Supplementary Table 1 Initial PyOM and corn stover properties

Property (units)	**Value**	
	PyOM	Stover
Total C (%)	61.0	41.9
Total N (%)	2.7	1.96
C:N (by mass)	22	21
C isotope signature ($\delta^{13}C$, ‰)	+37.5	+1.7
Total H (%)	3.9	
Total O (%)	15	
pH_{DIW} (1:20 w/v)	10.0	
Feedstock	Corn	
Particle size (mm)	< 2	
Heating rate (°C min^{-1})	5	
Final temp (°C)	350	
Residence time (min)	45	
Surface area (m^2 g^{-1})	92.8	
ASTM Ash (%)	17	
ASTM Volatiles (%)	35	
ASTM Fixed C (%)	48	

Supplementary Table 2 Initial soil properties

Property (units)	**Value**
Texture	(Channery) silt loam
Bulk density (g cm^{-3})	
pH_{DIW}	6.0
% sand	28.1
% silt	54.7
% clay	17.2
Total C (%)	1.48
Total N (%)	0.16
C:N (mass)	9.39
C isotope signature ($\delta^{13}C$, ‰)	-25.5
Microbial biomass N* (mg kg^{-1} dry soil) (Vance *et al*., 1987)	8.5
*Microbial biomass C data were compromised, but based on a measured C:N ratio of 10.2 in the DOM, we predict roughly 87 mg MB-C kg^{-1} dry soil.	

Supplementary Table 3 Forward primer (full) sequences (**adapter**barcode*pad&link*16Sfwdprimer)

AATGATACGGCGACCACCGAGATCTACACATCGTACG*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA
AATGATACGGCGACCACCGAGATCTACACACTATCTG*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA
AATGATACGGCGACCACCGAGATCTACACTAGCGAGT*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA
AATGATACGGCGACCACCGAGATCTACACCTGCGTGT*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA
AATGATACGGCGACCACCGAGATCTACACTCATCGAG*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA
AATGATACGGCGACCACCGAGATCTACACCGTGAGTG*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA
AATGATACGGCGACCACCGAGATCTACACGGATATCT*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA
AATGATACGGCGACCACCGAGATCTACACGACACCGT*AATGTTTTAATG*GTG YCAGCMGCMGCGGTRA

Supplementary Table 4 Reverse primer (full) sequences (**adapter**barcode*pad&link*16Srevprimer)

CAAGCAGAAGACGGCATACGAGATAACTCTCG*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATACTATGTC*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATAGTAGCGT*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATCAGTGAGT*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATCGTACTCA*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATCTACGCAG*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATGGAGACTA*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATGTCGCTCG*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATGTCGTAGT*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATTAGCAGAC*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATTCATAGAC*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT
CAAGCAGAAGACGGCATACGAGATTCGCTATA*CAACCCAACAGG*CCGYCCA ATTYMTTTRAGTTT

Supplementary Table 5 Sequencing primer sequences
Read 1: TATGATAATTGTGTGYCAGCMGCMGCGGTRA
Read 2: AGTCAGTCAGGGCCGYCCAATTYMTTTRAGTTT
Index/barcode: AAACTYAAAKRAATTGGRCGGCCCTGACTGACT

Supplementary Table 6 Mean total DNA extracted from soils (μg DNA g^{-1} dry soil) ± SD, letters indicate significant differences between amendment types within days (ANOVA, Tukey's HSD, $p<0.05$)

Amendment	Day 1	Day 12	Day 82
Soil only (n=16)	21.9±1.6 a	20.1±0.8 b	16.2±0.6 b
+PyOM (n=16)	21.8±1.0 a	18.9±0.6 b	17.3±0.7 b
+Stover (n=8)	24.8±1.4 a	27.9±1.2 a	22.4±0.8 a

Quantities of DNA extracted from the soil on day 1 did not change as a result of the additions, but on days 12 and 82, more DNA was extracted per unit soil mass from the plots with fresh organic matter additions than those with PyOM or no additions, and this result was significant (ANOVA, Tukey's HSD, $p<0.05$; Supplementary Table 3). Additionally, significantly less DNA per unit mass was extracted on the final day than on the first two sampling dates (ANOVA, Tukey's HSD, $p<0.05$). The results from Day 1 indicate that the presence of PyOM likely did not substantially interfere with DNA extraction, which can be a concern due to its potential sorptive properties (Jin, 2010). The finding that PyOM did not affect total DNA is consistent with the findings of Prayogo *et al*. (2014), who did not find increased total microbial phospholipid fatty acids with the addition of 470°C willow PyOM to a flinty clay loam soil.

Supplementary Table 7: OTUs enriched in stover amended soil relative to control BLAST against Living Tree Project

OTU ID	Day of Response [a]	Top BLAST hits	BLAST %ID
OTU.3	12, 82	*Arthrobacter spp.*	100.0
OTU.4	12	*Massilia tieshanensis*, *Massilia aerilata*	100.0
OTU.6	12, 82	*Bacillus megaterium*, *Bacillus flexus*	100.0
OTU.9	12	*Sphingobacterium siyangense*	100.0
OTU.10	12, 82	*Terrabacter terrae*, *Terrabacter tumescens*, *Terrabacter sp. ON10*, *Terrabacter lapilli*, *Terrabacter sp. PY2*	100.0
OTU.18	12, 82	*Buttiauxella warmboldiae*, *Buttiauxella izardii*, *Buttiauxella agrestis*, *Pantoea rwandensis*, *Pantoea rodasii*, *Enterobacter amnigenus*, *Buttiauxella noackiae*	100.0
OTU.28	12, 82	*Stenotrophomonas chelatiphaga*	98.67
OTU.33	82	*Roseomonas aquatica*	98.13
OTU.39	12, 82	*Thermomonas dokdonensis*	99.47
OTU.45	82	*Rudaea cellulosilytica*	97.06
OTU.57	12, 82	*Methylobacterium radiotolerans*, *Methylobacterium longum*	100.0
OTU.58	12, 82	*Aquamonas fontana*	99.73
OTU.62	12, 82	*Streptomyces spp.*	100.0
OTU.78	12	*Oxalicibacterium flavum*	98.92
OTU.82	12, 82	*Rhizobium endophyticum*, *Rhizobium tubonense*, *Rhizobium tibeticum*	100.0
OTU.83	82	*Terrimonas sp. M-8*, *Terrimonas sp. RIB1-6*	95.95
OTU.84	12, 82	*Tumebacillus permanentifrigoris*	99.46
OTU.88	12	*Chryseobacterium sp. THMBM1*	99.73
OTU.89	82	*Arenimonas sp. CH15-1*	99.2
OTU.91	12	*Chryseobacterium jejuense*, *Chryseobacterium sp. RBA2-6*	98.92
OTU.93	12	*Methylocystis echinoides*	96.51
OTU.100	12	*Novosphingobium naphthalenivorans*, *Novosphingobium mathurense*, *Novosphingobium pentaromativorans*, *Novosphingobium resinovorum*	99.46
OTU.112	12, 82	*Pseudomonas fulva*, *Pseudomonas flavescens*, *Pseudomonas benzenivorans*, *Pseudomonas argentinensis*	100.0
OTU.114	12, 82	*Microvirga guangxiensis*	99.46

