





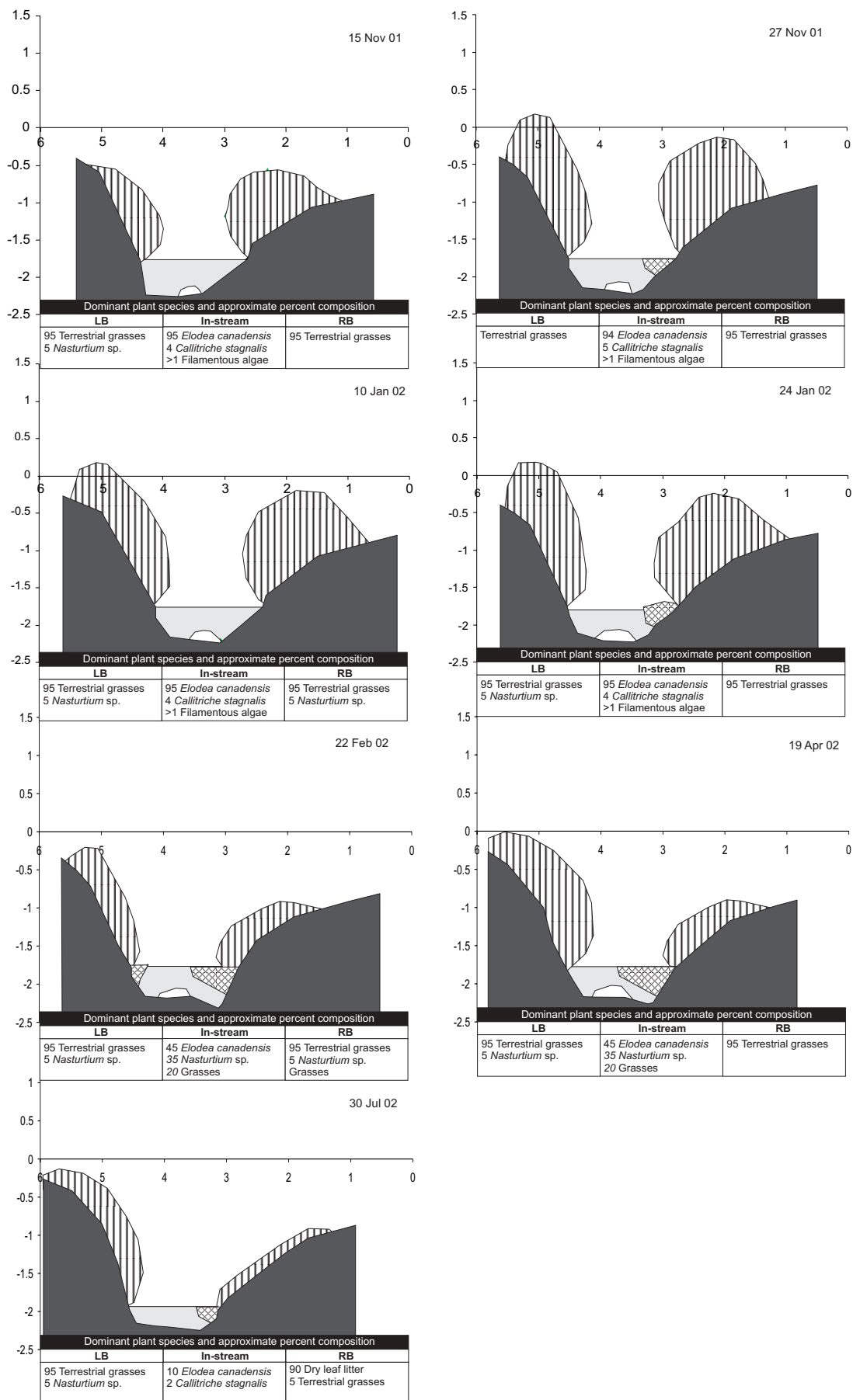


Appendix 1

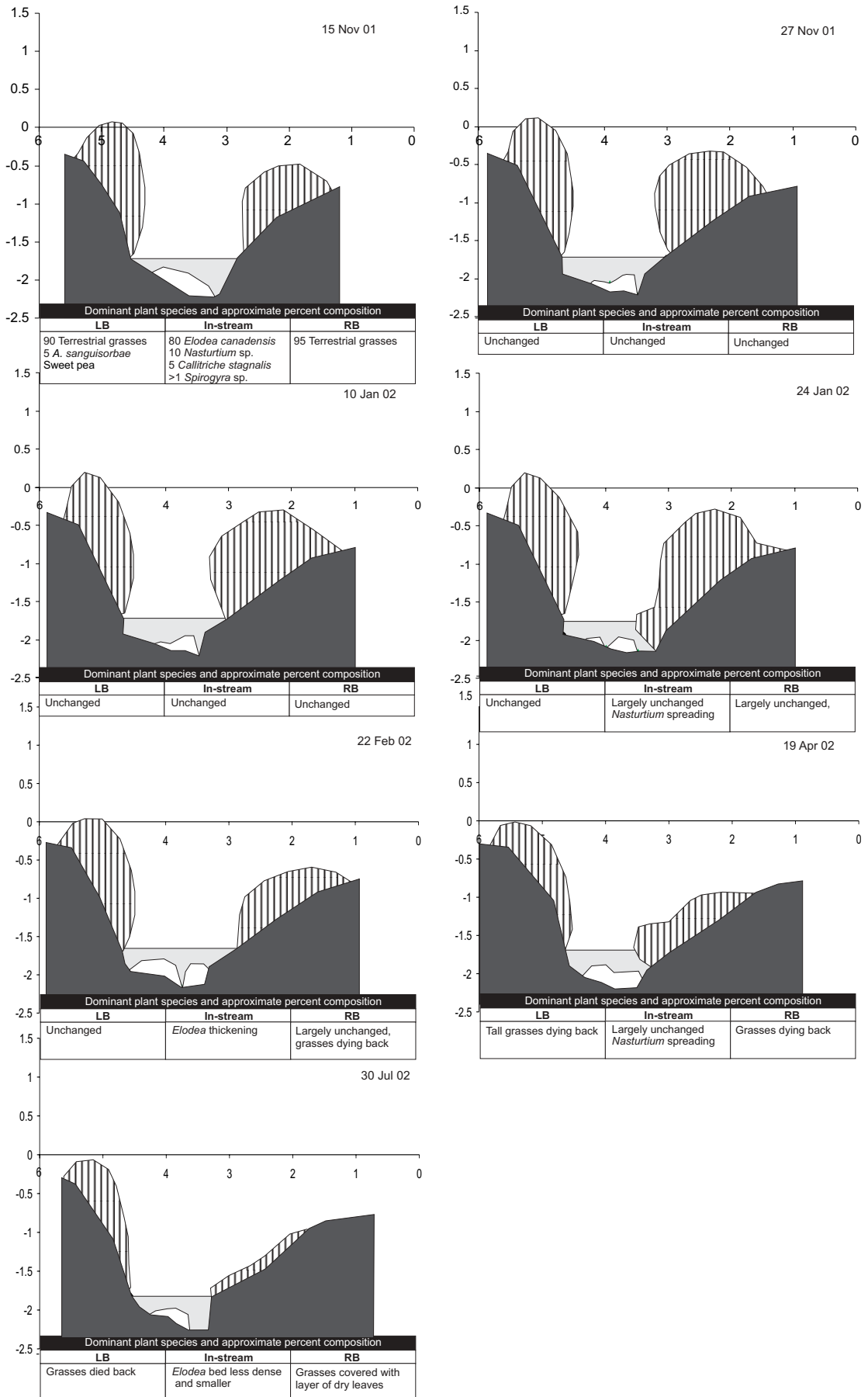
CROSS SECTION AND COVER CLASS PLOTS AT
EACH SITE ON EACH SAMPLING OCCASION

Key	
	Water
	Riparian vegetation
	Emergent/semi-aquatic vegetation
	Aquatic macrophytes
	Regenerating stands of macrophytes
	Floating macrophytes (<i>Azolla</i> & <i>Lemna</i>)

