2. Soils in the SIR

2. Soils of the SIR

2.1 Soil Maps of Irrigation Districts

The SIR has detailed published soil maps, which were prepared for the Murray Valley (MV), Goulburn Valley (GV) and Rochester (RO) irrigation districts during the period from 1942 to 1964. These three irrigation districts are shown in Figure 1.

2.2 Soil Types and Soil Groups

Soils of the SIR have been categorised into 148 soil types mainly based on soil profile features such as colour, texture, depth and topographical position in the landscape. Soils with similar land use capabilities are grouped together in 6 soil groups. Soil groups were designed primarily for giving an indication of crop suitability of soils. The soil types, their associated areas and soil groups in each irrigation district are presented in Tables 1.1, 1.2 and 1.3.

The soil types, soil groups and irrigation districts in the published soil maps were used as a reference for the design of data collection and the analysis of the results in this study.

Soil hydraulic properties of Group 1 were found to be highly variable as this group comprises highly dissimilar soil types. For this reason, Group 1 is divided into two sub groups; Group 1 Sandy soils (Group 1S) and Group 1 Duplex soils (Group 1D).

2.3 Soil Horizons

Most of the soil types of the region are layered and commonly known as duplex soils. They are characterised by a shallow Horizon A of 10-20 cm and presence of a restricting layer at or below the interface with Horizon B1. Soil hydraulic properties of both Horizons A and B1 were measured for 34 sites at 79 sites in the SIR. Figure 2 shows the location of sampling sites in the MV, GV and RO irrigation districts.

