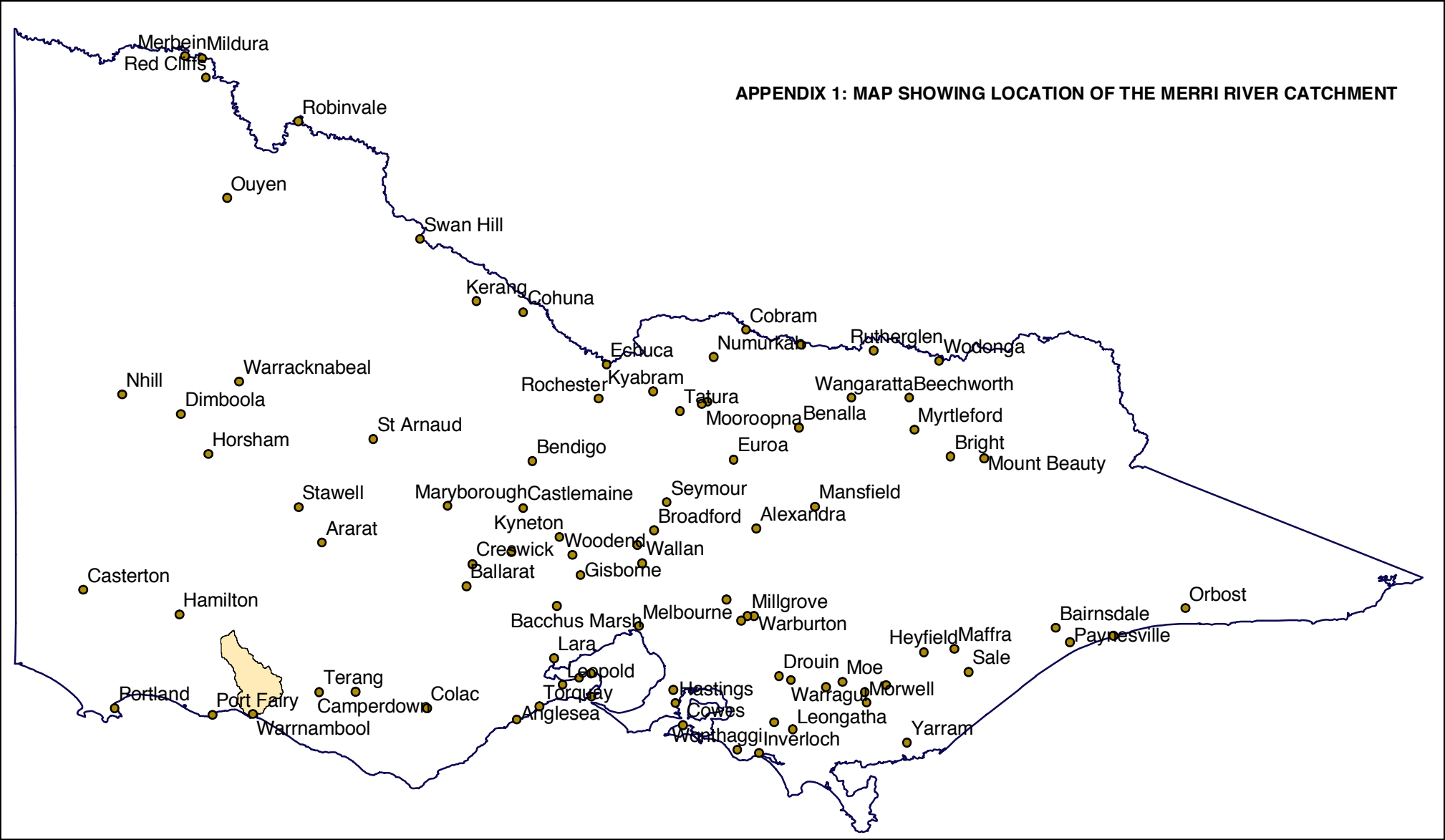