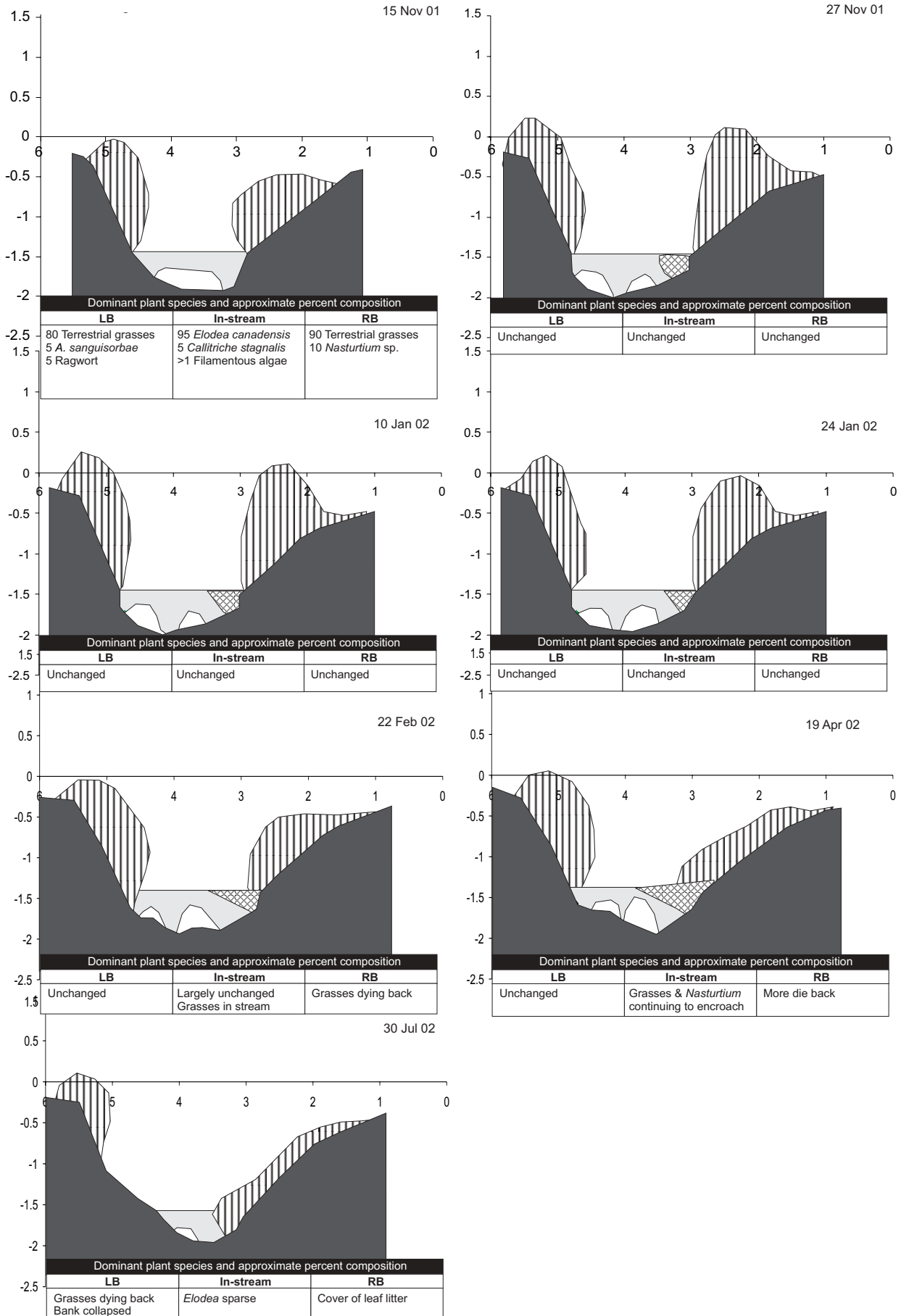
Appendix 1.1—Murrays Drain 12.5 m



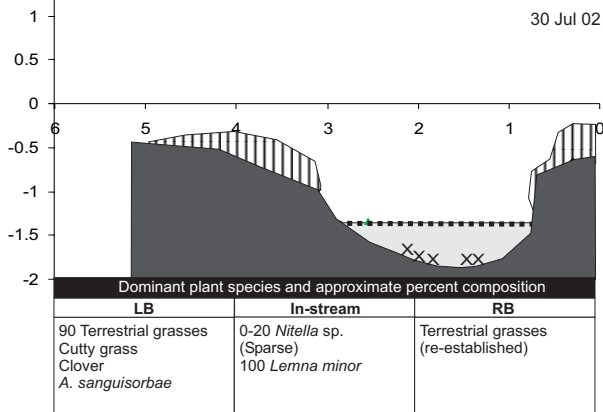
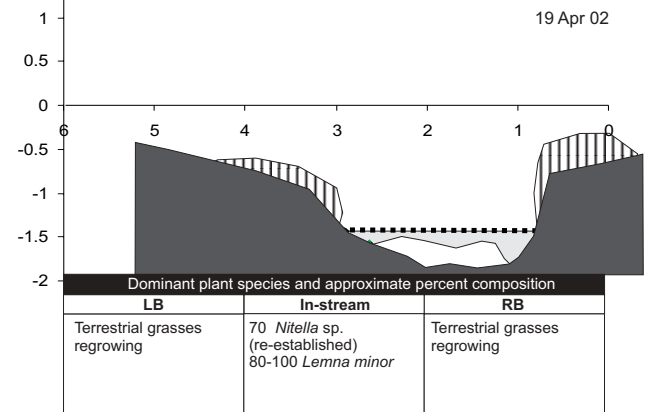
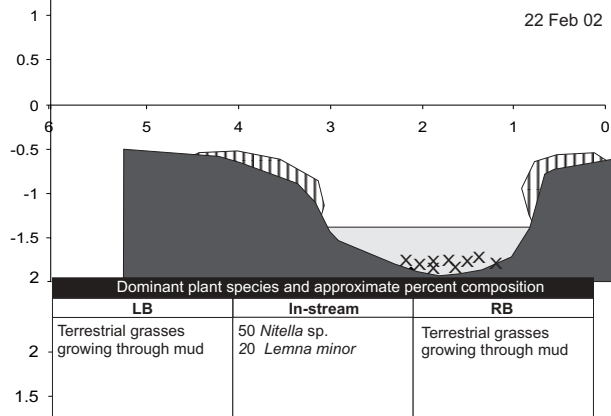
