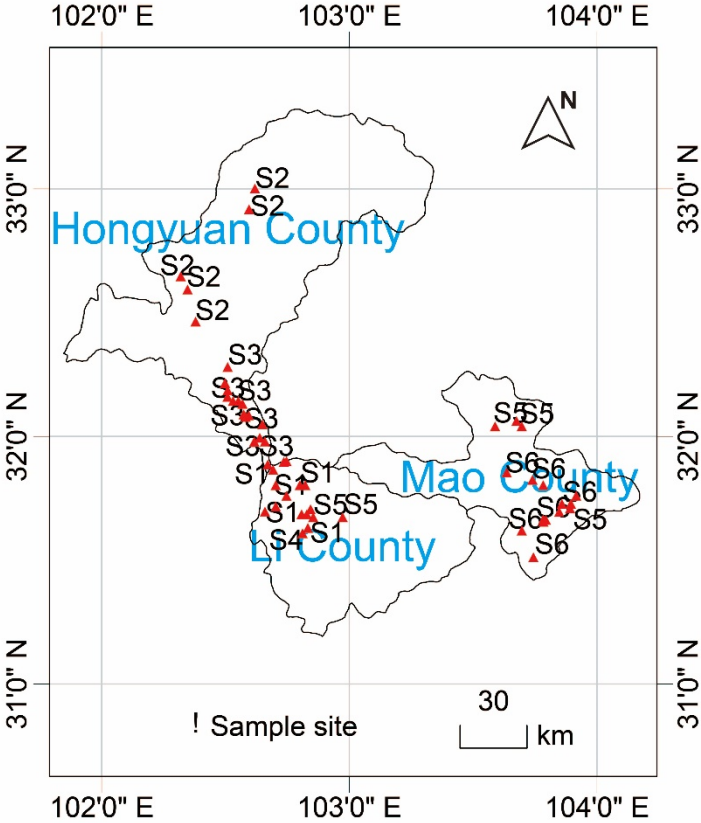
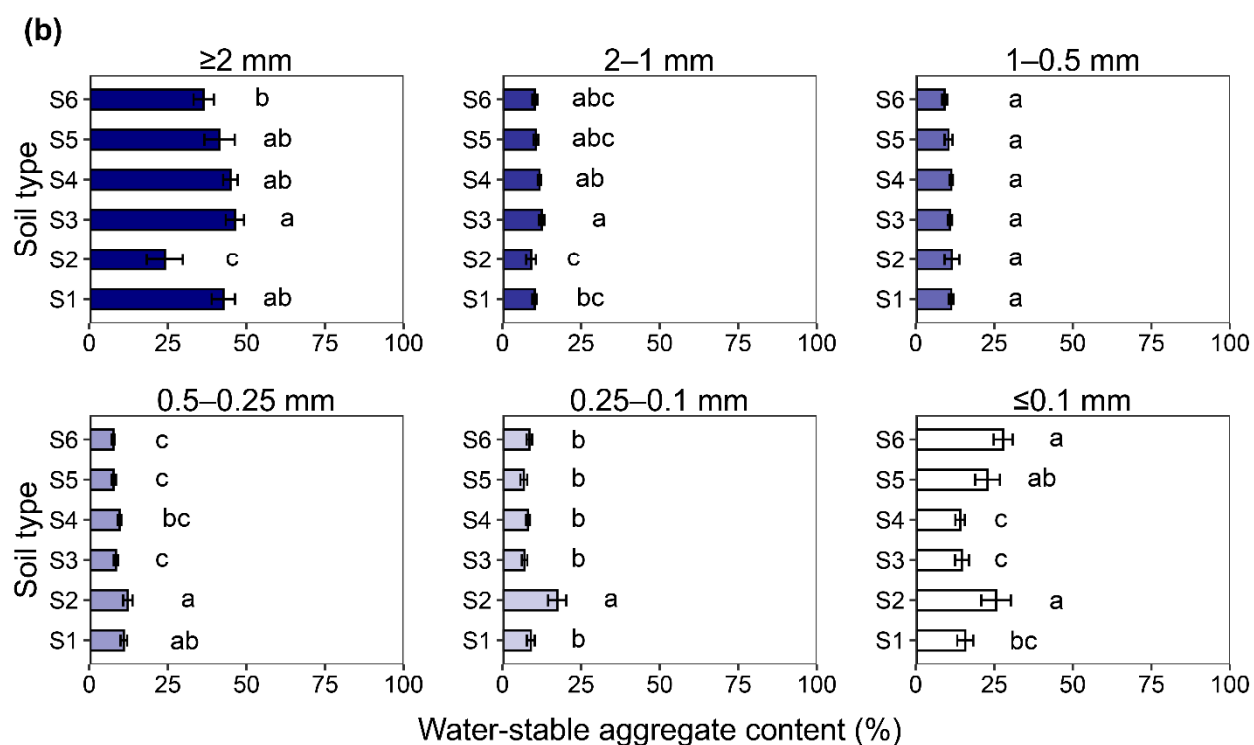