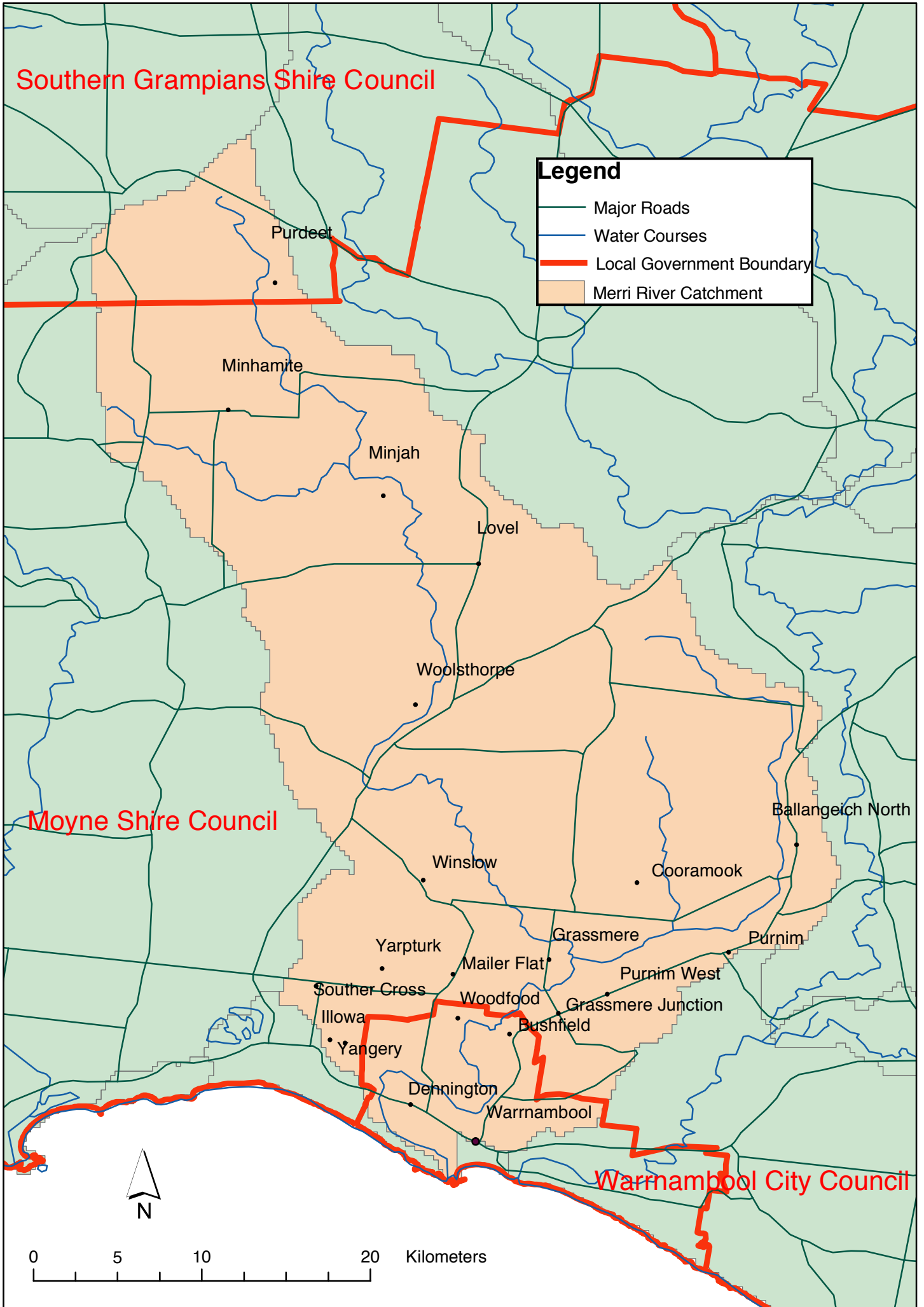


