

**Table S1.** Physicochemical characteristic of the active layer with different earthworm density.

Parameter	Unit	Zone A (~ 1,100 worm/m <sup>3</sup> )	Zone B (~ 7,000 worm/m <sup>3</sup> )
pH	-	3.9 ± 0.2	4.8 ± 0.5
ORP	mV	239.2 ± 29.6	367.5 ± 38.7
EC	µs/cm	266.9 ± 30.2	155.1 ± 33.4
Biofilm	gVS/m <sup>2</sup>	35.6 ± 9.8	48.0 ± 21.5
Humidity	%	73%	76%

**Note:** ORP: oxidation-reduction potential; EC: electric conductivity; VS: volatile solids; Biofilm: Volatil solid per m<sup>2</sup> of active layer, Humidity: % moisture of active layer.