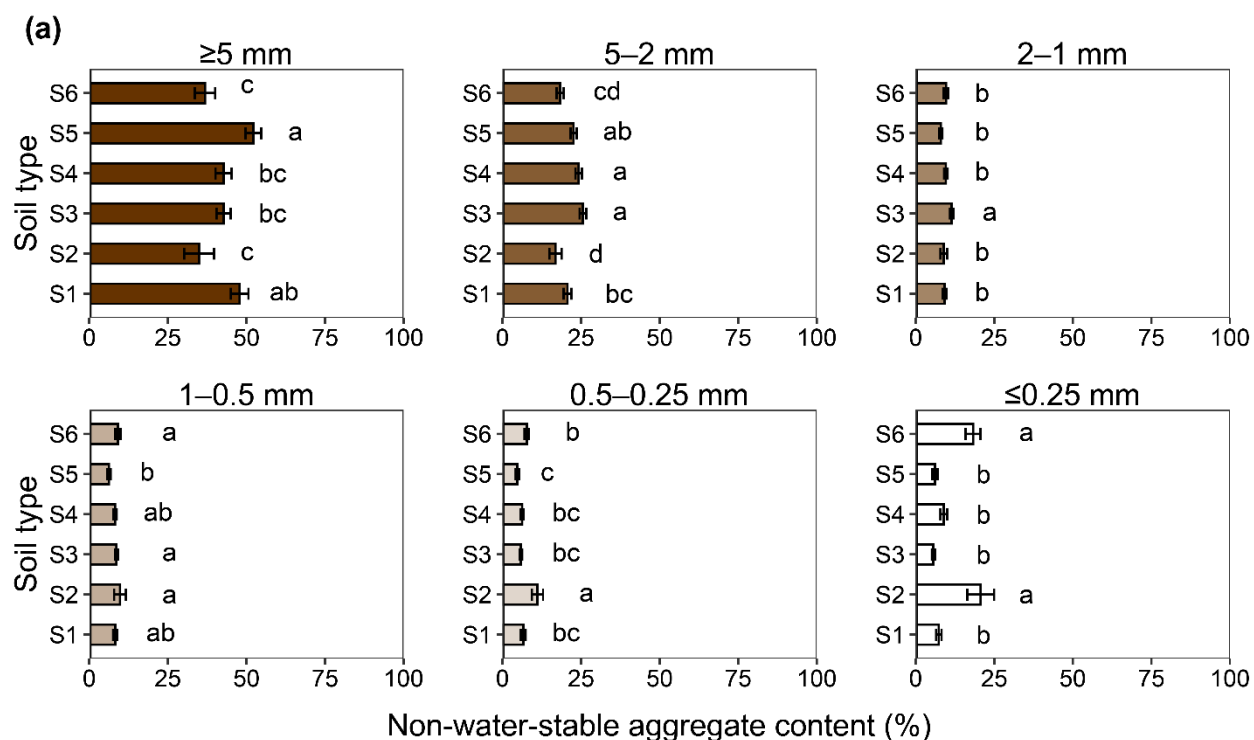


