

## SUPPLEMENTARY MATERIAL

### Land-use change on Mount Gede, Indonesia, reduced native earthworm populations and diversity

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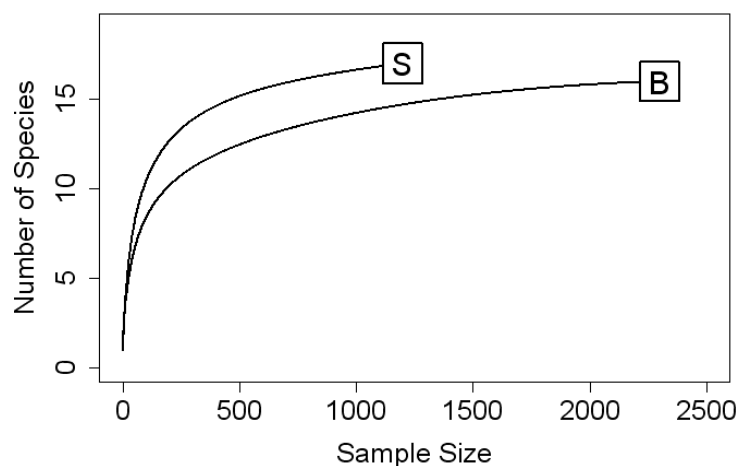
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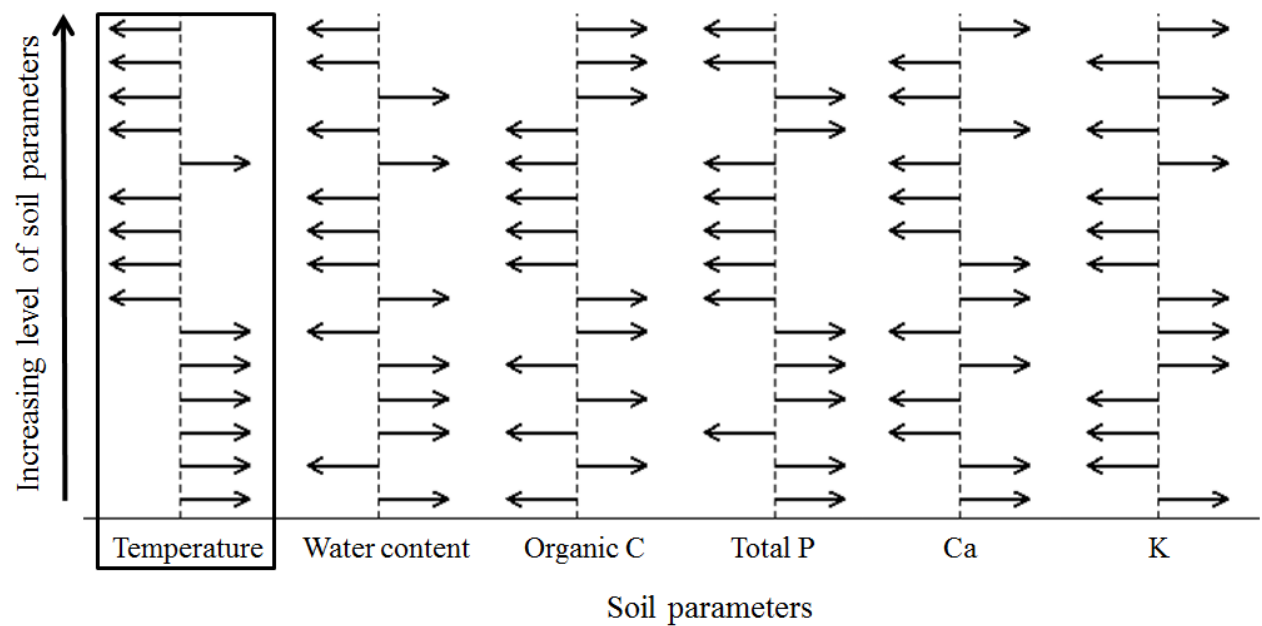
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**Figure S1.** Rarefaction curve in Bodogol (B) and Situ Gunung (S) were almost reached the asymptotes.