APPENDIX 1: MAP SHOWING LOCATION OF THE MERRI RIVER CATCHMENT



APPENDIX 2: MAP OF THE MERRI RIVER CATCHMENT

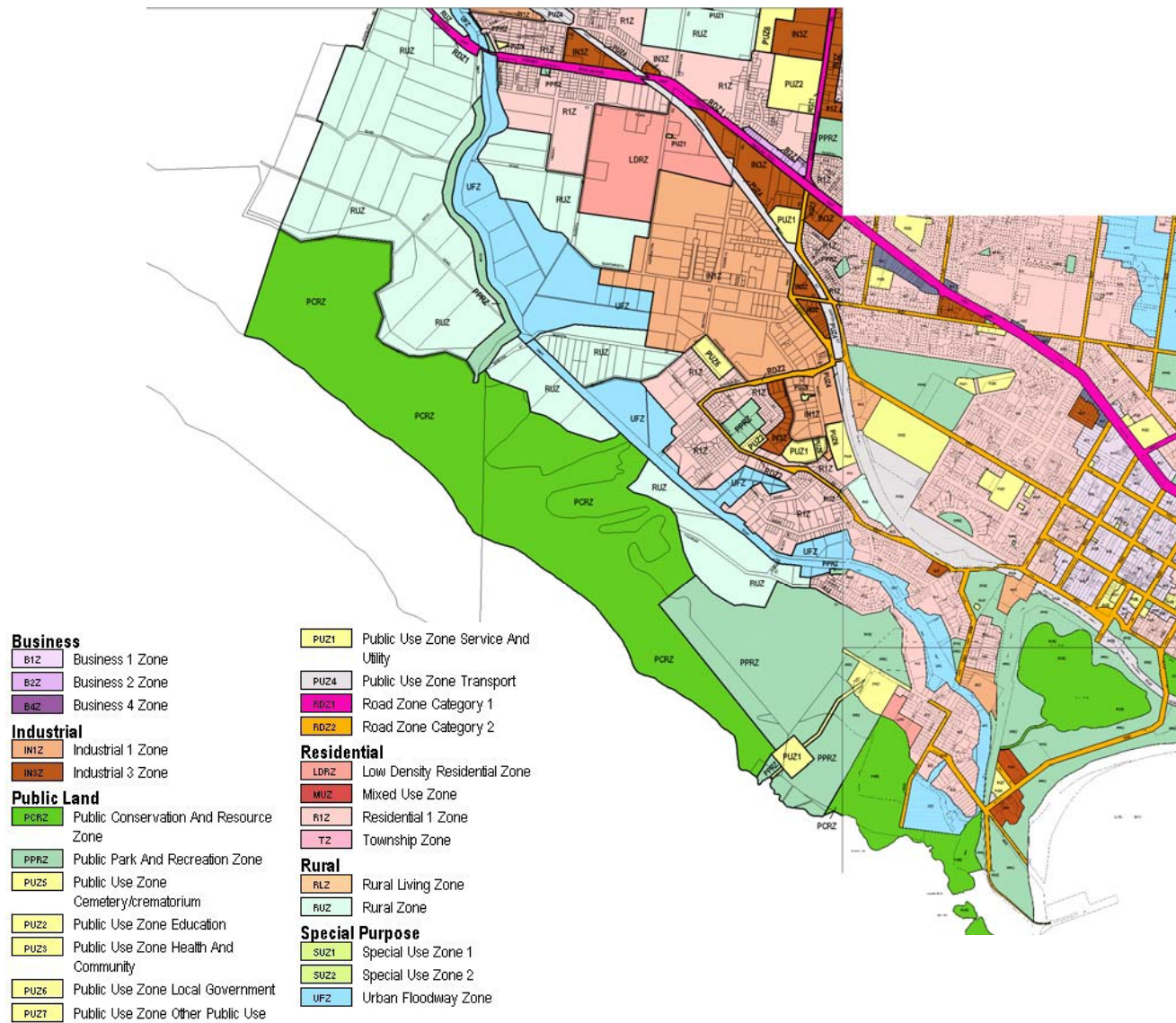


APPENDIX 3: AERIAL PHOTO OF THE MERRI ESTUARY



Aerial photography copyright Qasco Vic Image © 2003

APPENDIX 4: MAP SHOWING PLANNING ZONES SURROUNDING THE LOWER SECTIONS OF THE MERRI RIVER



APPENDIX 5: MERRI RIVER VICTORIAN WATER QUALITY MONITORING NETWORK DATA

Date	Nitrates and Nitrites											
	DO (mg/L)	DO (%sat)	EC (uS/cm)	Nitrites (mg/L)	TKN (mg/L)	TN (mg/L)	TP (mg/L)	pH	SS (mg/L)	TDS (mg/L)	TOC (mg/L)	Turbidity (NTU)
11/12/75	8.6	87.5	1400					7.5				
2/4/76			2200					7.5				
12/16/76	7.6	80.8	2200					7.6				
2/22/77	6	63.9	2500					7.4				0.5
3/23/77	10	100	2500					7.7				0.3
4/21/77	7.5	75.1	2800					7.9				3
5/17/77	9.5	87.1	2700					7.1				1
6/22/77	9.6	85.4	1400					7.9				18
7/19/77	9	76.4	1500					8				14
8/23/77	9.1	82	1600					7.8				27
9/20/77	9.4	92.1	2600					8.2				6
10/19/77	9	89.2	2400					8.1				4
11/21/77	11	114.7	2400	0.27	0.23	0.5		8.3	2			0.9
12/29/77	8	85.6	2700					8.2				1.5
2/1/78	9.5	100.1	3000					7.9				1.1
3/6/78	8.6	89.7	2400					8.3	1			1
4/4/78	9	89.9	2300					7.9				1.2
3/6/78				0.47	0.41	0.88	0.045			1420		
5/3/78	7.3	71.6	2900					7.9				1
6/6/78	8.6	80.4	2000	0.56	0.4	0.96	0.049	7.8	5	2300		1.4
7/4/78	10.2	91.2	2400									1.6
8/1/78	9.8	85.1	1200					6.7				17
9/11/78	9.1	89.2	1900	0.082	0.8	0.882	0.004	7.8	10	1100	10	2.1
10/17/78	10	102	2200					8.1				1.9
11/7/78	8.4	89.3	2000					7.8				5.4
12/12/78	8.6	91.4	2100									1.3
1/9/79	8.6	95.3	2400									0.8