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.118	12, 82	*Flavobacterium beibuense*, *Flavobacterium sp. FCS-5*	98.11
OTU.120	82	*Devosia insulae*	99.46
OTU.132	82	*Ilumatobacter fluminis*	97.87
OTU.133	12	*Deinococcus gobiensis*, *Deinococcus navajonensis*	95.41
OTU.139	12, 82	*Burkholderia glathei*	100.0
OTU.140	82	*Rhizobiales bacterium Mfc52*	92.74
OTU.141	12, 82	*Achromobacter spanius*, *Achromobacter insolitus*	100.0
OTU.152	82	*Chitinophaga arvensicola*	94.32
OTU.154	12, 82	*Comamonas thiooxydans*, *Comamonas testosteroni*	99.73
OTU.160	82	*Hydrotalea flava*	95.41
OTU.166	82	*Niastella sp. JCN-23*	96.49
OTU.176	82	No hits of at least 90% identity	86.74
OTU.177	12, 82	*Microvirga aerilata*	98.66
OTU.184	12, 82	*Adhaeribacter terreus*	98.11
OTU.185	12, 82	*Erythromicrobium ramosum*, *Porphyrobacter tepidarius*	99.46
OTU.190	12	*Lysobacter sp. RCML-52*	99.73
OTU.191	12	*Geothrix fermentans*	96.26
OTU.193	82	No hits of at least 90% identity	84.88
OTU.218	12, 82	*Rhizobium cellulosilyticum*	100.0
OTU.229	12	*Flavisolibacter ginsengisoli*	96.49
OTU.265	12	*Segetibacter koreensis*	99.19
OTU.269	82	*Aminobacter aminovorans*, *Mesorhizobium loti*, *Mesorhizobium australicum WSM2073*, *Mesorhizobium shangrilense*	100.0
OTU.271	12, 82	*Bosea sp. R-46060*	100.0
OTU.287	12, 82	*Flavisolibacter ginsengisoli*	95.14
OTU.311	82	*Burkholderia sordidicola*	92.78
OTU.316	12, 82	*Caulobacter henricii*	99.46
OTU.319	82	*Dokdonella sp. KIS28-6*	100.0
OTU.333	12, 82	No hits of at least 90% identity	89.97
OTU.339	12, 82	*Brevundimonas halotolerans*	99.73
OTU.343	12, 82	*Pedobacter rhizospharae*	100.0

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.349	82	No hits of at least 90% identity	88.13
OTU.352	82	*Sphingobacteria bacterium RYG*	93.28
OTU.357	12, 82	*Ochrobactrum pseudogrignonense*	100.0
OTU.361	12, 82	*Streptosporangium amethystogenes subsp. amethystogenes*, *Streptosporangium longisporum*, *Streptosporangium album*, *Streptosporangium roseum*, *Streptosporangium oxazolinicum*, *Streptosporangium amethystogenes subsp. fukuiense*, *Streptosporangium canum*	100.0
OTU.373	12, 82	*Paenibacillus pabuli*, *Paenibacillus tundrae*, *Paenibacillus taichungensis*, *Paenibacillus xylanexedens*, *Paenibacillus xylanilyticus*	100.0
OTU.379	82	No hits of at least 90% identity	86.77
OTU.391	12	*Flavisolibacter ginsengisoli*	95.68
OTU.395	12, 82	*Solibius ginsengiterrae*	95.41
OTU.399	82	*Flavobacterium sp. DK69*	96.49
OTU.402	12	*Brevundimonas vesicularis*, *Brevundimonas nasdae*	100.0
OTU.412	82	*Sphingobacteria bacterium RYG*	92.43
OTU.413	12, 82	*Cellulomonas aerilata*, *Cellulomonas terrae*, *Cellulomonas humilata*, *Cellulomonas soli*	100.0
OTU.442	12, 82	*Rhodococcus wratislaviensis*	100.0
OTU.444	82	No hits of at least 90% identity	84.95
OTU.448	12, 82	*Brevundimonas alba*	99.19
OTU.451	12	*Polaromonas aquatica*, *Polaromonas jejuensis*, *Polaromonas vacuolata*	99.46
OTU.454	12, 82	*Nocardioides hwasunensis*	100.0
OTU.455	12, 82	*Methylobacterium rhodesianum*, *Methylobacterium populi*, *Methylobacterium zatmanii*	100.0
OTU.464	82	No hits of at least 90% identity	82.18
OTU.468	82	*Steroidobacter denitrificans*	91.18
OTU.472	82	*Steroidobacter denitrificans*	98.4
OTU.477	82	*Ferruginibacter alkalilentus*, *Ferruginibacter lapsinanis*	95.95
OTU.484	82	*Reyranella massiliensis*	97.85
OTU.503	82	*Opitutus terrae*	90.91

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.507	12, 82	*Methylophilus methylotrophus*, *Methylotenera versatilis 301*	99.2
OTU.518	82	*Amaricoccus kaplicensis*	96.51
OTU.519	12	*Acinetobacter nosocomialis*, *Acinetobacter calcoaceticus*, *Acinetobacter pittii*	100.0
OTU.523	82	*Phaselicystis flava*	92.25
OTU.524	82	*Aeromonas spp.*	100.0
OTU.529	82	No hits of at least 90% identity	88.38
OTU.534	12, 82	*Methylobacterium aquaticum*	100.0
OTU.535	12, 82	*Cupriavidus necator*, *Wautersia numazuensis*, *Cupriavidus basilensis*	100.0
OTU.536	82	*Ferruginibacter alkalilentus*, *Ferruginibacter lapsinanis*	94.07
OTU.541	12	*Flavobacterium sp. MK3*	99.46
OTU.548	82	No hits of at least 90% identity	89.3
OTU.550	82	*Ohtaekwangia koreensis*	92.72
OTU.564	82	*Solitalea koreensis*	99.73
OTU.565	82	*Marinobacter salicampi*	92.51
OTU.567	12	*Dyella koreensis*, *Dyella soli*	100.0
OTU.571	82	*Rhodopseudomonas sp. JA576*, *Rhodopseudomonas faecalis*, *Rhodopseudomonas palustris*, *Rhodopseudomonas sp. R-45977*	98.12
OTU.582	82	No hits of at least 90% identity	88.3
OTU.589	12, 82	*Sphingomonas trueperi*, *Sphingomonas pituitosa*	98.66
OTU.590	12, 82	*Chryseobacterium piscium*, *Chryseobacterium balustinum*	99.19
OTU.599	82	*Polynucleobacter acidiphobus*	90.43
OTU.604	12, 82	*Pseudochrobactrum sp. KSS 7.8*, *Pseudochrobactrum saccharolyticum*, *Pseudochrobactrum asaccharolyticum*	97.85
OTU.609	82	No hits of at least 90% identity	89.65
OTU.612	12, 82	*Burkholderia phenoliruptrix*, *Burkholderia graminis*	100.0
OTU.614	82	*Singulisphaera acidiphila*	99.73
OTU.619	12, 82	*Nocardioides hankookensis*	98.67
OTU.628	82	*Spirochaeta aurantia subsp. aurantia*	95.17

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.629	82	No hits of at least 90% identity	83.99
OTU.635	12	*Sphingomonadaceae bacterium KMM 6042*	99.2
OTU.636	12	*Rummeliibacillus pycnus*	99.2
OTU.639	12, 82	*Pedobacter ginsengisoli*	100.0
OTU.640	12, 82	*Rhodococcus jostii*	99.73
OTU.642	82	No hits of at least 90% identity	88.03
OTU.645	12, 82	*Kaistia sp. 5YN7-3*, *Kaistia sp. B6-12*	100.0
OTU.649	12	*Kribbella antibiotica*, *Kribbella flavida*, *Kribbella sp. PIP 118*	100.0
OTU.655	12	*Bacillus gibsonii*	100.0
OTU.673	12	*Ramlibacter tataouinensis*	98.66
OTU.678	12, 82	*Shinella granuli*, *Shinella zoogloeoides*	100.0
OTU.680	82	No hits of at least 90% identity	88.0
OTU.688	82	*Sphingobacteria bacterium RYG*	96.22
OTU.689	82	No hits of at least 90% identity	87.17
OTU.697	12, 82	*Dokdonella koreensis*	95.19
OTU.702	82	No hits of at least 90% identity	83.89
OTU.704	12, 82	*Microbacterium fluvii*, *Microbacterium pumilum*, *Microbacterium deminutum*, *Microbacterium terricola*	100.0
OTU.706	82	*Cellvibrio fulvus*	100.0
OTU.707	82	*Paracoccus sp. NB88*	99.46
OTU.715	82	No hits of at least 90% identity	86.74
OTU.720	82	*Luteolibacter sp. CCTCC AB 2010415*	99.2
OTU.734	12, 82	*Sphingomonas changbaiensis*	98.66
OTU.746	82	No hits of at least 90% identity	88.5
OTU.767	82	No hits of at least 90% identity	89.57
OTU.774	82	*Sphingobacteria bacterium RYG*	90.84
OTU.779	82	*Phenylobacterium falsum*	95.43
OTU.791	82	No hits of at least 90% identity	85.83
OTU.814	82	*Pirellula staleyi DSM 6068*	91.4
OTU.816	12	*Terriglobus saanensis SP1PR4*	98.13
OTU.827	82	*Roseomonas terrae*, *Roseomonas lacus*	98.12
OTU.831	82	*Acidiphilium acidophilum*	94.65
OTU.835	82	No hits of at least 90% identity	89.81
OTU.837	82	No hits of at least 90% identity	83.29