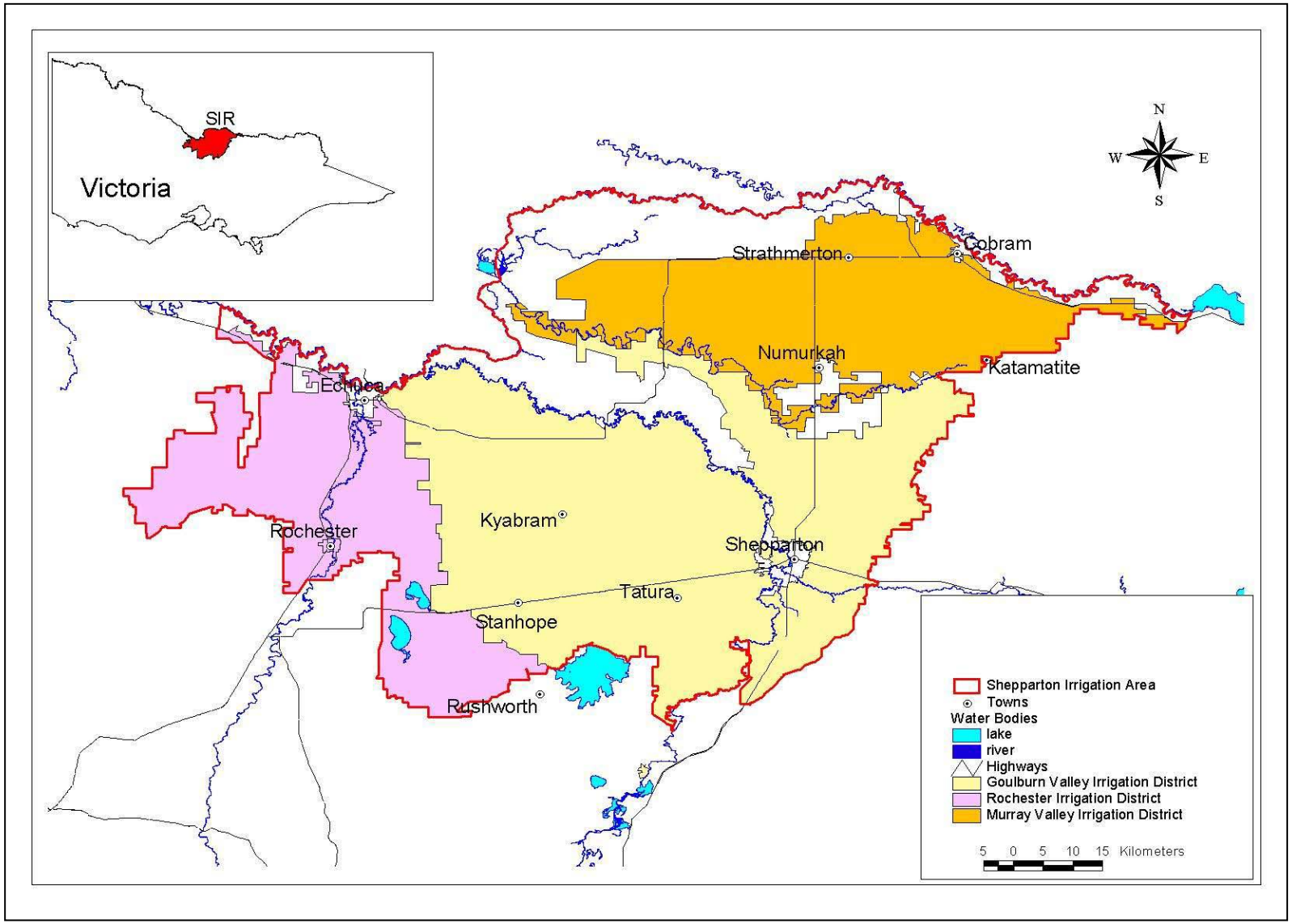

Figure 1 Irrigation Districts of the SIR

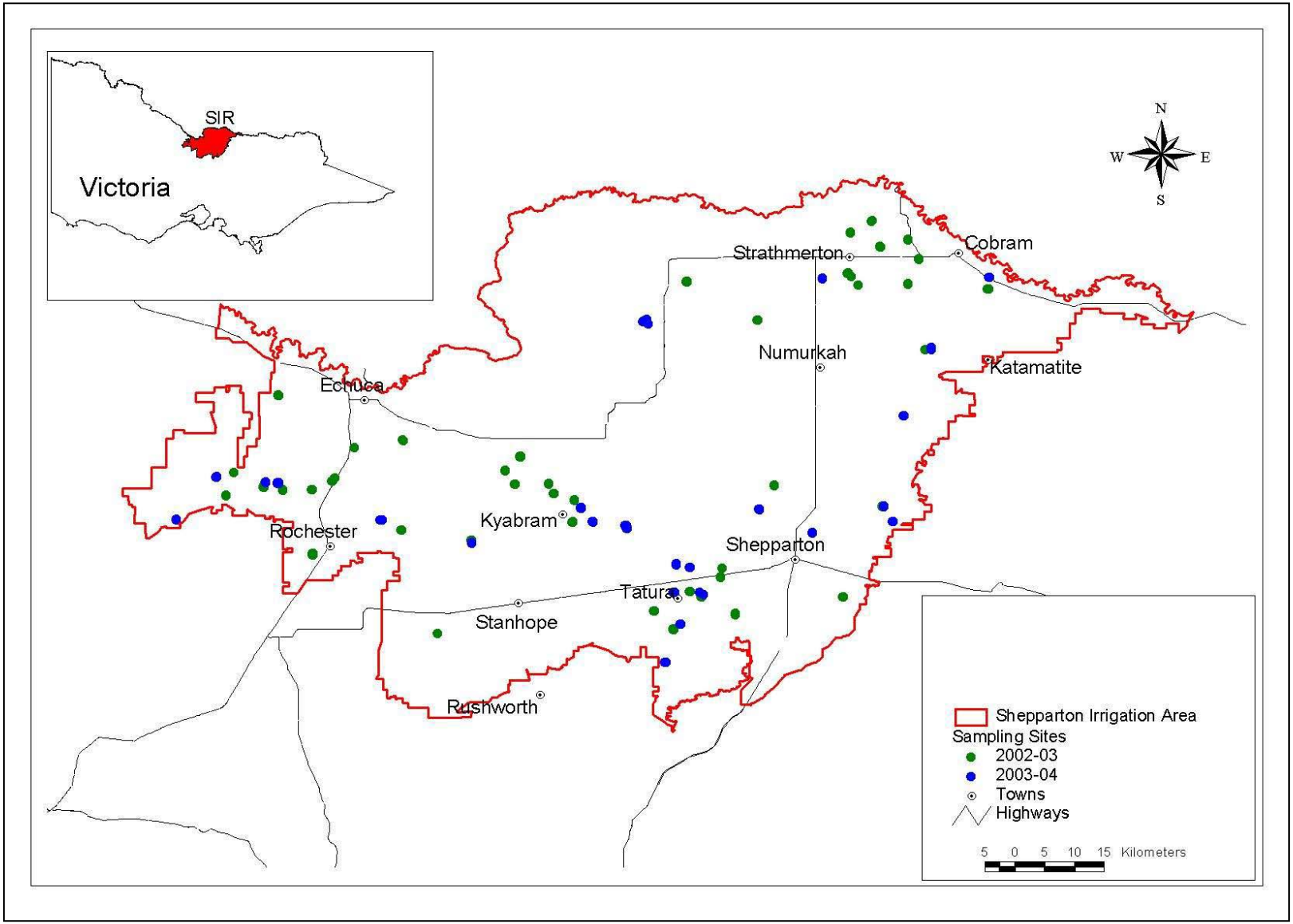

Figure 2 Sampling Sites

Table 1.1 Soil types - MV District

Soil Type	Soil Symbol	Soil Group Group	Area Covered (ha)	Measured Soil
Barwo silty loam	Basl	3	137	
Barwo silty loam phase	Baslp	3	497	
Boosey clay loam	Bcl	5	1,967	
Boosey loam	Bl	6	11,081	√
Boosey loam friable phase	Blpf	6	459	√
Boosey loam light phase	Blpl	6	476	
Cobram loam	Cl	2	12,041	√
Cobram Loam light phase	Csl	2	664	
Cobram sandy loam	Cslp	2	3,044	
grey sandy soil	C	1S	285	
grey/sandy loam over clay	E	2	487	
Kaarimba silty loam	Kbsl	2	124	
Kaarimba silty loam phase	Kbslp	2	108	
Katamatite loam	Kl	2	235	
Katunga gravelly loam	Kagl	4	1,489	
Katunga loam	Kal	4	350	
Katunga sandy loam	Kasl	4	395	
Moira loam	Ml	3	23,442	√
Moira loam friable phase	Mlpf	2	6,735	√