2/13/79	8.3	92	2400	0.29	0.45	0.74	0.032	7.9	1	1600	12	1
3/20/79	7.9	84.1	2500					8.1				0.7
4/19/79	8.6	85.9	2800					7.7				1
5/7/79	9.4	90.1	2700	1.1	0.55	1.65	0.039	7.9	2	1700	13	0.5
7/10/79	9.8	89.3	3400					8				0.4
8/6/79	11.4	98.5	91					6.8				4
8/7/79	10.5	94.1	2900	0.62	0.3	0.92	0.012	8.1	3	1700	3	1.2
9/11/79	9.9	100.5	3000					8.6				1.2
10/10/79	8.8	85.3	660					7.3				35
11/5/79	7.8	82.9	2100	0.89	0.75	1.64	0.097		7	1600	8	1
12/4/79	7.4	80.4	2600					7.9				0.7
1/8/80	8.6	92.6	2400					8				0.5
2/4/80	8.2	86.2	2500	0.2	0.3	0.5	0.037	8	3	1670	4	0.8
3/4/80	5.6	58.8	2400					7.8				1.3
4/10/80	7.5	74.1	2300					7.5				1.3
5/6/80	8	78.2	2700	0.69	0.45	1.14	0.058		2	2000	4	0.4
6/3/80	8.8	81.5	3100					7.7				1.8
7/8/80	8.9	80.1	1900					7.9				16
8/4/80	10.7	95.7	2500	0.38	0.9	1.28	0.062	8.4	6	1500	9	
9/10/80	10.1	82.8	2300					8.3				
10/7/80			2200					8.1				
11/3/80	10	97.7	2500	0.6	0.55	1.15	0.058	8.2	4	1500	11	1.3
12/2/80			2600					7.8				0.5

Date	Nitrates and Nitrites											
	DO (mg/L)	DO (%sat)	EC (uS/cm)	Nitrites (mg/L)	TKN (mg/L)	TN (mg/L)	TP (mg/L)	pH	SS (mg/L)	TDS (mg/L)	TOC (mg/L)	Turbidity (NTU)
1/6/81	6.1	67.3	2400					8.1				1.1
2/9/81			2600	0.44	0.5	0.94	0.07	7.9	1	1600	4	0.5
3/17/81	8.4	86.1	2700					7.8				0.8
4/7/81	5.4	56.4	2700					7.5				0.5
5/11/81	7.9	74.7	3100	0.66	0.35	1.01	0.044	8.4	1	1700	5	0.6
6/10/81	9.6	85.4	3700					8.1				0.7
7/7/81	9.7	85.4	3900					8				1.8
8/12/81	9.4	84.5	1100	1	2	3	0.153		86	720	16	
9/8/81			1800									
10/15/81			2600									1.3
11/11/81			2600	0.48	0.4	0.88	0.052		2	1700	5	0.5
12/8/81			2300					8.2				1.1
1/5/82			3100									0.5