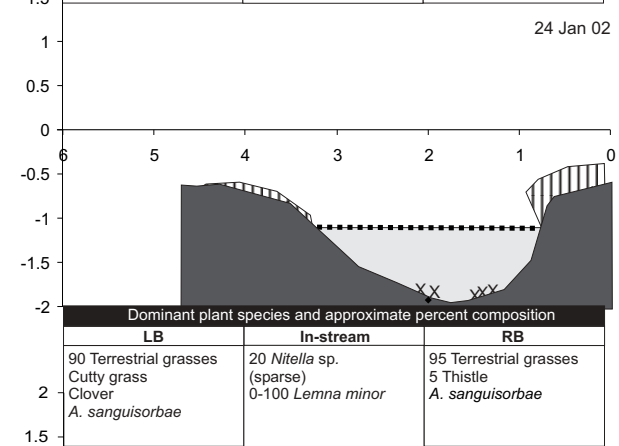
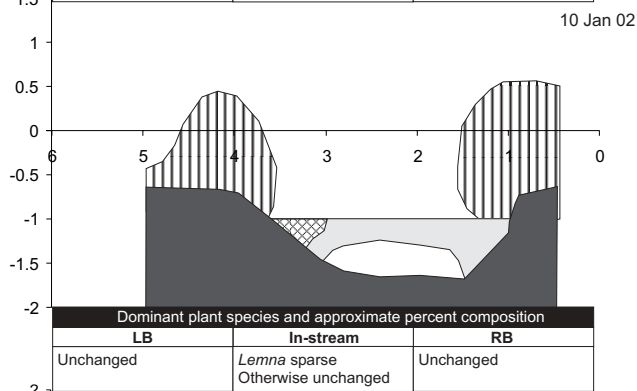
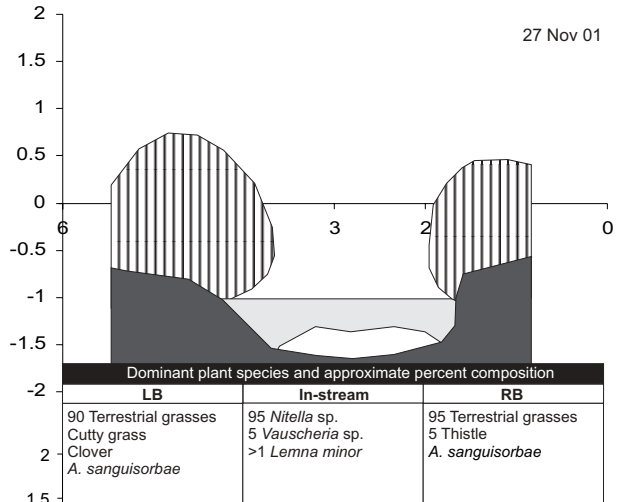
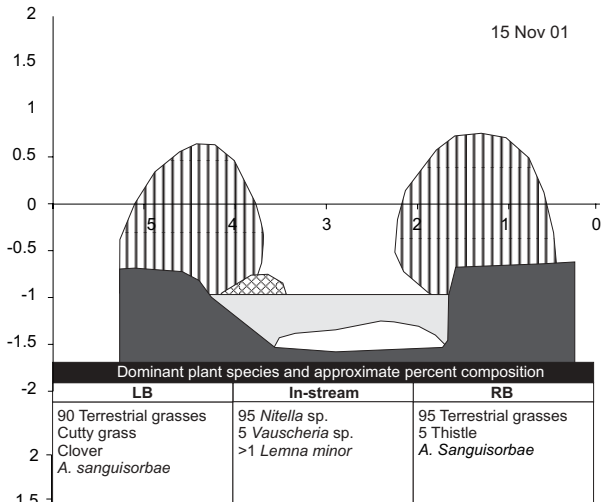
Appendix 1.2—Murrays Drain 25 m