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.838	12	No hits of at least 90% identity	85.41
OTU.840	82	*Dongia mobilis*	96.78
OTU.862	12, 82	*Mucilaginibacter sp. BR-18*	99.19
OTU.863	82	*Singulisphaera rosea*	92.8
OTU.873	12	*Hymenobacter algoricola*	100.0
OTU.876	12, 82	*Shimazuella kribbensis*	99.19
OTU.887	82	*Gemmatimonas aurantiaca*	92.74
OTU.897	82	*Bryobacter aggregatus*	92.47
OTU.900	12, 82	*Paenibacillus pocheonensis*	100.0
OTU.908	82	No hits of at least 90% identity	82.67
OTU.909	82	No hits of at least 90% identity	89.25
OTU.923	82	*Chitinimonas taiwanensis*, *Burkholderia soli*	90.45
OTU.924	82	No hits of at least 90% identity	88.56
OTU.939	12, 82	*Dyadobacter beijingensis*	97.57
OTU.940	82	*Asticcacaulis taihuensis*	96.26
OTU.942	12	*Hymenobacter rigui*	99.46
OTU.964	12	*Pelosinus fermentans*, *Pelosinus propionicus*	99.2
OTU.967	82	No hits of at least 90% identity	85.75
OTU.971	82	*Sphingobacteria bacterium RYG*	92.45
OTU.976	12, 82	*Paenibacillus borealis*	99.73
OTU.993	12, 82	*Fimbriimonas ginsengisoli Gsoil 348*	92.55
OTU.1008	82	*Phaselicystis flava*	92.25
OTU.1013	82	*Ilumatobacter fluminis*	94.15
OTU.1016	82	*Sphingomonas changbaiensis*	96.25
OTU.1022	12, 82	No hits of at least 90% identity	85.87
OTU.1031	82	*Bryobacter aggregatus*	90.86
OTU.1035	82	*Spirochaeta aurantia subsp. aurantia*	94.37
OTU.1045	12, 82	*Rhodanobacter sp. DCY45*, *Rhodanobacter fulvus*	100.0
OTU.1046	12	*Clostridium saccharoperbutylacetonicum*	99.73
OTU.1057	12	*Vampirovibrio chlorellavorus*	94.32
OTU.1062	82	*Ohtaekwangia koreensis*	93.51
OTU.1083	82	*Aciditerrimonas ferrireducens*	92.8
OTU.1085	12, 82	*Sphingomonas endophytica*, *Sphingomonas phyllosphaerae*	100.0
OTU.1090	82	*Ohtaekwangia koreensis*	94.61

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.1102	82	*Geobacter grbiciae*, *Desulfuromonas michiganensis*, *Geobacter metallireducens*	90.27
OTU.1104	12	No hits of at least 90% identity	87.5
OTU.1106	82	*Adhaeribacter aerophilus*	91.83
OTU.1107	82	*Lysobacter sp. DCY21T*	99.2
OTU.1108	82	*Pirellula staleyi DSM 6068*	95.16
OTU.1119	12, 82	*Devosia crocina*, *Devosia riboflavina*	98.66
OTU.1120	82	*Chitinimonas taiwanensis*	91.47
OTU.1123	82	*Porticoccus litoralis*	92.49
OTU.1133	12, 82	*Pedobacter insulae*	98.11
OTU.1134	82	*Sporocytophaga myxococcoides*	98.65
OTU.1145	82	*Cohaesibacter gelatinilyticus*	90.45
OTU.1155	12	No hits of at least 90% identity	80.58
OTU.1166	82	*Planctomyces limnophilus*	91.47
OTU.1182	12	*Pseudomonas psychrotolerans*	99.46
OTU.1192	82	*Rhodococcus triatomae*	97.87
OTU.1195	12	*Segetibacter koreensis*	97.3
OTU.1200	82	*Frigoribacterium mesophilum*	99.73
OTU.1208	12	*Bacteriovorax stolpii*	98.93
OTU.1217	12	*Chitinophaga pinensis*	98.65
OTU.1222	12	*Bacillus aerophilus*, *Bacillus pumilus*, *Bacillus safensis*, *Bacillus stratosphericus*, *Bacillus altitudinis*	100.0
OTU.1226	12, 82	*Nocardiopsis alba*	100.0
OTU.1234	82	*Schlesneria paludicola*	97.31
OTU.1237	82	*Terrimonas ferruginea*	92.45
OTU.1240	12	*Hymenobacter sp. A2-91*	98.11
OTU.1252	82	*Singulisphaera rosea*	94.93
OTU.1259	82	No hits of at least 90% identity	80.11
OTU.1264	82	*Terrimonas lutea*	93.55
OTU.1272	12	No hits of at least 90% identity	85.11
OTU.1276	82	*Turneriella parva*	99.47
OTU.1288	82	No hits of at least 90% identity	86.15
OTU.1289	12	*Clostridium pascui*, *Clostridium peptidivorans*	95.72
OTU.1295	12, 82	*Leifsonia poae*	99.2
OTU.1301	82	*Burkholderia sp. ATSB16*	94.39

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.1304	82	*Methylobacillus glycogenes*, *Methylobacillus sp. Lap*	97.33
OTU.1321	82	*Sphingobacteria bacterium RYG*	94.09
OTU.1323	82	*Cystobacter badius*, *Cystobacter velatus*, *Cystobacter miniatus*	94.93
OTU.1324	12, 82	*Sphingomonas japonica*	98.37
OTU.1329	82	No hits of at least 90% identity	89.04
OTU.1344	12, 82	*Hymenobacter ocellatus*	97.3
OTU.1347	82	*Friedmanniella spumicola*, *Friedmanniella okinawensis*, *Friedmanniella antarctica*, *Friedmanniella sp. W6*	100.0
OTU.1351	82	No hits of at least 90% identity	89.89
OTU.1366	12, 82	*Agromyces humatus*	99.73
OTU.1373	12, 82	*Dyella marensis*, *Dyella terrae*, *Fulvimonas soli*, *Dokdonella sp. LM 2-5*	95.45
OTU.1378	12	*Chitinophaga arvensicola*, *Chitinophaga niastensis*	93.24
OTU.1380	82	No hits of at least 90% identity	89.36
OTU.1384	12, 82	*Sphingomonas trueperi*, *Sphingomonas pituitosa*	96.78
OTU.1385	12, 82	*Sphingopyxis panaciterrae*, *Sphingopyxis chilensis*	100.0
OTU.1389	12	*Arthrobacter crystallopoietes*	98.13
OTU.1406	82	*Geminicoccus roseus*	92.49
OTU.1425	12	No hits of at least 90% identity	89.54
OTU.1428	82	*Chitinophaga ginsengisegetis*	92.18
OTU.1436	12	No hits of at least 90% identity	88.47
OTU.1439	82	*Chitinophaga sp. CS5-B1*	99.73
OTU.1490	82	No hits of at least 90% identity	81.42
OTU.1495	82	*Haliea mediterranea*	92.53
OTU.1496	12, 82	*Bdellovibrio bacteriovorus*	93.32
OTU.1506	12	*Paenibacillus turicensis*	98.66
OTU.1518	82	*Steroidobacter denitrificans*	96.79
OTU.1522	82	*Haliangium ochraceum*	91.03
OTU.1524	82	*Roseococcus suduntuyensis*	98.39
OTU.1535	82	*Nocardioides sp. OS4*, *Nocardioides fonticola*	98.13
OTU.1544	82	*Armatimonas rosea*	92.0
OTU.1550	12, 82	*Roseomonas ludipueritiae*	98.39