2/8/82			2300									0.6
2/15/82				0.28	0.5	0.78			2	1600	4	
3/17/82	5	53.8	2400									0.8
4/6/82	8	80	2500									1.5
5/10/82	7.6	71.2	2600	0.54	0.6	1.14	0.041		2	1800	2	0.5
6/10/82	10.1	85.7	3200									0.3
7/6/82	10.6	91.7	3300									0.5
8/9/82	9.8	85.8	3300	0.5	0.35	0.85	0.03		7	2300	3	0.6
9/8/82	9.9	90.8	2900					7.8				0.7
10/6/82	8.9	85.8	3100					7.8				0.6
11/15/82	8.4	86.1	2700	0.35	0.3	0.65	0.064	7.2	3	1700	2	0.5
12/7/82	7.6	76.2	2500					7.5				0.5
1/12/83	6.4	64.7	2400									0.8
2/3/83	6.7	72.9	2300					7.9				1.5
3/7/83	3.9	43.8	2100	0.18	0.4	0.58	0.123	7.8	2	1700	2	0.5
5/10/83	7.4	72.3	2200					7.2				1.5
6/8/83	9.2	81.7	2300	0.9	1.2	2.1	0.063	7.4	14	1400	16	5.6
7/4/83	9.4	83.7	540					7.6				40
8/2/83	10.5	95.8	1700					8				13
9/14/83	10.3	88.4	280					7.3				71
9/20/83	8.6	81.8	800	0.39	1.4	1.79	0.102	7.7	22	520	19	25
10/6/83	8.5	82.2	1700	0.59	0.7	1.29	0.021	7.9				7.1
11/7/83	8.4	83	2200					7.9				11
12/6/83	6.4	66.1	1700					7.7	4	1200	9	2
1/10/84	7.6	82.5	2400					7.9				2
2/7/84	6.4	69.5	2300					7.8				1.9
3/6/84	8.5	91.8	2400	0.64	0.35	0.99	0.074	7.8	4	1800	3	1
4/4/84	8	79	3500					7.8				1.3
5/7/84	9.3	86.2	3200					7.8				0.6
6/5/84	9	83.6	3200					8.4				1.2
7/2/84	9.7	86.1	3100	0.49	0.3	0.79	0.027	7.9	3	2200	3	1.1
8/7/84	9	83.6	2600					7.9				1.5
9/12/84	9	80.4	1300	0.32	1.8	2.12	0.134	7.6	24	840	20	24
10/3/84	8.1	77.6	1200					7.6				9
11/8/84	8.4	87.5	2300					7.8				1.7
12/3/84	9.5	99.1	2400					8				0.7
12/17/84	8.1	85.3	2400	0.39	0.4	0.79	0.027	7.8	3	1500	4	1
1/7/85	7.8	80.5	2500	0.33	0.35	0.68	0.03	7.8	2	1300	4	0.5
2/5/85	6.9	74.3	2400					6.9				1.1

