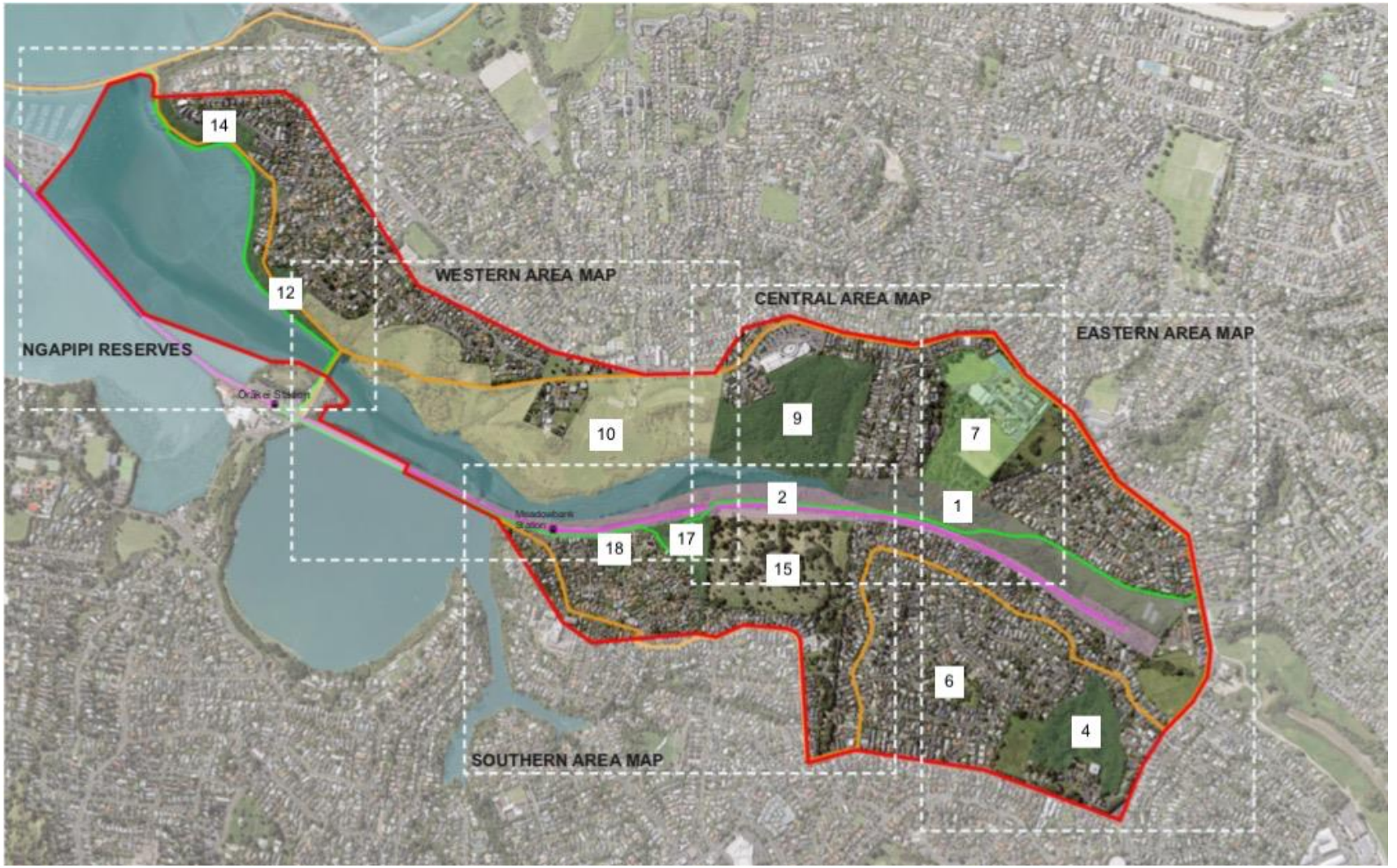

Figure 26: ***Management Units***

8.2 Waka Kotahi (Management Unit 1)

The land parcel is Waka Kotahi land that provides access via the John Rymer and St Johns Road shared pathway entrances into the Pourewa Valley, with the Pourewa stream running through the catchment and down to the coast. In addition to the shared pathway, a track network follows the course of the stream on its north banks and leads into Kepa Bush.

The forest area next to the Pourewa Stream consists of exotic canopy trees; mainly macrocarpa, privet, wattle and willow. A discrete number of emergent indigenous canopy trees include puriri. Exotic trees are generally dominant in the canopy with over 50% cover/biomass exotic. Indigenous understory planting by volunteers is changing the exotic/indigenous composition. A robust understory exists beneath these canopy species; however pest plants are also climbing up trees and smothering them as well as forming a dense ground cover which is stopping the regeneration of indigenous plants. This comprises mainly climbing asparagus and wandering willie and some arum lily. There are also contiguous areas of scrub on the south side of the Pourewa Stream adjacent to the planted area managed as part of the shared pathway network. The part of the land parcel adjacent to Selwyn Bush on the north bank of the Pourewa Stream is a Significant Ecological Area (SEA) – Exotic Scrub (ES) terrestrial ecosystem, and the land in the upper catchment above the John Rymer entrance is Coastal Broadleaved Forest (WF4) .

There are a number of pest plant incursions within the reserve as shown in figure 27; both in the streamside vegetation and the forest. In addition, there are infestations of pest plants on adjoining planted areas managed as part of the shared pathway. This includes concentrated incursions of single species including climbing asparagus in the lower parts of the forest between Selwyn Park and the Pourewa Stream.