1     Supplementary Information



2  
3     **Figure S1.** Sample point of 6 soil types (subalpine meadow soil, S1; meadow soil, S2; dark brown soil, S3; brown  
4     soil, S4; yellow brown soil, S5; and cinnamon soil, S6).  
5



**Figure S2.** Variance analysis of non-water stable aggregate content **(a)** at 6 particle size levels (≥5 mm, 5–2 mm, 2–1 mm, 1–0.5 mm, 0.5–0.25 mm, ≤0.25 mm) and water stable aggregate content **(b)** at 6 particle size levels (≥2 mm, 2–1 mm, 1–0.5 mm, 0.5–0.25 mm, 0.25–0.1 mm, ≤0.1 mm) in 6 soil types (subalpine meadow soil, S1; meadow soil, S2; dark brown soil, S3; brown soil, S4; yellow brown soil, S5; and cinnamon soil, S6). Different lowercases indicate significant differences at  $p < 0.05$  by LSD test among soil types, and the same letters indicate no significant differences at  $p < 0.05$  by LSD test among soil types.

**Table S1.** Variance analysis of non-water stable aggregate (mean and sd) of size fraction in 6 soil types (subalpine meadow soil, S1; meadow soil, S2; dark brown soil, S3; brown soil, S4; yellow brown soil, S5; and cinnamon soil, S6). The different letters indicate significant difference at  $p<0.05$  by LSD test among 3 horizons (leaching horizon, A; sediment horizon, B; and parent material horizon, C) in the same soil types, and the same letters indicate no significant differences at  $p<0.05$  by LSD test among 3 horizons in the same soil types.

Soil type	Horizon	Non-water stable aggregate content					
		≥5 mm	5-2 mm	2-1 mm	1-0.5 mm	0.5-0.25 mm	< 0.25 mm
S1	A	44.35±13.93a	20.07±6.9a	10.34±2.07a	9.68±3.23a	8.12±5.03a	7.45±5.42a
	B	45.24±8.94a	22.64±3.64a	9.53±2.34a	8.24±3.16a	6.77±3.49a	7.58±4.26a
	C	55.46±20.1a	19.02±8.61a	7.39±3.6a	6.46±4.28a	4.59±1.93a	7.07±4.17a
S2	A	31.73±8.09a	21.11±6.37a	10.91±1.1a	11.16±2.13a	11.08±4.89a	14.01±5.39a
	B	35.52±23.19a	15.09±9.14a	7.26±1.63a	8.12±5.47a	9.16±7.12a	24.85±20.2a
	C	38.12±23.15a	14.38±6.41a	8.68±6.59a	10.05±12.11a	13.14±9.17a	23.26±20.62a
S3	A	40.58±10.16a	24.9±4.94a	12±2.16a	9.48±2.62a	6.83±2.92a	6.21±3.26a
	B	41.3±13.1a	26.84±5.94a	12.19±3.14a	9.03±2.47a	5.64±1.26a	5±1.59a
	C	47.23±13.29a	25±6.28a	9.93±2.69a	7.02±2.11a	4.99±1.38a	5.83±2.83a
S4	A	37.06±10.39a	26.07±5.08a	10.8±2.43a	9.44±2.47a	7.59±2.54a	9.03±4.59a
	B	40.75±12.07a	25.74±4.77a	10.75±2.86a	8.25±2.48a	6.3±2.3a	8.21±4.67a
	C	51.22±16.32a	20.59±5.53a	7.05±2.38b	6.7±3.32a	4.71±3.04a	9.73±8.28a
S5	A	44.33±12.83b	25.03±4.39a	9.61±2.98a	7.73±3.32a	5.94±3.18a	7.35±4.69a
	B	54.7±10.45ab	21.84±4.9a	7.2±1.86a	5.58±2.13a	4.4±2.13a	6.28±4.34a
	C	59.38±3.54a	20.45±4.35a	6.96±1.12a	5.06±1.61a	3.68±1.5a	4.46±2.01a
S6	A	29.3±9.7a	19.6±6.2a	11.44±3.52a	10.39±3.25a	8.21±3.29a	21.07±12.27a
	B	39.57±19.01a	16.31±4.91a	8.59±3.5a	8.79±4.99a	8.2±4a	18.54±11.96a
	C	48.76±13.23a	20.39±5.13a	8.03±2.06a	6.76±1.83a	5.35±1.4a	10.72±8.41a