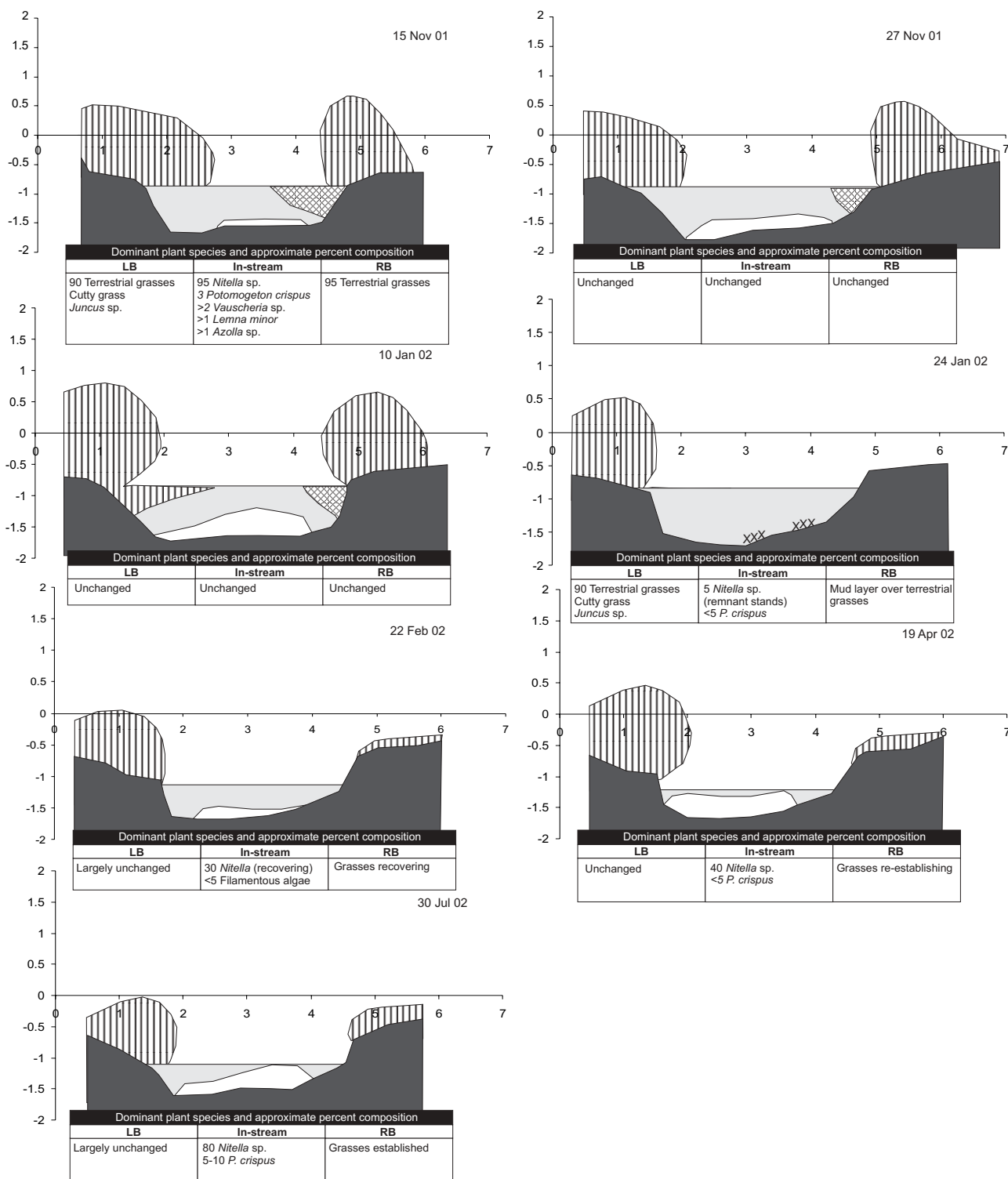
Appendix 1.3—Murrays Drain 37.5 m



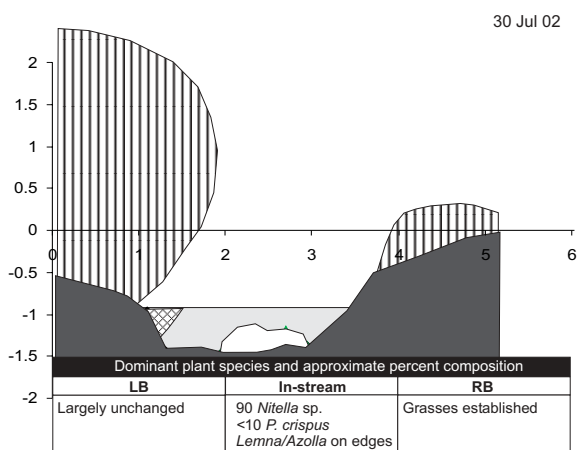
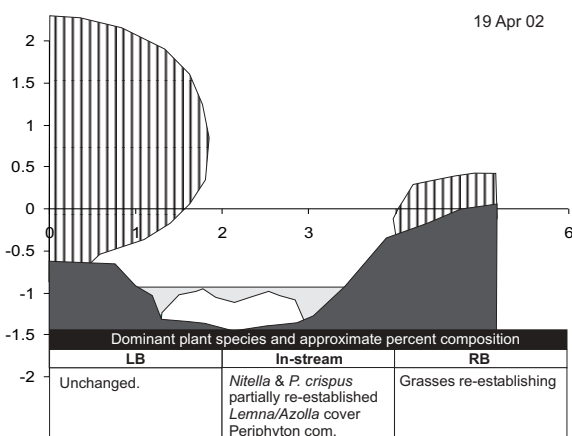
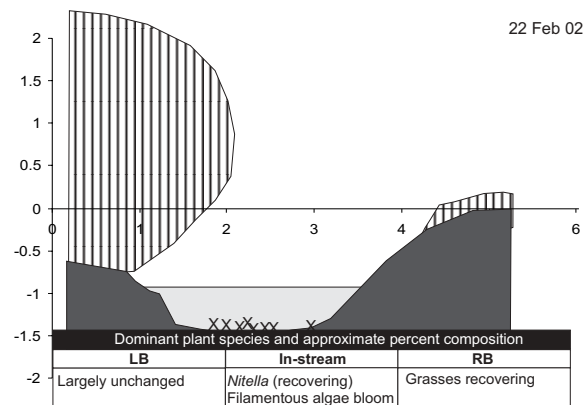