**Figure S2.** *O. occidentalis* abundance was higher than *Pn. corethrurus* with increasing of soil temperature (inside rectangle). Arrows pointing left indicates higher *O. occidentalis* abundance over *Pn. corethrurus* in certain area (see Online resource 5 for detailed soil parameters in each area), and vice versa. The areas without *O. occidentalis* and *Pn. corethrurus* (B1, B3, and S1) were omitted.



**Table S1.** Soil parameters from each area in Bodogol (B1–B9) and Situ Gunung (S1–S9). For soil physical factors: data  $\pm$  SD.

Area	Temperature (°C)	Water content (%)	Organic C (%)	Total P (mg/kg)	Ca (mg/kg)	K (mg/kg)
B1	21.96 $\pm$ 0.94	47.92 $\pm$ 26.19	4.30	127.80	2524.00	237.90
B2	21.42 $\pm$ 0.53	44.72 $\pm$ 26.21	3.63	101.60	1334.00	93.60
B3	22.58 $\pm$ 0.53	77.60 $\pm$ 32.54	2.31	103.20	2070.00	319.80
B4	26.44 $\pm$ 3.95	30.60 $\pm$ 21.13	2.47	429.20	1390.00	795.60
B5	28.21 $\pm$ 3.82	47.40 $\pm$ 25.92	2.51	418.60	1120.00	682.50
B6	24.90 $\pm$ 1.42	64.40 $\pm$ 25.26	2.15	92.10	1706.00	1205.10
B7	25.13 $\pm$ 1.80	66.07 $\pm$ 20.30	1.70	81.39	1432.00	1271.40
B8	32.58 $\pm$ 4.42	69.31 $\pm$ 14.79	1.71	80.78	1384.00	1267.50
B9	29.51 $\pm$ 2.74	51.33 $\pm$ 13.47	1.49	621.42	1138.00	994.50
S1	21.69 $\pm$ 0.84	59.20 $\pm$ 13.52	7.02	97.90	1320.00	397.80
S2	22.00 $\pm$ 0.96	51.80 $\pm$ 14.21	4.22	70.40	2074.00	491.40
S3	22.98 $\pm$ 0.89	47.60 $\pm$ 16.02	4.46	68.70	1090.00	592.80
S4	27.25 $\pm$ 4.45	41.20 $\pm$ 17.28	3.14	391.88	1242.00	702.00
S5	27.70 $\pm$ 1.81	59.55 $\pm$ 11.94	2.88	210.57	1532.00	471.90
S6	29.43 $\pm$ 2.51	59.78 $\pm$ 12.01	3.00	219.21	1496.00	702.00
S7	27.95 $\pm$ 1.01	64.25 $\pm$ 6.34	2.79	204.20	1566.00	315.90
S8	27.98 $\pm$ 1.16	69.50 $\pm$ 7.98	2.31	182.90	2046.00	304.20
S9	29.20 $\pm$ 3.21	65.69 $\pm$ 8.63	2.92	508.62	1960.00	686.40

**Table S2.** Relative dominance (%) of earthworm species in each area from Bodogol. Species with asterisks are natives of the Orient. See Table 1 for explanation of the areas.