Date	Nitrates and Nitrites											
	DO (mg/L)	DO (%sat)	EC (uS/cm)	Nitrites (mg/L)	TKN (mg/L)	TN (mg/L)	TP (mg/L)	pH	SS (mg/L)	TDS (mg/L)	TOC (mg/L)	Turbidity (NTU)
3/4/85	8	82.6	2400	0.34	0.4	0.74	0.036	8.2	1	1600	2	0.7
4/2/85	7.4	72.3	2100									3.7
5/6/85	8.5	82.5	3000									0.9
6/3/85	9	79.8	3100	0.52	0.3	0.82	0.033		1	1700	26	1.4
7/1/85	9.2	84.9	2100									7.1
8/5/85	9.4	82.7	1500									12
9/3/85	9.5	82.7	1100	0.115	2.4	2.515	0.137		59	550	6	36
10/7/85	9.7	98	2400					7.8				1.5
11/4/85	9.6	98.7	2500					8.1				1
12/2/85	9.2	98	2200	0.38	0.5	0.88	0.052	8.8	2	1200	3	1.2
1/7/86	8.6	95	2100					7.8				1.4
2/3/86	9.2	99.7	2400					7.8				0.7
3/3/86	9.2	98.3	2400	0.29	0.25	0.54	0.033	7.9	1	1400	7	0.9
4/9/86	7.6	75.2	2500					7.6				0.8
5/13/86	9.7	95.2	3100					8				1.2
6/2/86	10	94.5	2900	0.53	0.15	0.68	0.049		2	2000	18	1.5
7/8/86	10.5	90.1	1200					7.8				15
8/5/86	10.1	91.4	1400					7.8				14
9/1/86	9.2	83.8	1400	0.33	0.7	1.03	0.106	7.2	25	890	5	22
10/1/86	8.7	89.5	1600					7.6				0.6
11/4/86			1400					7.8				5.6
12/2/86			2300	0.4	0.45	0.85	0.019	7.9	2	1500	4	0.7
1/6/87	7.7	78.1	2200									3.2
2/3/87	9.8	103.2	2400					7.7				0.7
3/2/87	11.4	118.4	2400	0.29	0.15	0.44	0.021	8.3	1	1500	11	0.7
4/8/87	7.2	75.2	2900									0.8
5/5/87	9.4	91.2	2900									0.7
6/2/87				0.7	0.8	1.5	0.101		2	1300	12	
7/6/87	10	89	2400					7.9				2.7
8/3/87	11.1	97	2500					8				2.9
9/7/87	10	91.4	2100	0.23	0.95	1.18	0.046	7.9	4	1300	4	7.9
10/6/87	8.7	83.4	2700					8.1				3
11/3/87	7.5	83.2	2700					8.1				1.2
12/2/87	8.7	89.7	2300	0.16	0.6	0.76	0.041	7.8	1	1300	2	1.7
1/5/88	6.4	68.9	2800					7.8				1.1
2/2/88	7.2	79.8	2500					7.8				1
3/2/88	4.4	46.8	2400	0.28	0.3	0.58	0.12	7.6	5	1900	2	1.2
4/13/88	7	67.7	2400					8.2				3.5
5/3/88	5.6	55.6	2600					7.9				1
6/7/88	8.6	79.9	3100	0.63	0.3	0.93	0.05	8.1	1			1
7/5/88	10.7	93.9	3300					8.1				1.7
8/2/88	9.8	92.3	3600					7.9				2.2
9/14/88	10.5	94.4	1000	0.16	2.1	2.26	0.16	7.7	44	680	5	53
10/4/88	7.8	77.9	2200					8.2				7.2
11/2/88	9.7	107.6	2700					7.9				1.5
12/6/88	8.4	89.5	2600	0.15	0.6	0.75	0.031	8	3	1900	2	1
1/4/89	8	86.9	2500					8.3				2.7
2/8/89	8.5	94.1	2300					7.9				2.1
3/2/89	8.9	101.5	2400	0.062	0.3	0.362	0.052	7.9	3	1900	4	1.5
4/4/89	8	85.2	2500					7.9				1.1
5/16/89	9.6	89.2	3100					7.9				1.1
6/7/89	10.6	92	3400	0.43	0.4	0.83	0.034	8	1	2500	19	1.7