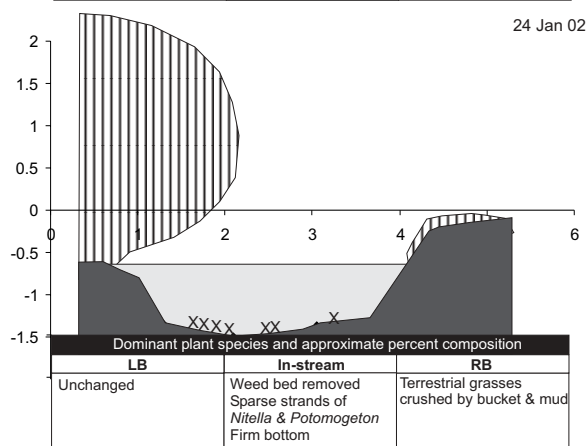
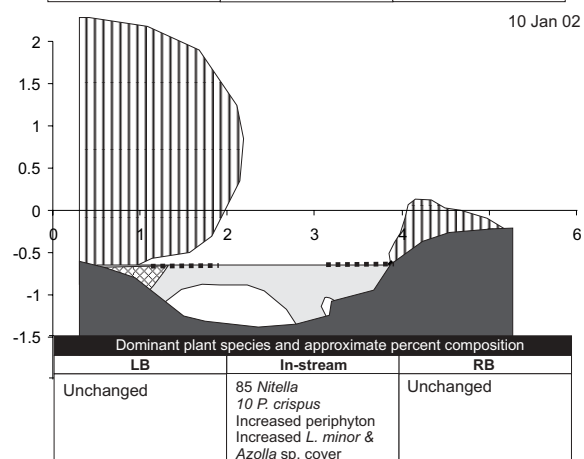
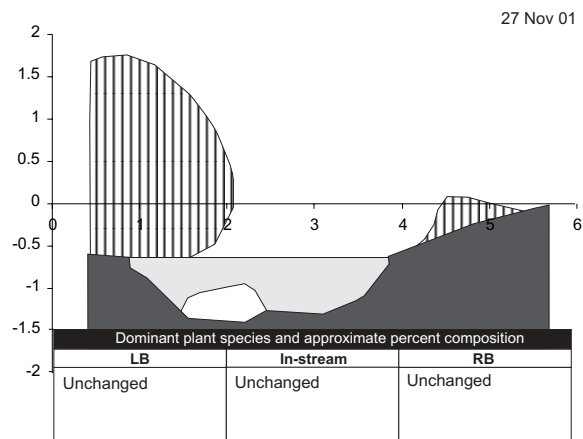
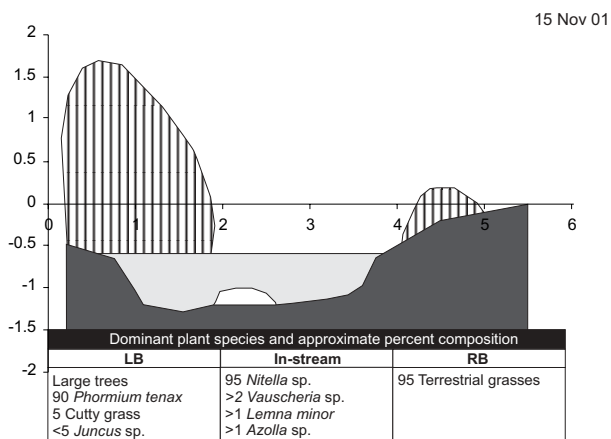
Appendix 1.4—Foots Drain 25 m