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.1552	82	No hits of at least 90% identity	85.56
OTU.1553	82	*Singulisphaera rosea*	91.2
OTU.1556	12	*Paenibacillus agarexedens*, *Paenibacillus sputi*	98.12
OTU.1564	82	*Niastella yeongjuensis*	99.73
OTU.1566	82	*Panacagrimonas perspica*	98.12
OTU.1570	82	No hits of at least 90% identity	78.88
OTU.1574	12	*Dyadobacter ginsengisoli*	98.38
OTU.1575	12	*Exiguobacterium indicum*, *Exiguobacterium acetylicum*	100.0
OTU.1576	12, 82	*Delftia tsuruhatensis*, *Delftia lacustris*	98.66
OTU.1577	82	*Isosphaera-like str. OJF2*	94.16
OTU.1587	82	No hits of at least 90% identity	85.68
OTU.1588	82	*Pseudolabrys taiwanensis*	96.51
OTU.1593	82	No hits of at least 90% identity	89.87
OTU.1594	82	*Schlesneria paludicola*	94.1
OTU.1599	82	No hits of at least 90% identity	86.98
OTU.1613	82	*Phaselicystis flava*	91.47
OTU.1633	82	No hits of at least 90% identity	89.46
OTU.1636	82	*Phenylobacterium falsum*	97.04
OTU.1640	82	*Nocardioides halotolerans*	98.13
OTU.1659	12	*Paenibacillus daejeonensis*	100.0
OTU.1667	82	No hits of at least 90% identity	84.17
OTU.1670	82	No hits of at least 90% identity	89.84
OTU.1675	82	No hits of at least 90% identity	86.54
OTU.1680	82	*Pseudomonas alcaligenes*	98.1
OTU.1682	12	*Collimonas fungivorans*, *Oxalicibacterium faecigallinarum*, *Oxalicibacterium horti*	97.85
OTU.1684	12, 82	*Serratia marcescens*, *Serratia nematodiphila*	100.0
OTU.1714	82	No hits of at least 90% identity	83.33
OTU.1717	12	*Paenibacillus sacheonensis*	100.0
OTU.1724	82	No hits of at least 90% identity	84.1
OTU.1726	82	No hits of at least 90% identity	88.77
OTU.1727	12	*Salinirepens amamiensis*	94.35
OTU.1737	82	*Ferrimicrobium acidiphilum*	91.76
OTU.1741	82	*Cytophaga hutchinsonii ATCC 33406*	99.19

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.1743	12, 82	*Clostridium saccharobutylicum*	96.25
OTU.1786	82	No hits of at least 90% identity	84.57
OTU.1796	12	*Bdellovibrio bacteriovorus*	93.32
OTU.1818	82	*Roseivirga spongicola*	91.35
OTU.1824	82	*Solibius ginsengiterrae*	91.85
OTU.1832	12, 82	*Phyllobacterium bourgognense*, *Phyllobacterium brassicacearum*, *Phyllobacterium sp. PEPV15*, *Phyllobacterium trifolii*, *Phyllobacterium myrsinacearum*	99.73
OTU.1836	82	No hits of at least 90% identity	89.12
OTU.1838	82	*Singulisphaera rosea*	90.43
OTU.1840	82	No hits of at least 90% identity	88.68
OTU.1842	82	*Adhaeribacter aquaticus*	90.76
OTU.1857	82	*Roseivirga spongicola*	93.48
OTU.1873	82	No hits of at least 90% identity	80.06
OTU.1877	12	*Stenotrophomonas terrae*	100.0
OTU.1892	82	*Halioglobus pacificus*	91.2
OTU.1897	82	*Fluviicola taffensis*	93.82
OTU.1919	82	No hits of at least 90% identity	89.13
OTU.1929	82	*Chitinophaga niastensis*, *Chitinophaga niabensis*	96.76
OTU.1945	82	*Ohtaekwangia koreensis*	90.59
OTU.1951	82	*Prosthecobacter dejongeii*, *Prosthecobacter debontii*	96.52
OTU.1952	82	No hits of at least 90% identity	87.47
OTU.1956	82	No hits of at least 90% identity	88.8
OTU.1958	82	*Legionella pneumophila subsp. pneumophila str. Philadelphia 1*, *Legionella anisa*, *Legionella pneumophila subsp. pascullei*	99.3
OTU.1974	82	*Solitalea canadensis*	100.0
OTU.1975	12	*Flavobacterium sp. THG 01*	94.61
OTU.1982	82	*Bryobacter aggregatus*	93.28
OTU.1986	12, 82	*Isosphaera-like str. OJF2*	93.9
OTU.1992	12, 82	*Streptomyces viridosporus*	99.2
OTU.1995	12	*Pseudoduganella violaceinigra*	99.46
OTU.1999	12, 82	*Aurantimonas sp. L9-753*	99.2
OTU.2018	12, 82	*Cellvibrio gandavensis*	98.12

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.2026	12	No hits of at least 90% identity	82.31
OTU.2028	82	No hits of at least 90% identity	89.49
OTU.2067	82	*Sphingobacteria bacterium RYG*	92.45
OTU.2069	82	*Ferruginibacter alkalilentus*	94.91
OTU.2094	12, 82	No hits of at least 90% identity	88.86
OTU.2098	12	*Paenibacillus larvae subsp. larvae*	94.86
OTU.2100	12	*Sphingobacterium composti Ten et al. 2007*	94.07
OTU.2101	82	No hits of at least 90% identity	89.84
OTU.2132	82	*Ferruginibacter lapsinanis*	96.5
OTU.2138	12, 82	*Fluviicola taffensis*	98.92
OTU.2144	82	*Asticcacaulis benevestitus*	98.92
OTU.2148	12, 82	*Solibius ginsengiterrae*	91.6
OTU.2152	12	No hits of at least 90% identity	88.47
OTU.2153	82	No hits of at least 90% identity	77.21
OTU.2157	12, 82	*Sphingobium rhizovicinum*	100.0
OTU.2166	82	No hits of at least 90% identity	86.02
OTU.2200	82	No hits of at least 90% identity	89.84
OTU.2208	12, 82	*Mucilaginibacter sp. ANJLI2*	99.46
OTU.2213	82	*Singulisphaera rosea*	92.0
OTU.2216	12, 82	*Chitinophaga niabensis*	91.01
OTU.2220	82	No hits of at least 90% identity	89.54
OTU.2222	82	*Gemmata obscuriglobus*	94.39
OTU.2239	82	*Adhaeribacter aerophilus*	93.19
OTU.2276	82	*Singulisphaera rosea*	93.87
OTU.2277	12, 82	*Camelimonas lactis*	100.0
OTU.2279	82	No hits of at least 90% identity	79.2
OTU.2281	82	*Byssovorax cruenta*	94.12
OTU.2282	82	*Caedibacter caryophilus*	92.18
OTU.2287	12	No hits of at least 90% identity	88.0
OTU.2288	82	*Phenylobacterium lituiforme*	96.24
OTU.2294	82	*Dongia mobilis*	97.86
OTU.2301	82	*Pseudoxanthomonas mexicana*	100.0
OTU.2329	82	*Mucilaginibacter paludis*	99.19
OTU.2331	82	*Lysinimicrobium mangrovi*, *Demequina aestuarii*	98.93

