Appendix A:

Infiltration data collected on the floodplain in the Nylsvley Nature Reserve during October and November 2002

The infiltration rates given in Tables 1 to 7 were measured using the Guelph Permeameter and were calculated using the equations given by Soilmoisture Equipment Corp. (1987) – equation 5.1, Murdoch (undated) – equation 5.2 and Blight (1997b) – equations 5.3 and 5.4. All test holes and transects are labelled and shown in Figure 5.7.

Notes:

1. 'Burrow' means that water ran out of the hole very fast due to cracks or burrows in the soil that were visible when the hole was inspected
2. 'Negative' means that the Soilmoisture Equipment Corp. (1987) equation (equation 5.1) returned a negative value for the K_{fs} of the soil
3. Black shaded cells denote tests carried out in areas observed to have sodic soils
4. 'V. Low' denotes infiltration rates too low for the Guelph Permeameter to measure

Table 1: Infiltration rates (mm/hour) measured at Transect 2

Soil Map Unit	Hole Depth	Method	Water Depth	Hole Number			
				1	2	3	4
Alluvium	200mm	Soil Moisture Corp.			0.89	Negative	
		Murdoch	5cm		70.2	3.17	
			10cm		66.6	0.96	
		Blight	5cm		22.6	1.02	
			10cm		13.0	0.19	
Ok7/4	200mm	Soil Moisture Corp.		15.6			
		Murdoch	5cm	102.4			
			10cm	132.7			
		Blight	5cm	32.9			
			10cm	26.1			
Va2/3	200mm	Soil Moisture Corp.					V. Low
		Murdoch	5cm				V. Low
			10cm				V. Low
		Blight	5cm				V. Low
			10cm				V. Low

Table 2: Infiltration rates (mm/hour) measured in areas near Stemmerskop

Soil Map Unit	Hole Depth	Method	Water Depth	Hole Number		
				5	6	7
Ar1/2	200mm	Soil Moisture Corp.				Negative
		Murdoch	5cm			0.2
			10cm			V. Low
		Blight	5cm			0.06
			10cm			V. Low
Ok7/4	200mm	Soil Moisture Corp.			V. Low	
		Murdoch	5cm		V. Low	
			10cm		V. Low	
		Blight	5cm		V. Low	
			10cm		V. Low	
Va2/4	200mm	Soil Moisture Corp.		18.0 Burrow		
		Murdoch	5cm	0.81		
			10cm	46.3 Burrow		
		Blight	5cm	0.25		
			10cm	9.13 Burrow		

Table 3: Infiltration rates (mm/hour) measured at Transect 3

Soil Map Unit	Hole Depth	Method	Water Depth	Hole Number					
				8	9	10	11	12	13
Alluvium	200mm	Soil Moisture Corp.							0.43
		Murdoch	5cm						1.32
			10cm						21.89
		Blight	5cm						0.43
			10cm						0.45
C7	200mm	Soil Moisture Corp.			5cm only	Negative			
		Murdoch	5cm		0.30	0.26			
			10cm		No reading	V. Low			
		Blight	5cm		0.10	0.08			
			10cm		No reading	V. Low			
D3	200mm	Soil Moisture Corp.					Negative		
		Murdoch	5cm				0.85		
			10cm				0.72		
		Blight	5cm				0.27		
			10cm				0.14		
Ok7/4	200mm	Soil Moisture Corp.						41.2	
		Murdoch	5cm					103.6	
			10cm					198.5	
		Blight	5cm					33.4	
			10cm					39.1	
Va2/4	200mm	Soil Moisture Corp.		Negative					
		Murdoch	5cm	369					
			10cm	222					
		Blight	5cm	82.2					
			10cm	43.9					

Table 4: Infiltration rates (mm/hour) measured near and at Transect 4

Soil Map Unit	Hole Depth	Method	Water Depth	Hole Number	
				14	15
Alluvium	200mm	Soil Moisture Corp.		0.40	
		Murdoch	5cm	0.39	
			10cm	1.37	
		Blight	5cm	0.13	
			10cm	0.27	
	400mm	Soil Moisture Corp.		0.11	
		Murdoch	5cm	V. Low	
			10cm	0.05	
		Blight	5cm	V. Low	
			10cm	0.04	
	600mm	Soil Moisture Corp.		V. Low	
		Murdoch	5cm	V. Low	
			10cm	V. Low	
		Blight	5cm	V. Low	
			10cm	V. Low	
C4	200mm	Soil Moisture Corp.			Negative
		Murdoch	5cm		3.36
			10cm		1.37
		Blight	5cm		1.08
			10cm		0.27

Table 5: Infiltration rates (mm/hour) measured at Transect 5

Soil Map Unit	Hole Depth	Method	Water Depth	Hole Number		
				16	17	18
Alluvium	200mm	Soil Moisture Corp.			0.20	0.13
		Murdoch	5cm		0.65	0.78
			10cm		1.11	0.78
		Blight	5cm		0.21	0.25
			10cm		0.22	0.16
Va2/4	200mm	Soil Moisture Corp.		Negative		
		Murdoch	5cm	3.96		
			10cm	1.74		
		Blight	5cm	1.27		
			10cm	0.35		

Table 6: Infiltration rates (mm/hour) measured in areas on the northern part of the floodplain at the Nylsvley Nature Reserve

Soil Map Unit	Hole Depth	Method	Water Depth	Hole Number				
				19	20	21	22	23
C1	200mm	Soil Moisture Corp.				Negative		
		Murdoch	5cm			0.95		
			10cm			1.04		
		Blight	5cm			0.31		
			10cm			0.14		
Va2/3	200mm	Soil Moisture Corp.		71.5	Negative		70.2	65.5
		Murdoch	5cm	382.7	0.198		95.7	350.8
			10cm	529.3	V. Low		264.7	485.2
		Blight	5cm	123.3	0.064		30.8	113.0
			10cm	104.3	V. Low		52.2	95.6
	800mm	Soil Moisture Corp.						5.9
		Murdoch	5cm					31.9
			10cm					44.1
		Blight	5cm					10.3
			10cm					8.7

Table 7: Infiltration rates (mm/hour) measured at Transect 6

Soil Map Unit	Hole Depth	Method	Water Depth	Hole Number						
				24	25	26	27	28	29	30
Alluvium	200mm	Soil Moisture Corp.						Negative	Burrow	Burrow
		Murdoch	5cm					0.59	15.9	2.6
			10cm					0.27	Burrow	Burrow
		Blight	5cm					0.19	5.14	0.83
			10cm					0.05	Burrow	Burrow
	400mm	Soil Moisture Corp.							V. Low	
		Murdoch	5cm						V. Low	
			10cm						V. Low	
		Blight	5cm						V. Low	
			10cm						V. Low	
Va2/3	200mm	Soil Moisture Corp.		Negative	5cm only		2.73			
		Murdoch	5cm	47.8	3.16		24.7			
			10cm	38.6	No reading		29.4			
		Blight	5cm	15.4	1.02		7.96			
			10cm	7.6	No reading		5.79			
	400mm	Soil Moisture Corp.			V. Low	Negative				
		Murdoch	5cm		V. Low	0.99				
			10cm		V. Low	V. Low				
		Blight	5cm		V. Low	0.32				
			10cm		V. Low	V. Low				
	800mm	Soil Moisture Corp.				Stiff Clay				
		Murdoch	5cm			V. Low				
			10cm			V. Low				
		Blight	5cm			V. Low				
			10cm			V. Low				