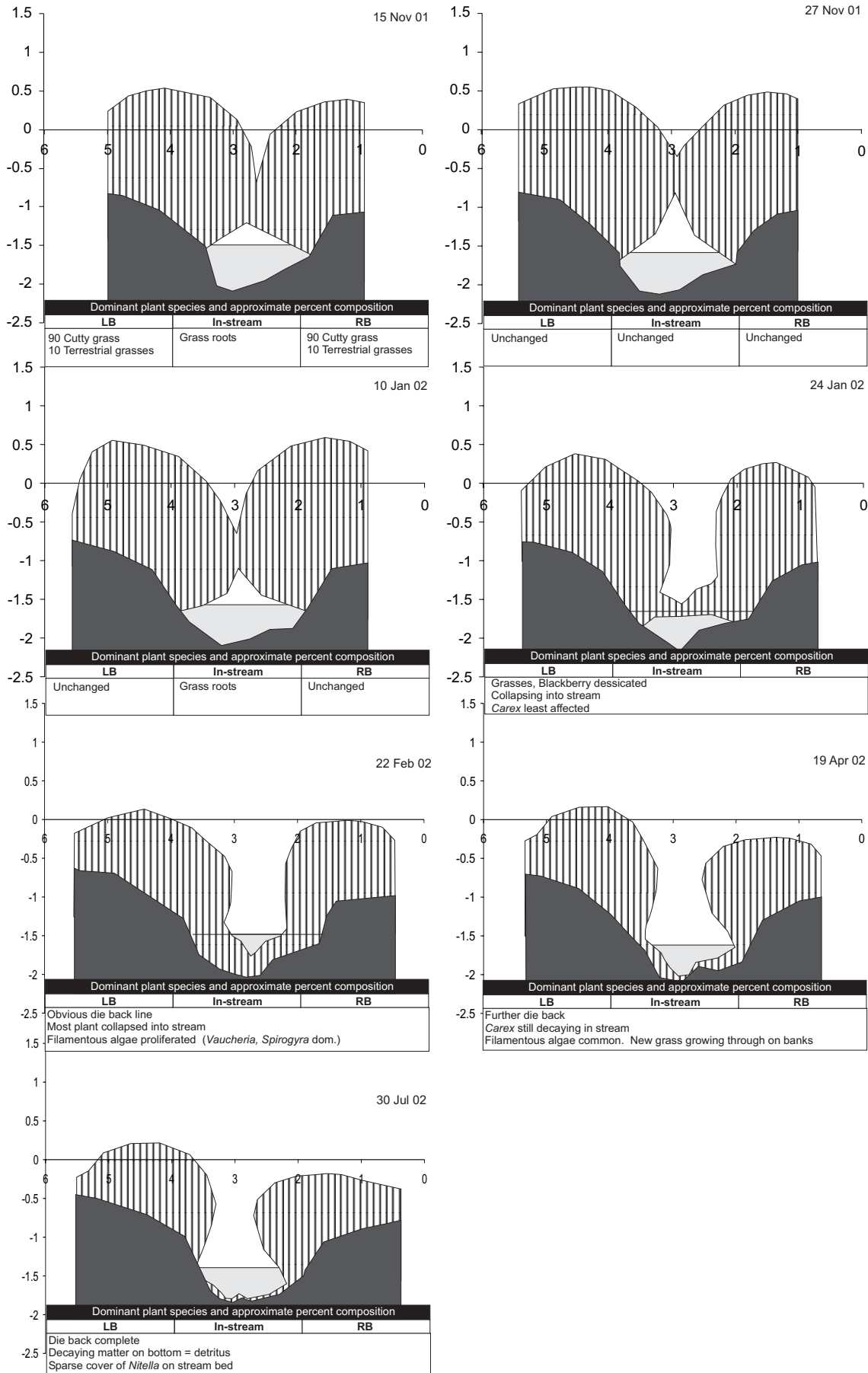
Appendix 1.5—Foots Drain 50 m



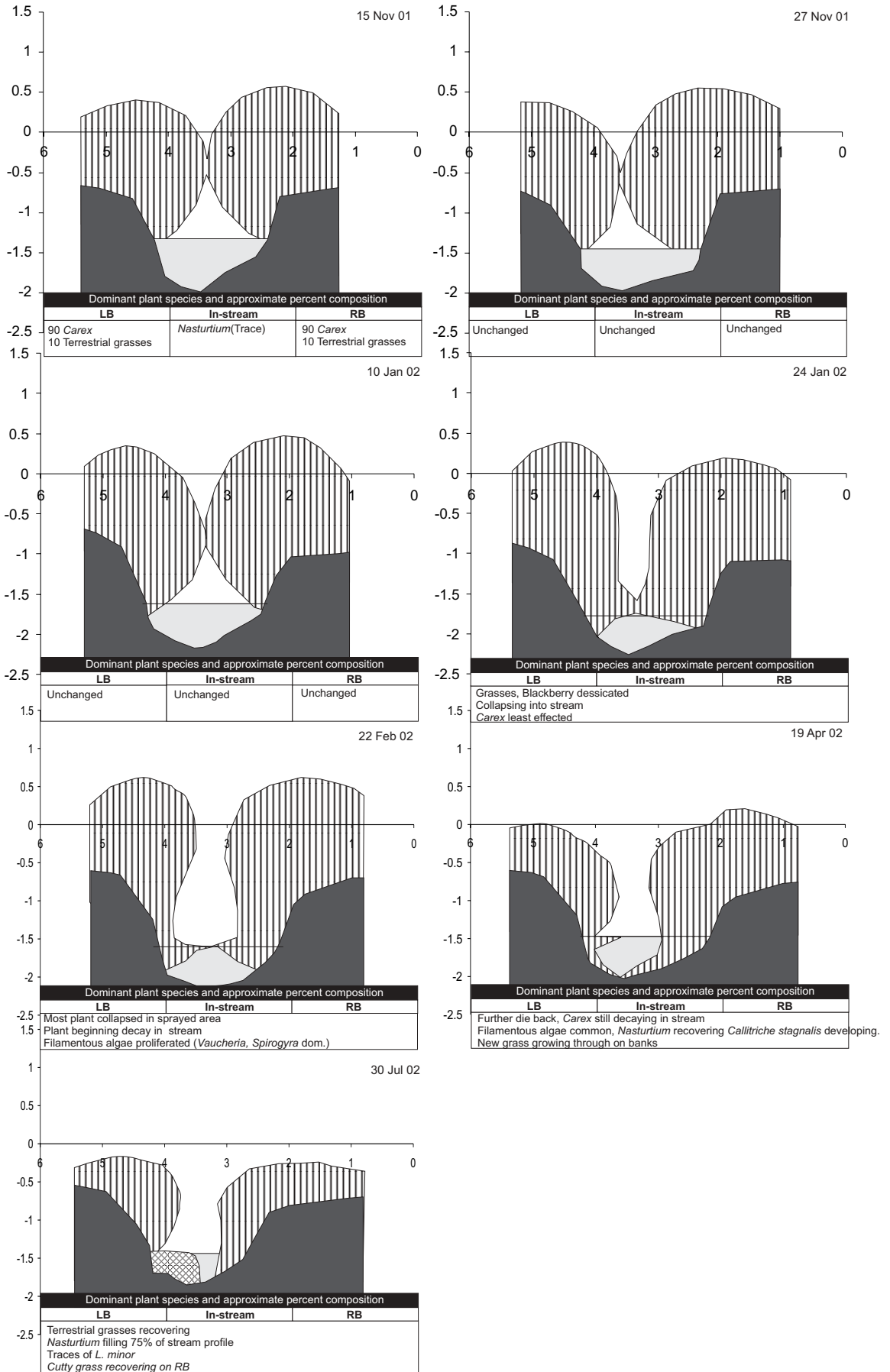
Appendix 1.6—Foots Drain 75 m



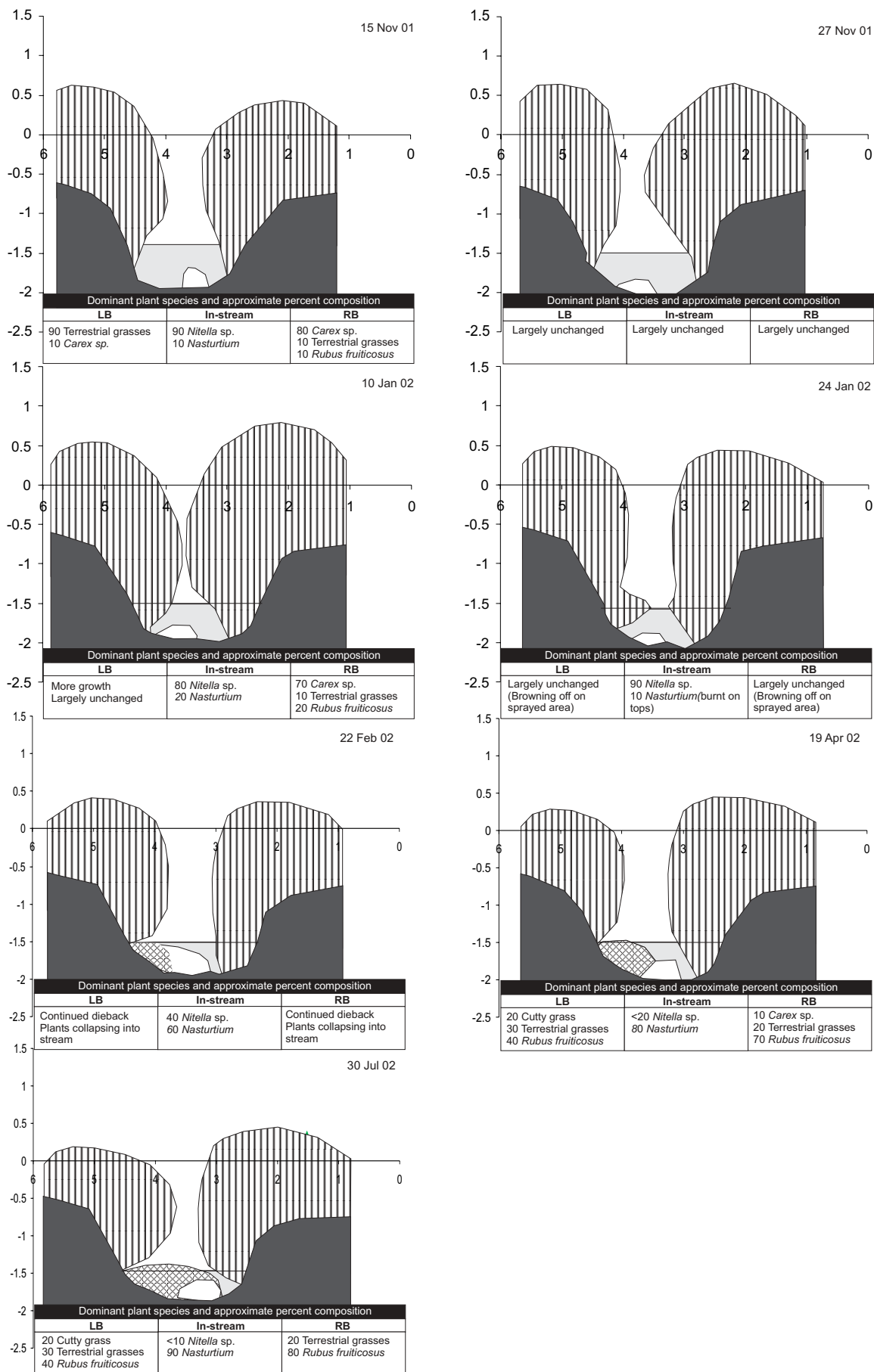
Appendix 1.7—Pa Drain 25 m



Appendix 1.8—Pa Drain 50 m



Appendix 1.9—Pa Drain 75 m



Appendix 2

AVERAGE DENSITY OF MACROINVERTEBRATES
IN CORE SAMPLES FROM EACH DRAIN ON
EACH SAMPLING OCCASION

<i>Cbironomus</i> sp. A	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.7	57.3	26.3	11.0
<i>Cbironomus</i>																					
<i>zealandicus</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	11.0	2.7	90.3	43.3	5.7
<i>Corynoneura</i> sp.	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.3	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0
<i>Culex</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Empididae	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ephydriidae pupae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Maoridiamesa</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Neolimnia</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Orthocladiinae	6.0	10.7	1.7	4.0	2.3	3.0	2.7	3.3	1.7	3.3	5.3	5.0	5.0	0.0	2.0	1.3	107	0.3	0.3	15.0	0.0
<i>Paralimmophila</i>																					
<i>skusei</i>	0.7	2.3	0.7	0.3	0.0	2.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polyptilum</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.7	0.0	0.0	0.0	0.0	1.3
Stratiomyidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Tanypodinae	0.0	0.0	2.3	1.0	6.3	4.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	2.7	2.7	0.7
<i>Tanytarsus</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	71.7	3.0	0.0	3.7	0.0
Caddisflies																					
<i>Costachorema</i> sp.	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Hudsonema amabile</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Hydrobiosis copis</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Hydrobiosis</i>																					