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.2354	82	*Methylovorus mays*, *Methylovorus glucosotrophus*, *Methylovorus menthalis*	98.66
OTU.2381	82	*Bryobacter aggregatus*	93.28
OTU.2383	82	No hits of at least 90% identity	89.54
OTU.2393	82	*Alkanibacter difficilis*	93.09
OTU.2405	82	No hits of at least 90% identity	85.11
OTU.2411	12, 82	*Dyadobacter sp. BZ26*	100.0
OTU.2420	82	No hits of at least 90% identity	89.7
OTU.2446	82	No hits of at least 90% identity	85.95
OTU.2450	82	No hits of at least 90% identity	86.9
OTU.2463	82	*Roseomonas sp. enrichment culture clone 03SU06-B1*, *Roseomonas stagni*	96.71
OTU.2478	82	*Prosthecobacter fluviatilis*	99.47
OTU.2482	12	*Paenibacillus castaneae*	99.46
OTU.2489	82	No hits of at least 90% identity	85.07
OTU.2497	82	No hits of at least 90% identity	84.76
OTU.2519	82	*Anaeromyxobacter dehalogenans*	90.19
OTU.2524	12	*Acinetobacter johnsonii*	100.0
OTU.2526	82	*Terrimonas sp. M-8*, *Terrimonas sp. RIB1-6*	97.3
OTU.2533	82	*Legionella sp. LegA*	97.59
OTU.2539	82	*Planctomyces maris*	90.32
OTU.2541	82	No hits of at least 90% identity	88.27
OTU.2548	82	No hits of at least 90% identity	86.84
OTU.2553	82	No hits of at least 90% identity	88.0
OTU.2565	82	*Caedibacter caryophilus*	91.11
OTU.2576	82	No hits of at least 90% identity	88.27
OTU.2584	82	*Flavihumibacter petaseus*	100.0
OTU.2590	82	No hits of at least 90% identity	83.52
OTU.2594	82	*Vampirovibrio chlorellavorus*	93.78
OTU.2611	82	No hits of at least 90% identity	85.91
OTU.2619	82	*Isosphaera-like str. OJF2*	92.59
OTU.2622	82	No hits of at least 90% identity	79.51
OTU.2623	12, 82	*Sphingomonas insulae*	97.86
OTU.2624	82	No hits of at least 90% identity	87.16
OTU.2654	82	*Kaistia sp. 5YN7-3*, *Kaistia sp. B6-12*	96.77

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.2656	82	No hits of at least 90% identity	89.04
OTU.2658	82	*Thiohalobacter thiocyanaticus*	92.78
OTU.2660	82	No hits of at least 90% identity	89.59
OTU.2669	82	*Singulisphaera acidiphila*	93.33
OTU.2671	82	No hits of at least 90% identity	82.62
OTU.2675	82	*Sphingomonas trueperi*, *Sphingomonas pituitosa*, *Sphingomonas sp. C16y*	96.26
OTU.2701	12, 82	*Paenibacillus agaridevorans*	98.93
OTU.2708	82	No hits of at least 90% identity	87.8
OTU.2714	12, 82	*Flavobacterium pectinovorum*, *Flavobacterium chungnamense*	97.27
OTU.2737	12, 82	*Agromyces sp. NIO-1018*, *Agromyces sp. MJ21*	100.0
OTU.2738	12	*Pseudomonas rhizosphaerae*, *Pseudomonas abietaniphila*	100.0
OTU.2739	82	*Zavarzinella formosa*	92.49
OTU.2741	82	No hits of at least 90% identity	79.84
OTU.2759	82	No hits of at least 90% identity	83.73
OTU.2769	82	No hits of at least 90% identity	84.88
OTU.2770	82	No hits of at least 90% identity	86.06
OTU.2778	82	No hits of at least 90% identity	88.8
OTU.2780	82	*Fimbriimonas ginsengisoli Gsoil 348*	96.27
OTU.2788	82	*Singulisphaera rosea*	94.13
OTU.2791	82	No hits of at least 90% identity	87.5
OTU.2794	82	*Ohtaekwangia koreensis*	95.41
OTU.2821	82	No hits of at least 90% identity	88.95
OTU.2828	82	*Sphingopyxis taejonensis*	100.0
OTU.2833	82	*Rhizomicrobium palustre*, *Rhizobiales bacterium Mfc52*	91.69
OTU.2865	82	*Rhizomicrobium palustre*	93.01
OTU.2885	12	*Chitinophaga sancti*	94.28
OTU.2895	82	*Verrucomicrobiaceae bacterium DC2a-G7*	99.46
OTU.2926	82	No hits of at least 90% identity	88.62
OTU.2932	82	*Sediminibacterium salmoneum*	91.6
OTU.2943	82	*Afipia massiliensis*	97.58
OTU.2948	12, 82	*Variovorax paradoxus*, *Xenophilus aerolatus*	98.92
OTU.2968	82	*Opitutus terrae*	92.78

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.2978	82	No hits of at least 90% identity	86.15
OTU.2996	12, 82	*Luteolibacter sp. CCTCC AB 2010415*	97.06
OTU.3033	82	*Nannocystis pusilla*	100.0
OTU.3040	12	*Enterococcus saccharolyticus*, *Enterococcus casseliflavus*, *Enterococcus gallinarum*	100.0
OTU.3050	82	*Sulfuricella denitrificans*	92.72
OTU.3061	12, 82	*Pigmentiphaga litoralis*	100.0
OTU.3068	12, 82	*Promicromonospora thailandica*	99.47
OTU.3071	82	No hits of at least 90% identity	88.5
OTU.3072	82	*Chitinophaga niabensis*	90.49
OTU.3081	82	*Hymenobacter sp. OR362-8*	97.03
OTU.3082	12	*Kineococcus radiotolerans*, *Kineococcus sp. RP-B16*	100.0
OTU.3094	12, 82	*Azospirillum melinis*	99.73
OTU.3105	82	*Terrimonas lutea*	94.86
OTU.3106	12, 82	*Mucilaginibacter sp. BDR-9*	98.92
OTU.3116	82	*Chelatococcus daeguensis*, *Rhizobium sp. HT4*	94.35
OTU.3119	82	No hits of at least 90% identity	87.47
OTU.3121	82	No hits of at least 90% identity	86.12
OTU.3133	12	*Brevibacillus ginsengisoli*	100.0
OTU.3135	12, 82	*Bdellovibrio bacteriovorus*	93.6
OTU.3147	82	*Legionella shakespearei*	95.72
OTU.3148	12	*Epilithonimonas lactis*	98.37
OTU.3149	82	No hits of at least 90% identity	81.96
OTU.3160	82	No hits of at least 90% identity	89.87
OTU.3208	12	*Novosphingobium sp. LL02*, *Novosphingobium hassiacum*, *Novosphingobium aromaticivorans DSM 12444*	97.59
OTU.3226	12	*Sphingobacterium bambusae*	98.92
OTU.3230	82	*Isosphaera-like str. OJF2*	92.59
OTU.3255	82	*Verrucomicrobium spinosum*	97.86
OTU.3274	82	No hits of at least 90% identity	81.12
OTU.3279	82	*Phaselicystis flava*	90.11
OTU.3282	82	*Sediminibacterium salmoneum*	95.14
OTU.3303	82	*Luteolibacter sp. CCTCC AB 2010415*	91.76
OTU.3313	82	*Methylococcus capsulatus*	90.13

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.3315	12	*Sphingobacterium kitahiroshimense*, *Sphingobacterium anhuiense*, *Sphingobacterium faecium*	100.0
OTU.3343	82	*Reyranella massiliensis*	96.25
OTU.3345	82	No hits of at least 90% identity	88.14
OTU.3368	82	*Aeromicrobium ponti*	98.66
OTU.3373	12, 82	*Skermanella aerolata*	99.2
OTU.3415	82	No hits of at least 90% identity	89.63
OTU.3416	12	*Paenibacillus vulneris*	96.78
OTU.3425	82	No hits of at least 90% identity	89.52
OTU.3432	12	*Duganella sp. T54*, *Duganella zoogloeoides*	98.66
OTU.3454	82	*Legionella quinlivanii*	96.52
OTU.3469	82	*Legionella shakespearei*	97.07
OTU.3479	12	*Chryseobacterium anthropi*	98.38
OTU.3481	82	*Frankia sp. S9-650*	95.2
OTU.3509	12	*Massilia timonae*	98.39
OTU.3512	82	*Rickettsia sibirica*, *Rickettsia rickettsii*, *Rickettsia akari (agent of rickettsialpox)*	90.32
OTU.3515	82	*Dyadobacter ginsengisoli*	96.76
OTU.3522	12	*Pantoea eucalypti*, *Pantoea wallisii*, *Pantoea vagans*, *Pantoea agglomerans*	97.86
OTU.3540	12	No hits of at least 90% identity	88.77
OTU.3553	12	*Acidovorax sp. NF1078*	98.36
OTU.3558	82	*Paucibacter toxinivorans*	98.39
OTU.3562	82	*Solibius ginsengiterrae*	92.74
OTU.3573	82	No hits of at least 90% identity	87.7
OTU.3579	82	*Terrimonas sp. M-8*	97.57
OTU.3601	82	*Gluconacetobacter johannae*, *Gluconacetobacter azotocaptans*	95.17
OTU.3606	82	*Ilumatobacter fluminis*	93.35
OTU.3630	12	*Saccharibacillus kuerlensis*	100.0
OTU.3666	82	*Legionella cincinnatiensis*, *Legionella longbeachae*	96.52
OTU.3676	12, 82	*Chitinophaga ginsengisegetis*	100.0
OTU.3723	12	*Flavobacterium sp. DS-12*	97.03
OTU.3745	82	No hits of at least 90% identity	84.31
OTU.3748	82	No hits of at least 90% identity	89.54
OTU.3776	12	*Chryseobacterium ureilyticum*	98.92

