

Table S1: Hydrologic properties of soil landscapes in the study catchments. Source: [31]

Soil type	Maximum rooting depth (mm)	Hydrologic group	Depth(mm)	Moist bulk density (g/cm ³)	Available water capacity (0-1)	Organic carbon (%)	Saturated Conductivity (mm/hr)	Electrical conductivity (ds/m)
Black Mountain (bm)	2400	B	0–250	1.50	0.43	1.71	83.3	0.03
			250–650	1.475	0.35	1.28	27.5	0.035
			650–1500	1.45	0.255	0.115	2.6	0.055
			1500–2400	1.30	0.25	0.24	12.5	0.04
Deadmans (de)	1000	C	0–100	1.50	0.34	4.99	27.1	0.06
			100–620	1.40	0.29	1.03	1.0	0.06
			620–1000	1.30	0.22	0.28	4.2	0.03
Nymboida Gorge (ny)	900	B	0–400	1.50	0.29	1.66	83.3	0.05
			400–900	1.50	0.185	0.575	22.1	0.035
Megan (me)	2600	C	0–400	1.55	0.325	3.37	27.1	0.055
			400–750	1.30	0.21	0.66	12.5	0.06
			750–1600	1.45	0.28	0.18	12.5	0.05
			1600–2600	1.50	0.46	0.12	1.0	0.05
Tallawudjah (tw)	1400	C	0–100	1.60	0.29	1.72	12.5	0.06
			100–600	1.50	0.29	1.19	12.5	0.07
			600–1000	1.35	0.28	0.27	4.2	0.06
			1000–1400	1.40	0.20	0.30	12.5	0.05
Timber Top (tt)	1300	B	0–250	1.50	0.16	1.37	83.3	0.03
			250–900	1.425	0.205	0.81	22.95	0.035
			900–1300	1.35	0.225	0.43	4.2	0.03
Ulong (ul)	2500	B	0–200	1.50	0.26	4.56	83.3	0.06
			200–1000	1.45	0.16	1.07	41.7	0.04
			1000–1600	1.30	0.16	0.51	12.5	0.03
			1600–2500	1.30	0.16	0.87	12.5	0.06
Glenreagh (gl)	3000	C	0–300	1.525	0.18	2.525	83.3	0.04
			300–900	1.50	0.20	0.28	41.7	0.035
			900–1600	1.30	0.19	0.20	2.5	0.02
			1600–3000	1.45	0.26	0.105	2.5	0.03

Table S2: Physical properties of soil landscapes in the study catchments. Source: [31]

Soil type	Depth(mm)	Particle size distribution (%)				Soil erodibility K
		Clay	Silt	Sand	Rock fragments	
Black Mountain (bm)	0–250	12	46	28	14	0.056
	250–650	18.5	38	26	17.5	0.048
	650–1500	22.5	36.5	29.5	11.5	0.057
	1500–2400	30	31	28	11	0.048
Deadmans (de)	0–100	12.5	29	38.5	20.0	0.0175
	100–620	28.0	41	26	5	0.045
	620–1000	45	34	13	8	0.032
Nymboida Gorge (ny)	0–400	12	21	38	29	0.051
	400–900	15	14.5	38	32.5	0.0435
Megan (me)	0–400	15	40.5	22	22.5	0.035
	400–750	29	41	14	16	0.048
	750–1600	25	62	13	0	0.090
	1600–2600	10	81	9	0	0.091
Tallawudjah (tw)	0–100	10	47	37	6	0.058
	100–600	13	47	31	9	0.064
	600–1000	28	39	19	14	0.050
	1000–1400	27	19	38	16	0.074
Timber Top (tt)	0–250	9	16	66	9	0.023
	250–900	18.5	23.5	52	6	0.0435
	900–1300	22.5	19.5	50	8	0.0415
Ulong (ul)	0–200	26	40	27	7	0.016
	200–1000	35	34	17	14	0.033
	1000–1600	35	29	21	15	0.086
	1600–2500	20	29	25	26	0.046
Glenreagh (gl)	0–300	12.5	16	57	14.5	0.0215
	300–900	31.5	14	53	1.5	0.0265
	900–1600	30	20	27	23	0.038
	1600–3000	33.5	21	28.5	17	0.040