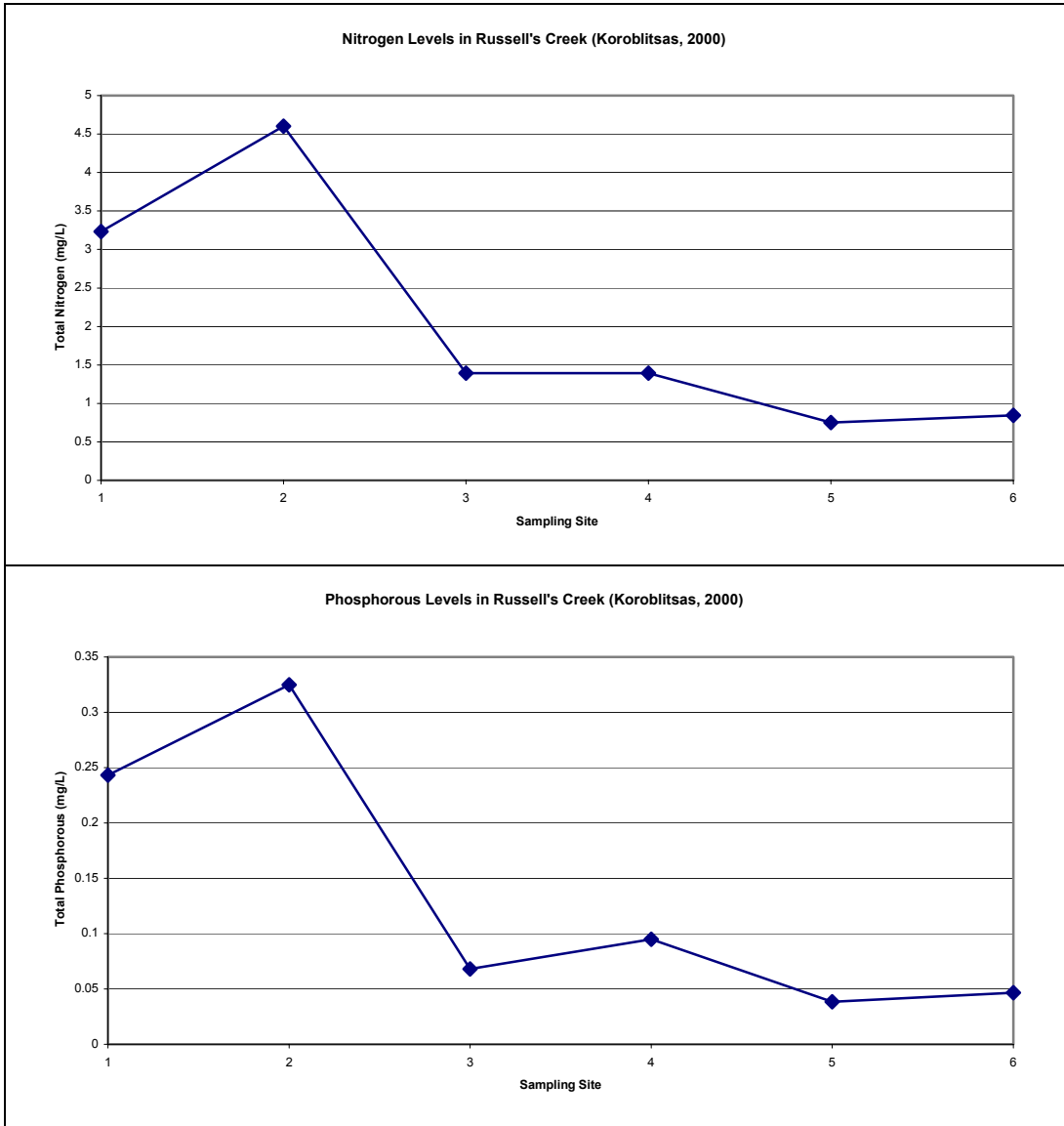
Date	Nitrates and											
	DO (mg/L)	DO (%sat)	EC (uS/cm)	Nitrites (mg/L)	TKN (mg/L)	TN (mg/L)	TP (mg/L)	pH	SS (mg/L)	TDS (mg/L)	TOC (mg/L)	Turbidity (NTU)
7/11/89	11.1	93.9	3000					8.1				2.7
8/9/89	10.6	88.6	840					7.6				67
9/5/89	8.9	80.9	910	0.4	1.7	2.1	0.062	7.7	16	600	5	25
10/3/89	9.2	85.9	1900					7.7				8
11/8/89	7.8	78.7	1900					7.9				4.7
12/5/89	9.4	98	2300	0.31	0.6	0.91	0.036	8	2	1500	3	1.8
1/3/90	9.4	100	2400					7.9				1.4
2/6/90	7.4	71.6	2500					7.9				1.3
3/6/90	7.7	82	2600	0.44	0.6	1.04	0.089	8	4	2100		2.4
4/4/90	10.4	104.1	2700					8				1.3
5/9/90	10.6	96.2	3000					7.6				1.2
6/5/90	10.4	93.3	3100	0.43	0.4	0.83	0.028	8.1	2	2000		1.3
7/3/90	10.1	85.5	3200					8.3				3.4
P10	7.2	71.67	1400	0.16	0.3	0.58	0.026	7.5	1	816	2	0.5
P25	7.975	80.33	2200	0.29	0.35	0.755	0.033	7.8	2	1300	3	0.8
P50	8.9	85.65	2400	0.4	0.45	0.882	0.049	7.9	3	1600	5	1.3
P75	9.7	92	2700	0.55	0.7	1.165	0.07	8	5	1800	11	2.925
P90	10.4	98.27	3100	0.69	1.4	2.1	0.121	8.2	22	2020	17.2	14
MAX	11.4	118.4	3900	1.1	2.4	3	0.16	8.8	86	2500	26	71
MIN	3.9	43.8	91	0.062	0.15	0.362	0.004	6.7	1	520	2	0.3