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.3844	82	*Luteolibacter sp. CCTCC AB 2010415*	96.27
OTU.3845	82	No hits of at least 90% identity	87.19
OTU.3852	82	*Arcticibacter svalbardensis MN12-7*	90.03
OTU.3865	82	No hits of at least 90% identity	85.09
OTU.3873	82	*Chondromyces robustus*	92.02
OTU.3882	82	*Legionella pneumophila subsp. fraseri*	94.12
OTU.3891	82	*Ferrovibrio denitrificans*	91.44
OTU.3898	82	*Legionella cincinnatiensis*	96.53
OTU.3910	12, 82	*Flavobacterium caeni*, *Flavobacterium sp. R-HLS-17*	95.08
OTU.3932	12, 82	*Herbaspirillum rhizosphaerae*, *Herbaspirillum hiltneri*, *Herbaspirillum autotrophicum*	97.58
OTU.3954	12, 82	*Paucimonas lemoignei*	97.58
OTU.3986	82	*Hyalangium minutum*, *Cystobacter gracilis*	97.86
OTU.3989	12	*Labrys methylaminiphilus*	99.73
OTU.4052	82	No hits of at least 90% identity	81.43
OTU.4067	82	*Phenylobacterium lituiforme*	97.55
OTU.4074	82	*Cytophaga hutchinsonii ATCC 33406*	91.64
OTU.4124	82	*Geminicoccus roseus*	97.31
OTU.4127	12	*Devosia subaequoris*	97.31
OTU.4147	12	*Ornithinibacter aureus*	99.2
OTU.4151	12, 82	*Singulisphaera rosea*	94.13
OTU.4166	82	*Leucobacter sp. NAL101*, *Leucobacter tardus*, *Leucobacter alluvii*, *Leucobacter chromiiresistens JG 31*	98.67
OTU.4167	12	*Paenibacillus pectinilyticus*	95.69
OTU.4168	82	No hits of at least 90% identity	86.35
OTU.4182	82	*Cystobacter armeniaca*, *Cystobacter miniatus*	95.14
OTU.4188	82	*Sphingomonas japonica*	95.98
OTU.4216	82	*Mesorhizobium albiziae*	98.39
OTU.4222	82	No hits of at least 90% identity	87.81
OTU.4234	82	*Ohtaekwangia koreensis*	93.51
OTU.4238	82	No hits of at least 90% identity	87.11
OTU.4249	82	*Cytophaga hutchinsonii ATCC 33406*, *Adhaeribacter aquaticus*	91.08
OTU.4271	82	*Afipia felis (cat scratch disease bacillus)*, *Oligotropha carboxidovorans*	97.33

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.4275	82	*Hydrotalea flava*	91.89
OTU.4393	82	No hits of at least 90% identity	86.36
OTU.4403	82	No hits of at least 90% identity	88.24
OTU.4426	82	No hits of at least 90% identity	86.52
OTU.4435	82	*Sphingomonas jaspsi*, *Kaistobacter terrae*	96.0
OTU.4440	82	No hits of at least 90% identity	88.86
OTU.4442	12	*Dyadobacter fermentans*	97.3
OTU.4485	82	*Hydrotalea flava*	95.37
OTU.4498	82	*Legionella drancourtii*, *Legionella lytica*, *Legionella sp.*	97.87
OTU.4502	82	*Caulobacter fusiformis*	94.09
OTU.4520	82	*Nubsella zeaxanthinifaciens*, *Pedobacter rhizospharae*	96.76
OTU.4524	12, 82	*Sphingomonas asaccharolytica*, *Sphingomonas sp. S8-3*	98.39
OTU.4576	82	*Luteolibacter sp. E100*	95.72
OTU.4588	82	No hits of at least 90% identity	85.64
OTU.4593	82	*Devosia albogilva*	94.92
OTU.4599	12	*Clostridium argentinense*	94.39
OTU.4620	12, 82	*Chitinophaga arvensicola*	93.53
OTU.4652	82	No hits of at least 90% identity	88.58
OTU.4688	82	*Sphingomonas japonica*	95.98
OTU.4703	12, 82	*Sphingobium rhizovicinum*	96.78
OTU.4769	12, 82	No hits of at least 90% identity	89.04
OTU.4776	12	*Lentzea waywayandensis*, *Lentzea flaviverrucosa*	99.73
OTU.4782	12	*Paenibacillus hodogayensis*	97.86
OTU.4783	82	*Rhodoblastus acidophilus*, *Rhodoblastus sphagnicola*	95.97
OTU.4804	82	No hits of at least 90% identity	87.06
OTU.4855	82	*Acidisphaera rubrifaciens*, *Roseomonas vinacea*	95.17
OTU.4883	82	*Adhaeribacter aerolatus*	92.08
OTU.4905	82	*Ohtaekwangia kribbensis*	94.07
OTU.5024	82	*Pirellula staleyi DSM 6068*	90.03
OTU.5046	82	No hits of at least 90% identity	87.9
OTU.5050	82	*Cupriavidus sp. CPDB6*	94.93
OTU.5056	12, 82	*Pedobacter koreensis*	97.57

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.5095	82	*Sphingobacteria bacterium RYG*	94.61
OTU.5124	12	*Chryseobacterium daeguense*	98.65
OTU.5172	82	*Porticoccus litoralis*	91.71
OTU.5180	82	*Phenylobacterium lituiforme*	98.12
OTU.5188	82	No hits of at least 90% identity	89.39
OTU.5235	82	*Phaselicystis flava*	90.79
OTU.5278	12, 82	*Paenibacillus lautus*	97.57
OTU.5289	82	*Singulisphaera rosea*	95.73
OTU.5296	82	*Verrucomicrobium spinosum*	90.19
OTU.5298	82	No hits of at least 90% identity	84.97
OTU.5310	82	*Thiobacillus aquaesulis*	91.71
OTU.5333	82	*Kaistia sp. B1-1*	99.73
OTU.5441	12, 82	*Rhodopseudomonas sp. R-45977*	98.66
OTU.5476	82	*Rhizomicrobium palustre*	92.39
OTU.5485	82	*Singulisphaera rosea*	91.73
OTU.5650	12	*Deinococcus gobiensis*	98.65
OTU.5660	82	No hits of at least 90% identity	87.6
OTU.5677	12	*Burkholderia hospita*	98.39
OTU.5705	82	*Chitinophaga ginsengisegetis*	90.22
OTU.5727	12, 82	*Paenibacillus rigui*, *Paenibacillus vulneris*	97.59
OTU.5758	82	*Steroidobacter denitrificans*, *Nitrosococcus oceani ATCC 19707*	90.11
OTU.5798	82	*Sphingomonas sp. YC6722*	99.73
OTU.5801	82	*Sphingobacteria bacterium RYG*, *Ohtaekwangia koreensis*	90.57
OTU.5812	82	*Mesorhizobium chacoense*	98.12
OTU.5815	12	*Singulisphaera rosea*	93.6
OTU.5818	82	*Schlesneria paludicola*	97.85
OTU.5861	82	No hits of at least 90% identity	83.56
OTU.5881	12	*Microvirga guangxiensis*	97.55
OTU.5887	12	*Geodermatophilus sp. YIM 75980*	96.0
OTU.5906	12	*Paenibacillus rhizosphaerae*, *Paenibacillus favisporus*, *Paenibacillus illinoisensis*, *Paenibacillus cineris*, *Paenibacillus cellulositrophicus*	95.41
OTU.5920	82	*Legionella pneumophila subsp. pneumophila str. Philadelphia 1*, *Legionella pneumophila subsp. pascullei*	97.33