Moira loam heavy phase	Mlph	3	312	
Moira loam light phase	Mlpl	3	4,768	
Muckatah clay loam	Mcl	6	9,469	√
Mywee clay	Myc	5	2,930	
Naring loam	Nl	3	12,939	√
Naring loam friable phase	Nlpf	3	454	
Naring loam heavy phase	Nlph	3	302	
Naring loam light phase	Nlpl	3	677	
Narioka silty clay loam	Nkscl	6	387	
Picola loam	Pil	5	770	
resembles Csl to Ss range	D	1D	95	
Sandmount sand	Ss	1S	2,185	√
Sandmount sand phase	Ssp	1S	276	√
Sandmount sand shallow phase	Sssp	1S	801	
similar range Ss to Csl	B	1D	1,052	√
similar to Cl, no lime	A	1D	586	
Type 1	T1	5	606	
Type 2	T2	2	2,135	
Type 3	T3	3	259	
Type A	TA	1D	743	
Type B	TB	1D	658	
Type C	TC	1D	498	
Type D	TD	1D	87	
Ulupna clay	Uc	5	5,779	√
Unclassified	U	0	1,599	
Waaia loam	Wal	2	6,101	√
Waaia loam phase	Wlp	2	5,321	√
Waaia sandy loam	Wsl	2	408	
Yarroweyah loam	Yl	3	1,852	
Total			128,068	