Species	B1	B2	B3	B4	B5	B6	B7	B8	B9
<i>Amyntas asiaticus</i> Michaelsen, 1900	4.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amyntas hupeiensis</i> (Michaelsen, 1895)	8.70	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amyntas illotus</i> species-group sensu Sims & Easton, 1972	13.04	0.45	0.00	10.71	4.52	10.00	3.15	0.00	0.13
<i>Amyntas robustus</i> (Perrier, 1872)	8.70	1.36	4.17	0.32	0.17	0.00	0.00	0.00	0.00
<i>Dichogaster affinis</i> (Michaelsen, 1890)	0.00	3.18	0.00	0.00	0.33	0.00	0.00	0.00	0.54
<i>Drawida barwelli</i> (Beddard, 1886)	36.96	30.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
* <i>Drawida nepalensis</i> Michaelsen, 1907	0.00	0.00	8.33	0.00	0.00	0.00	0.00	0.00	0.00
<i>Metaphire californica</i> (Kinberg, 1867)	26.09	1.36	0.00	3.57	0.50	0.00	0.79	0.00	0.00
<i>Metaphire javanica</i> (Kinberg, 1867)	2.17	0.00	4.17	0.00	0.00	0.00	0.00	0.00	0.00
<i>Metaphire planata</i> (Gates, 1926)	0.00	0.00	83.33	0.32	0.00	0.00	0.00	0.00	0.00
* <i>Notoscolex javanica</i> (Michaelsen, 1910)	0.00	0.45	0.00	0.00	3.85	0.00	0.00	0.00	6.75
<i>Ocnerodrilus occidentalis</i> Eisen, 1878	0.00	6.82	0.00	28.25	12.04	3.53	11.81	55.22	92.31
<i>Perionyx excavatus</i> Perrier, 1872	0.00	0.00	0.00	1.95	3.01	0.00	0.00	5.97	0.00
<i>Pheretima darnleiensis</i> (Fletcher, 1886)	0.00	0.00	0.00	0.00	0.00	0.00	2.36	0.00	0.00
* <i>Pheretima pura</i> species-group of Sims & Easton, 1972	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00
<i>Pontoscolex corethrurus</i> (Muller, 1857)	0.00	55.00	0.00	54.87	75.59	85.88	81.89	38.81	0.27

**Table S3.** Relative dominance (%) of earthworm species in each area from Situ Gunung.

Species with asterisks are natives of the Orient. See Table 1 for explanation of the areas.

Species	S1	S2	S3	S4	S5	S6	S7	S8	S9
<i>Amyntas aeruginosus</i> (Kinberg, 1867)	3.66	0.00	5.62	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amyntas gracilis</i> (Kinberg, 1867)	0.00	6.90	4.49	1.12	0.00	0.00	0.00	0.00	0.00
<i>Amyntas illotus</i> species-group sensu Sims & Easton, 1972	20.73	11.49	17.98	2.25	0.00	0.60	0.00	0.00	0.00
<i>Amyntas minimus</i> (Horst, 1893)	47.56	6.90	7.87	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amyntas morrissi</i> species-group sensu Sims & Easton, 1972	0.00	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Amyntas robustus</i> (Perrier, 1872)	7.32	2.30	20.22	0.00	0.00	0.60	0.00	0.00	0.00
<i>Dichogaster affinis</i> (Michaelsen, 1890)	0.00	0.00	1.12	0.00	0.29	0.00	0.00	3.03	0.71
<i>Drawida barwelli</i> (Beddard, 1886)	0.00	54.02	3.37	0.00	0.00	0.00	0.00	0.00	0.00
* <i>Drawida nepalensis</i> Michaelsen, 1907	4.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Metaphire californica</i> (Kinberg, 1867)	0.00	3.45	14.61	4.49	0.00	0.00	0.00	0.00	0.00
<i>Metaphire javanica</i> (Kinberg, 1867)	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
* <i>Notoscolex javanica</i> (Michaelsen, 1910)	0.00	0.00	0.00	0.00	1.46	0.60	6.67	0.00	1.42
<i>Ocnodrilus occidentalis</i> Eisen, 1878	0.00	3.45	0.00	77.53	92.69	94.58	90.00	96.97	87.90
<i>Polypheretima bifaria</i> species-group of Easton, 1979	0.00	1.15	1.12	0.00	0.00	0.00	0.00	0.00	0.00
* <i>Polypheretima moelleri</i> (Michaelsen, 1921)	4.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
* <i>Polypheretima sempolensis</i> Easton, 1979	9.76	3.45	3.37	0.00	0.00	0.00	0.00	0.00	0.00
<i>Pontoscolex corethrurus</i> (Muller, 1857)	0.00	5.75	20.22	14.61	5.56	3.61	3.33	0.00	9.96