**Table S2.** Variance analysis of water stable aggregate (mean and sd) of size fraction in 6 soil types (subalpine meadow soil, S1; meadow soil, S2; dark brown soil, S3; brown soil, S4; yellow brown soil, S5; and cinnamon soil, S6). The different lowercase letters indicate significant difference at  $p<0.05$  by LSD test among 3 horizons (leaching horizon, A; sediment horizon, B; and parent material horizon, C) in the same soil types, and the same letters indicate no significant differences at  $p<0.05$  by LSD test among 3 horizons in the same soil types.

Soil type	Horizon	Water stable aggregate content					
		≥2mm	2-1mm	1-0.5 mm	0.5-0.25 mm	0.25-0.1 mm	< 0.1 mm
S1	A	46.28±17.34a	12.13±2.73a	12.9±2.95a	10.64±5.64a	7.25±4.91a	10.8±7.02a
	B	44.58±20.56a	9.2±4.27a	9.55±3.41a	11.15±6.38a	10.45±7.14a	15.07±11.99a
	C	32.94±21.78a	7.93±2.03a	10.83±4.78a	11.38±4.96a	10.28±7.44a	26.64±18.65a
S2	A	25.14±8.9a	11.15±6.18a	13.47±7.03a	13.79±2.54a	16.61±10.89a	19.84±9.41a
	B	10.81±13.31a	6.5±5.17a	10.51±8.38a	12.87±5.43a	23.18±12.88a	36.14±18.12a
	C	44.76±30.27a	6.98±3.5a	4.9±1.95a	6.33±2.9a	12.74±10.7a	24.29±24.95a
S3	A	51.07±12.92a	14.98±4.35a	12.37±3.47a	8.05±2.66a	4.97±1.99a	8.56±4.87b
	B	46.15±14.06a	12.23±4.52a	11.43±2.84a	8.74±2.96a	6.68±3.75a	14.77±12.98ab
	C	40.02±19.45a	10.03±3.32a	8.78±4.04a	8.74±5.74a	9.84±6.56a	22.59±12.58a
S4	A	51.35±8.41a	13.69±1.69a	11.52±2.63a	8.5±2.64a	6.15±2.46a	8.78±3.98b
	B	43.63±10.29a	11.3±3.15a	11.86±2.63a	10.14±2.03a	8.75±3.22a	14.3±5.85ab
	C	40.31±16.86a	10.43±3.15a	10.48±3.75a	10.13±3.74a	9.35±3.39a	19.3±10.88a
S5	A	47±26.43a	9.81±2.54a	8.56±4.35a	6.26±2.74a	5.96±4.29a	22.4±21.5a
	B	34.64±20.61a	10.52±3.8a	12.26±7.83a	8.91±3.62a	7.79±4.62a	25.88±19.19a
	C	41.38±17.51a	11.22±4.2a	10.07±4.06a	8.35±3.31a	7.13±7.3a	21.87±9a
S6	A	35.25±15.39a	11.81±4.31a	9.93±4.01a	7.41±2.03a	9.18±5.51a	26.42±11.27a
	B	44.72±10.2a	9.75±2.32a	9.11±3.59a	7.65±2.68a	6.84±1.18a	21.93±7.18a
	C	38.32±16.76a	10.82±1.79a	9.13±2.76a	7.24±1.95a	6.42±1.92a	28.08±8.41a