Table 1.2 Soil types - GV District

Soil Type	Soil Symbol	Soil Group	Area Covered (ha)	Measured Soil
Arkoo Loam	Akl	4	72	
Complex I	I	6	197	
Complex II	II	5	585	
Complex III	III	6	1,827	
Complex IV	IV	6	375	
Congupna Clay	Cc	6	4,257	√
Congupna Clay Loam	Ccl	5	12,633	√
Coomboona Clay	Coc	5	163	
Coomboona Loam	Col	4	887	
Coomboona Loam, red-brown	Colr	4	49	
Dunbulb Loam	Dl	4	322	
East Shepparton fine sandy loam	Efsl	1D	4,998	√
Erwen Loam, Normal Phase	Erl	3	1,112	
Goulburn Clay Loam	Gcl	4	18,306	√
Goulburn Loam	Gl	4	29,535	√
Goulburn Loam Friable Phase	Glfp	3		√
Grahamvale Sandy Loam	Grsl	1D	35	
Gupna Fine Sandy Loam	Gufsl	4	1,838	
Gupna Loam	Gul	4	1,642	
Karook Loam	Krl	3	31	
Katamatite Loam	Kl	2	88	√
Koga Clay Loam	Kgcl	4	268	
Koyuga Clay Loam	Kocl	4	557	
Lemnos Loam	Ll	3	67,243	√
Lemnos Loam Friable Phase	Llfp	3		√
Lemnos Loam Semi-friable Phase	Llsfp	3		√
Orvale Loam	Ol	4	405	
River Frontage	R.F.	6	1,003	
Sandmount Sand	Sms	1S	1,018	
Shepparton Fine Sandy Loam	Sfsl	2	38,213	√
Type 1	1	4	506	
Type 1h	1h	4	204	
Type 2	2	6	7,125	
Type A	A	4	325	
Type B	B	4	76	
Type C	C	4	45	
Type D	D	4	15	
Type E	E	4	378	
Type F	F	4	11	
Type H	H	5	7	
Type J	J	2	161	
Type K	K	3	40	
Type N	N	4	124	
Type O	O	5	81	
Type R	R	5	38	
Type S	S	4	266	
Unclassified/No name			9,551	
Wenora Loam	Wel	4	137	
Yuga Clay	Yc	5	55	
Zeerust Fine Sandy Loam	Zfsl	4	1,939	
Total			208,743	

Table 1.3 Soil types - RO District

Soil Type	Soil Symbol	Soil Group	Area Covered (ha)	Measured Soil
Alta Clay Loam	Acl	5	3,989	√
Arkoo Loam	Akl	4	864	
Binnabin Clay	Bic	4	616	
Campaspe Suite type 1	C1	5	815	
Campaspe Suite type 2	C2	5	314	
Campaspe Suite Type 3	C3	5	579	
Carag Clay	Crc	6	8,056	√
Colbinnabbin Clay	Cc	4	321	
Colbinnabbin Clay Loam	Ccl	4	571	
Cornella Clay	Cac	5	1,880	
Corop Clay	Cpc	6	1,483	
Erwen Loam	Erl	3	1,818	
Kanyapella Clay	Kpc	5	1,894	
Kanyapella Clay Loam	Kpcl	5	1,392	
Karook Fine Sandy Loam	Kfsl	3	310	
Karook Loam	Kl	3	523	
Koga Clay loam	Kgcl	4	23,490	√
Koyuga Clay Loam	Kocl	4	15,983	√
Lockington Sand	Ls	1S	44	
Lunette Soils - Unclassified	Lns	4	1,871	
Moora Clay	Mc	5	906	
Moora Clay Loam	Mcl	5	1,496	
Naneela Fine Sandy Loam	Nfsl	1D	4,685	√
Naneela Loamy Fine Sand	Nlfs	1D	421	
Prior Stream Bed	1	4	1,156	
Prior Streams	2	6	694	
Prior Streams	2	4	1,450	
Restdown Clay	Rdc	6	8,026	
Rochester Clay	Rc	5	8,992	√
Rooka Loam	Rl	5	1,053	
Timmering Loam	Til	2	10,035	√
Timmering fine sandy loam	Tifsl	2	1,234	
Type A	A	4	95	
Type B	B	4	131	
Type C	C	4	281	
Type D	D	5	294	
Type E	E	4	244	
Type F	F	4	79	
Type G	G	5	97	
Type H	H	3	90	
Type J	J	4	582	
Unclassified	U		11,041	
Variable Soils in drainage ways	Dv	6	3,172	
Wallenjoe Clay	Wjc	6	8,195	√
Wana Clay Loam	Wacl	4	1,707	
Wana Loam	Wnl	4	7,629	√
Wanalta Loam	Wl	3	6,851	√
Wanalta Loam	Wl	4	14,347	
Wanurp Sandy Loam	Wpsl	3	796	
Wenora Loam	Wel	4	294	
Yambuna Clay	Ybc	5	2,048	
Yuga Clay	Yc	5	8,351	
Total			173,285	