APPENDIX 6: EPA WATER QUALITY MONITORING DATA

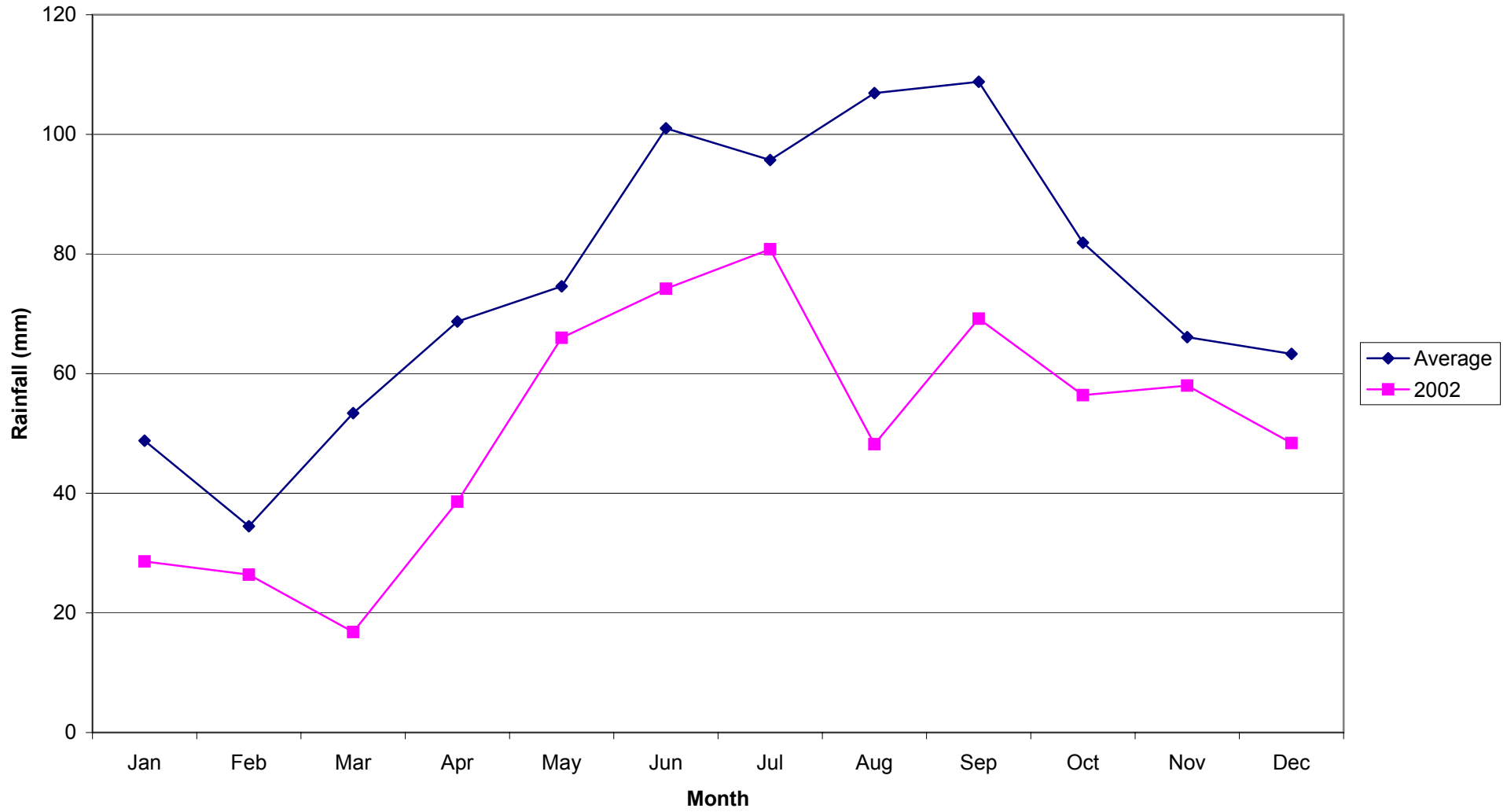
Date	DO (%sat)	DO (%sat)	pH	pH	TKN (mg/L)	TKN (mg/L)	TP (mg/L)	TP (mg/L)
	Warrnambool	Woodford	Warrnambool	Woodford	Warrnambool	Woodford	Warrnambool	Woodford
22/09/1999			8.6	8.0	2.0		0.2	
			7.8		4.1		0.7	
27/11/2000	76.2	98.1	7.94	8.3	1.6	1.6	0.056	0.073
	72.2		7.92		2		0.12	
30/03/2000	86.4	21.3	8.09	7.66	0.91	0.64	0.066	0.17
	35.4		7.94		2.1		0.23	
19/03/2001	103.9	71.2	8.31	7.9	1.2	0.59	0.11	0.089
	102.4		8.31		1.4		0.16	
15/10/2001	108.5	82.5	8.11	7.86	1.3	1.4	0.13	0.1
	107.5		7.95		1.4		0.14	
average	86.5625	68.275	8.07125	7.93	1.48875	1.0575	0.1265	0.108
maximum	108.5	98.1	8.31	8.3	2.1	1.6	0.23	0.17
minimum	35.4	21.3	7.92	7.66	0.91	0.59	0.056	0.073

APPENDIX 7 LONGITUDINAL PROFILE OF NUTRIENT LEVELS IN RUSSELL'S CREEK (KOROBLITSAS, 2000)

NB. Sampling Site 1 is the furthest upstream and site 6 is the furthest downstream



APPENDIX 8: AVERAGE MONTHLY RAINFALL AT WARRNMABOOL AIRPORT



APPENDIX 9: SUMMARY OF MERRI RIVER IRRIGATION ROSTER

		Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9
Increase	Daily Average	12ML – one stage; 10ML go to stage 7; 8ML – immediate BAN						10ML – one stage; 8ML – BAN		
	5-Day Average	12ML – go to stage 7 immediately; 10ML – immediate BAN						12ML – one stage, 10ML - BAN		
Ease	Daily Average	14ML – one stage						12ML – one stage		