Figure 27: Pest plant abundance (density % of biomass)

8.2.1 Pest Plant Species & Control Method

Common name	Threat	ID	Method (chem; non-chem)	Who
Arum lily *(Zantedeschia aethiopica)*	Sustained Control	3,18,19,37	CP H	Volunteer Volunteer
Black Wattle (*Acacia mearnsii)*	Not listed	26,28,41	CP; R; DF H (seedlings); C; CM	Volunteer Volunteer (seedlings)/Eco-Contractor (Trees)
Cherry *(Prunus campanulata)*	Not listed	3,6,11,15,31	R; DF C; CM	Volunteer Eco-Contractor
Climbing asparagus* *(Asparagus scandens)*	Sustained Control	2,3,5,6,10,13 15,16,17,18,1 924,25,26,29, 3031,32,33,34 ,35,38,**40**	FS	Eco- Contractor
English Ivy *(Hedera helix)*	Sustained Control	6,32	FS; CP H	Eco- Contractor Volunteer

Ginger (*Hedychium gardnerianum; H. flavescens)*	Sustained Control	2,3,5,10,11,13,14,15,18,19,21,23,32,35,36,37,38	CP H	Volunteer Volunteer
Gorse *(Ulex*spp.)	Sustained Control	3,4,8,10,11,12,13,22,26,28,29,39	CP; FS CM	Eco-Contractor Eco-Contractor
Hawthorn *(Crataegus monogyna)*	Sustained Control	26,36	?	
Jasmine *(Jasminum polyanthum)*	Sustained Control	22,25,27,28,35	CP;FS H	Eco-Contractor Volunteer
Macrocapra *(Cupressus macrocarpa)*	Not listed	2	CP C; CM	Eco-Contractor Eco-Contractor
Moth Plant (*Araujia sericifera)*	Sustained Control	15,19,26	CP; FS H	Eco-Contractor Volunteer
Pampas (*Cortaderia jubata and C. selloana)*	Sustained Control	3,12,14,16,19,26,27,29,30,39,41	FS H	Eco-Contractor Eco-Contractor
Privet – Chinese *(Ligustrum sinensis)*	Sustained Control	3,6,13	CP; R; DF H (seedlings); C; CM	Volunteer Volunteer (seedlings)/Eco-Contractor (Trees)
Privet – Tree *(Ligustrum lucidum)*	Sustained Control	3,4,5,6,8,10,12,13,14,16,17,18,19,22,23,24,25,26,27,28,29,31,33,34,36,37,41	CP; R; DF H (seedlings); C; CM	Volunteer Volunteer (seedlings)/Eco-Contractor (Trees)
Spider Plant **(***Chlorophytum comosum)*	Not listed	12	?	
Wandering willie *(Tradescantia)*	Sustained Control	2,3,22,23,35,37	FS H	Eco-Contractor Volunteer

Woolly Nightshade (*Solanum mauritianum)*	Sustained Control	10,21,22,26,2829,31,35,39,41	CP; R H;C	Volunteer Volunteer

Method code: Cut & Paste (CP) Cut – non chemical (C) Ringbark (R) Foliar spray (FS) Drill & Fill (DF) Hand (H) Chip & Mulch (CM)

***Species where areas of incursion are one species only (ID numbers in bold)**

8.2.2 Indicative planting schedule for riparian margins

Common name	Species	Plant Grade	Spacing (m)
Oioi	*Apodasmia similis*	PB3	0.5
Swamp maire	*Syzygium maire*	PB3	1
Mahoe	*Melicytus ramiflorus*	PB3	1
Puriri	*Vitex lucens*	PB3	1

8.2.3 Indicative planting schedule for forest understory

Common name	Species	Plant Grade	Spacing (m)
Rimu	*Dacrydium cupressinum*	PB3	1
Kahikatea	*Dacrycarpus dacrydioides*	PB3	1
Kawakawa	*Piper excelsum*	PB3	1
Large leaved Coprosma	*Coprosma grandifolia*	PB3	1
Mahoe	*Melicytus ramiflorus*	PB3	1
Puriri	*Vitex lucens*	PB3	1

Shining Coprosma	*Coprosma lucida*	PB3	1
Kohekohe	*Dysoxylum spectabile*	PB3	1

Figure 28: Pest animal control sites

8.2.4 Pest Animal Species & Control Method

Species	Method	Trap Type	Who
Rat	B; T	Protecta Ambush T-rex in Wooden Tunnel Timms	Volunteer Residential Trapper
Possum	T	Timms	Volunteer Residential Trapper
Mice	B; T	Protecta Ambush T-rex in Wooden Tunnel	Volunteer Residential Trappers
Hedgehogs	T	Timms T-rex in Wooden Tunnels	Volunteer

			Residential Trappers
Stoat	T	DOC200	Volunteer
Wasp	S	Sprays	Volunteer

Method code: Bait (B) Trap (T) types of trap Spray (S)

Figure 29: Water Quality Monitoring sites and In Stream values

8.2.5 Water Quality Results (Baseline)

Site	Temp	Clarity	Turbidity	PH	D.O	Nitrate	Nitrite	Phosphorous	Phosphate
John Rymer Place Entrance	16.3	70	6.6	6.5	9	1	0	0.0375	0.115

8.2.6 Volunteer Groups

- Pourewa Restoration Group
- Forest & Bird