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.5922	12	*Hymenobacter sp. DCY57*	98.38
OTU.5942	82	*Actinoplanes liguriensis*	99.73
OTU.5951	82	*Chitinophaga arvensicola*	92.7
OTU.6004	82	*Devosia limi*	98.92
OTU.6008	12	*Delftia tsuruhatensis*, *Delftia lacustris*	98.12
OTU.6028	82	No hits of at least 90% identity	87.13
OTU.6097	82	*Chitinophaga niabensis*	97.03
OTU.6141	12	*Hymenobacter elongatus*	98.11
OTU.6176	82	*Erythrobacter gaetbuli*	97.86
OTU.6180	12, 82	*Duganella sp. Sac-41*	97.85
OTU.6190	12	*Oxalicibacterium horti*	99.18
OTU.6238	82	*Ilumatobacter fluminis*	93.07
OTU.6263	82	*Isosphaera-like str. OJF2*	93.12
OTU.6279	82	*Roseomonas sp. enrichment culture clone 03SU5-P1*	95.71
OTU.6328	12, 82	*Pseudomonas brassicacearum subsp. neoaurantiaca*, *Pseudomonas frederiksbergensis*	99.73
OTU.6339	82	*Mesorhizobium amorphae*, *Mesorhizobium opportunistum WSM2075*, *Mesorhizobium silamurunense*	97.55
OTU.6391	82	No hits of at least 90% identity	88.95
OTU.6395	82	*Nocardioides islandensis*	98.1
OTU.6410	82	*Adhaeribacter terreus*	90.44
OTU.6427	82	*Singulisphaera rosea*	93.73
OTU.6431	12	*Massilia sp. D5*	97.31
OTU.6436	12	*Microlunatus ginsengisoli*	99.46
OTU.6446	12, 82	*Diaphorobacter nitroreducens*, *Comamonas terrigena*, *Acidovorax caeni*	97.58
OTU.6477	12	*Edaphobacter aggregans*	97.59
OTU.6478	82	*Schlesneria paludicola*	98.01
OTU.6487	12	*Glaciimonas sp. A2-57*, *Glaciimonas immobilis*, *Oxalicibacterium faecigallinarum*, *Oxalicibacterium horti*	97.31
OTU.6495	12, 82	*Rhizobiales bacterium WSM3557*	98.92
OTU.6508	82	*Niastella populi*	96.49
OTU.6510	12, 82	*Rhizobium mesosinicum*, *Rhizobium alamii*, *Arthrobacter viscosus*	98.37
OTU.6514	82	No hits of at least 90% identity	88.92

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.6542	82	No hits of at least 90% identity	88.12
OTU.6585	12, 82	*Streptomyces spp.*	98.38
OTU.6596	82	No hits of at least 90% identity	83.11
OTU.6599	12	*Methylophilus methylotrophus*, *Methylotenera versatilis 301*, *Methylotenera mobilis*	98.13
OTU.6633	12, 82	*Burkholderia zhejiangensis*	97.86
OTU.6640	12, 82	*Adhaeribacter terreus*	98.05
OTU.6704	12	*Chryseobacterium sp. THG 15*, *Chryseobacterium formosense*	98.37
OTU.6735	82	*Brevundimonas staleyi*	98.12
OTU.6749	82	*Sediminibacterium salmoneum*	95.95
OTU.6751	12	*Kaistobacter sp. Gsoil 634*	99.17
OTU.6764	12, 82	*Paenibacillus aestuarii*	96.51
OTU.6801	12	*Bacillus bataviensis*, *Bacillus novalis*, *Bacillus drentensis*, *Bacillus vireti*, *Bhargavaea ginsengi*, *Bacillus soli*	97.33
OTU.6822	12	*Sphingomonas changbaiensis*	99.16
OTU.6826	12	*Telluria mixta*	97.58
OTU.6838	12	No hits of at least 90% identity	82.56
OTU.6848	12, 82	*Rhizobium skierniewicense*	98.12
OTU.6852	12	*Chryseobacterium jejuense*	96.45
OTU.6868	12, 82	*Caulobacter vibrioides*, *Caulobacter segnis*	98.66
OTU.6876	82	*Thiohalophilus thiocyanatoxydans*	92.18
OTU.6898	82	*Arenimonas malthae*	96.77
OTU.6900	12	*Alicyclobacillus disulfidooxidans*, *Alicyclobacillus contaminans*	94.89
OTU.6947	12	*Gaiella occulta*	92.29
OTU.6979	12	*Rhizobium larrymoorei*	97.28
OTU.6993	82	No hits of at least 90% identity	82.8
OTU.7027	82	No hits of at least 90% identity	86.91
OTU.7041	12, 82	*Altererythrobacter sp. H32*, *Altererythrobacter sp. MSW-14*	94.09
OTU.7064	12, 82	*Stenotrophomonas pavanii*, *Stenotrophomonas maltophilia*	97.3
OTU.7074	12	No hits of at least 90% identity	89.67
OTU.7077	12	*Streptomyces mutomycini*, *Streptomyces atroolivaceus*, *Streptomyces finlayi*, *Streptomyces clavifer*	97.86

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.7083	82	No hits of at least 90% identity	87.06
OTU.7092	12	*Novosphingobium hassiacum*	97.58
OTU.7106	82	*Devosia neptuniae*	99.19
OTU.7112	12	*Yokenella spp.*, *Pantoea spp.*, *Kluyvera spp.*, *Klebsiella spp.*, *Erwinia spp.*, *Enterobacter spp.*, *Citrobacter spp.*, *Cedecea spp.*	94.39
OTU.7117	82	No hits of at least 90% identity	88.53
OTU.7143	12	*Thermoleophilum minutum*, *Pseudomonas thivervalensis*, *Pseudomonas lini*	98.38
OTU.7167	12	*Sphingomonas sp. BH3*	95.69
OTU.7208	12	*Nubsella zeaxanthinifaciens*	98.33
OTU.7299	12	*Dyella sp. ATSB10*, *Dyella ginsengisoli*	98.38
OTU.7309	82	*Niastella sp. JCN-23*	95.1
OTU.7313	12	*Rhodococcus qingshengii*, *Rhodococcus erythropolis*, *Rhodococcus sp. djl-6-2*, *Nocardia coeliaca*	98.38
OTU.7319	82	*Chitinophaga niabensis*	95.41
OTU.7377	82	No hits of at least 90% identity	83.82
OTU.7431	82	*Luteimonas marina*, *Thermomonas dokdonensis*, *Luteimonas lutimaris*	97.33
OTU.7453	12	No hits of at least 90% identity	83.6
OTU.7454	12, 82	*Pedobacter boryungensis*	99.19
OTU.7457	82	*Reyranella massiliensis*	95.41
OTU.7461	82	*Sphingomonas fennica*	98.39
OTU.7463	82	*Hydrotalea flava*, *Chitinophaga arvensicola*	92.33
OTU.7538	82	*Aquabacterium parvum*, *Aquabacterium commune*	97.29
OTU.7609	82	*Niastella sp. JCN-23*, *Niastella populi*	95.68
OTU.7610	12, 82	*Schlesneria paludicola*	93.3
OTU.7616	12, 82	*Sphingomonas yunnanensis*	97.86
OTU.7631	82	*Rhizomicrobium palustre*	92.2
OTU.7646	12, 82	*Novosphingobium hassiacum*	97.32
OTU.7650	82	No hits of at least 90% identity	86.4
OTU.7652	82	*Porphyrobacter tepidarius*	96.51
OTU.7664	82	*Sphingobacteria bacterium RYG*	95.42
OTU.7701	12	*Rhodoplanes elegans*	96.19