<i>parumbripennis</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Hydrobiosis</i> sp.	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hydroptilidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Leptoceridae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Oxyethira albiceps</i>	2.7	10.0	0.0	0.3	3.0	3.3	0.3	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.3	3.3	33.0	10.7	7.0	3.0	2.0
<i>Paroxyethira</i>																					
<i>bendersoni</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	4.3	2.0	3.7	0.3
<i>Polyplectropus</i>																					
<i>puerilis</i>	0.0	1.0	0.3	2.0	5.3	7.3	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Psilochorema bidens</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Psilochorema</i>																					
<i>macrobarpax</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Psilochorema</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Psilochorema tautoru</i>	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pycnocentroides</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Triplectides cephalotes</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.0
<i>Triplectides obsoleta</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Triplectides</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SAMPLING PERIOD	MURRAYS DRAIN							PA DRAIN							FOOTS DRAIN						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Flatworms	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.7	0.0	2.0
Roundworms	0.0	2.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.3	0.0
Worms	169	192	251	118	260	268	11.3	108	50.7	35.0	34.0	175	132	282	350	185	217	72.3	332	379	228
Peanut worms	0.0	0.0	0.0	0.0	0.3	4.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Snails/Bivalves																					
<i>Ferrissia</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
<i>Gyraulus</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.3	0.0	60.3	33.7	41.7	32.3	78.0
<i>Hyridella</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Physa</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.3	5.3
<i>Potamopyrgus antipodarum</i>	1.0	5.3	0.3	1.0	9.0	1.0	0.0	15.0	12.0	97.0	8.0	16.7	87.7	17.7	119	0.0	77.7	105	102	134	228
Sphaeriidae	0.0	0.0	0.0	0.0	1.7	1.0	0.3	2.3	0.7	2.7	0.3	0.0	9.7	1.0	12.3	0.0	30.0	7.7	44.7	33.0	29.3
Crustaceans																					
Amphipoda	60.7	27.7	36.3	62.0	194	243	37.0	21.7	3.3	18.7	32.7	80.3	133.	26.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Copepoda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Daphnia carinata</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.7	0.0
Ostracoda	0.0	1.3	10.7	1.3	8.0	0.7	0.0	12.3	1.7	1.0	0.0	0.7	2.7	0.3	11.3	0.0	4.7	1.7	16.7	15.3	0.7
<i>Paranephrops planifrons</i>	3.7	2.0	3.3	0.7	2.0	1.0	0.3	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Paratya curvirostris</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mites	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Springtails	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total taxa	6.7	6.7	6.7	8.3	10.7	13.7	6.7	6.3	4.0	7.0	6.3	7.0	7.3	14.0	6.7	6.3	13.7	10.7	12.0	15.3	14.0
Total individuals	244	254	308	203	499	556	68.3	164	72.7	167	83.3	281	377	602	519	200	630	250	700	715	602
Density (m⁻²)	18099	18840	22790	15037	36938	41161	5062	12173	5383	12346	6173	20815	27926	44568	38444	14840	46642	18519	51877	52963	44568

1. Bold type in columns used to distinguish Pa Drain entries from Murrays Drain and Foots Drain entries.

2. Sampling periods are as follows:
- 1 = 15 Nov 2001
 - 2 = 27 Nov 2001
 - 3 = 10 Jan 2002
 - 4 = 24 Jan 2002
 - 5 = 22 Feb 2002
 - 6 = 19 Apr 2002
 - 7 = 02 Aug 2002