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.7731	82	*Amnibacterium kyonggiense*	98.13
OTU.7735	12	*Paenibacillus sp. WPCB018*	99.46
OTU.7764	82	*Sporichthya polymorpha*	95.73
OTU.7779	12, 82	*Luteimonas sp. KMM 9005*	98.07
OTU.7786	12, 82	*Stenotrophomonas rhizophila*	98.65
OTU.7839	82	*Opitutus terrae*	91.64
OTU.7922	82	No hits of at least 90% identity	88.56
OTU.7943	12, 82	*Pseudomonas pseudoalcaligenes*, *Pseudomonas oleovorans subsp. lubricantis*, *Pseudomonas alcaliphila*, *Pseudomonas composti*, *Pseudomonas toyotomiensis*	98.93
OTU.7950	12	*Massilia namucuonensis*	98.1
OTU.7978	12	*Methylobacterium goesingense*, *Methylobacterium marchantiae*, *Methylobacterium sp. F3.2*	98.91
OTU.7995	12, 82	*Roseomonas aquatica*, *Belnapia moabensis*	96.25
OTU.8028	12	No hits of at least 90% identity	88.77
OTU.8077	12, 82	*Adhaeribacter terreus*	97.03
OTU.8085	12	*Jeotgalibacillus sp. WS 4628*	98.13
OTU.8117	12	*Luteimonas lutimaris*	96.53
OTU.8228	82	*Sphingobacteria bacterium RYG*	92.2
OTU.8238	82	*Sphingobacteria bacterium RYG*	91.94
OTU.8259	82	*Rhodoplanes roseus*	96.2
OTU.8266	12, 82	*Arthrobacter koreensis*, *Arthrobacter citreus*, *Arthrobacter luteolus*	93.1
OTU.8270	82	No hits of at least 90% identity	86.68
OTU.8278	12, 82	*Isoptericola nanjingensis*, *Isoptericola hypogeus*, *Isoptericola variabilis*	99.73
OTU.8409	12, 82	*Acidovorax temperans*	98.91
OTU.8484	82	*Streptomyces aomiensis*	96.67
OTU.8620	12, 82	No hits of at least 90% identity	88.68
OTU.8633	82	*Caulobacter henricii*, *Brevundimonas-like sp. LMG 11050*, *Caulobacter sp.*	94.62
OTU.8661	12, 82	*Mucilaginibacter jinjuensis*	98.38
OTU.8678	82	No hits of at least 90% identity	85.03
OTU.8700	82	No hits of at least 90% identity	86.13
OTU.8710	12	*Pedobacter koreensis*	97.3

Supplementary Table 7 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID

[a] log_2 fold change greater than 1, adjusted P-value less than 0.10.

Supplementary Table 8: OTUs enriched in PyOM amended soil relative to control BLAST against Living Tree Project

OTU ID	Day of Response [a]	Top BLAST hits	BLAST %ID
OTU.3	82	*Arthrobacter spp.*	100.0
OTU.33	82	*Roseomonas aquatica*	98.13
OTU.39	82	*Thermomonas dokdonensis*	99.47
OTU.78	12, 82	*Oxalicibacterium flavum*	98.92
OTU.97	12	*Beijerinckia derxii subsp. venezuelae*, *Beijerinckia derxii subsp. derxii*, *Beijerinckia indica subsp. indica ATCC 9039*, *Beijerinckia indica subsp. lacticogenes*	98.12
OTU.118	82	*Flavobacterium beibuense*, *Flavobacterium sp. FCS-5*	98.11
OTU.141	82	*Achromobacter spanius*, *Achromobacter insolitus*	100.0
OTU.154	82	*Comamonas thiooxydans*, *Comamonas testosteroni*	99.73
OTU.166	82	*Niastella sp. JCN-23*	96.49
OTU.170	82	*Niastella sp. JCN-23*	99.73
OTU.184	82	*Adhaeribacter terreus*	98.11
OTU.271	82	*Bosea sp. R-46060*	100.0
OTU.287	12, 82	*Flavisolibacter ginsengisoli*	95.14
OTU.316	82	*Caulobacter henricii*	99.46
OTU.339	82	*Brevundimonas halotolerans*	99.73
OTU.357	82	*Ochrobactrum pseudogrignonense*	100.0
OTU.391	12, 82	*Flavisolibacter ginsengisoli*	95.68
OTU.402	82	*Brevundimonas vesicularis*, *Brevundimonas nasdae*	100.0
OTU.417	82	No hits of at least 90% identity	80.16
OTU.442	12, 82	*Rhodococcus wratislaviensis*	100.0
OTU.444	82	No hits of at least 90% identity	84.95
OTU.448	82	*Brevundimonas alba*	99.19
OTU.454	82	*Nocardioides hwasunensis*	100.0
OTU.455	82	*Methylobacterium rhodesianum*, *Methylobacterium populi*, *Methylobacterium zatmanii*	100.0
OTU.456	82	*Prosthecobacter fluviatilis*	90.64
OTU.527	82	No hits of at least 90% identity	80.8
OTU.534	82	*Methylobacterium aquaticum*	100.0

Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.535	12, 82	*Cupriavidus necator*, *Wautersia numazuensis*, *Cupriavidus basilensis*	100.0
OTU.542	82	*Gemmatimonas aurantiaca*	96.26
OTU.635	12, 82	*Sphingomonadaceae bacterium KMM 6042*	99.2
OTU.640	12, 82	*Rhodococcus jostii*	99.73
OTU.678	82	*Shinella granuli*, *Shinella zoogloeoides*	100.0
OTU.720	82	*Luteolibacter sp. CCTCC AB 2010415*	99.2
OTU.767	82	No hits of at least 90% identity	89.57
OTU.800	12	*Sediminibacterium salmoneum*	95.96
OTU.820	82	*Pedobacter sp. N7d-4*	100.0
OTU.873	12, 82	*Hymenobacter algoricola*	100.0
OTU.878	82	*Dongia mobilis*	93.33
OTU.888	82	No hits of at least 90% identity	87.67
OTU.893	12	*Flavisolibacter ginsengisoli*, *Sediminibacterium salmoneum*, *Niastella yeongjuensis*	93.53
OTU.909	82	No hits of at least 90% identity	89.25
OTU.924	82	No hits of at least 90% identity	88.56
OTU.932	82	*Georgfuchsia toluolica*	98.13
OTU.939	82	*Dyadobacter beijingensis*	97.57
OTU.1003	82	*Pedobacter glucosidilyticus DSM 23534*	98.65
OTU.1018	82	No hits of at least 90% identity	88.53
OTU.1045	82	*Rhodanobacter sp. DCY45*, *Rhodanobacter fulvus*	100.0
OTU.1062	12	*Ohtaekwangia koreensis*	93.51
OTU.1077	82	*Azospirillum rugosum*, *Skermanella xinjiangensis*	91.67
OTU.1090	82	*Ohtaekwangia koreensis*	94.61
OTU.1107	82	*Lysobacter sp. DCY21T*	99.2
OTU.1119	82	*Devosia crocina*, *Devosia riboflavina*	98.66
OTU.1133	82	*Pedobacter insulae*	98.11
OTU.1187	82	*Chitinophaga niabensis*	90.54
OTU.1191	82	No hits of at least 90% identity	89.63
OTU.1192	82	*Rhodococcus triatomae*	97.87
OTU.1195	82	*Segetibacter koreensis*	97.3
OTU.1208	82	*Bacteriovorax stolpii*	98.93
OTU.1226	12, 82	*Nocardiopsis alba*	100.0

Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.1253	82	No hits of at least 90% identity	84.8
OTU.1295	82	*Leifsonia poae*	99.2
OTU.1301	82	*Burkholderia sp. ATSB16*	94.39
OTU.1324	82	*Sphingomonas japonica*	98.37
OTU.1344	82	*Hymenobacter ocellatus*	97.3
OTU.1373	82	*Dyella marensis*, *Dyella terrae*, *Fulvimonas soli*, *Dokdonella sp. LM 2-5*	95.45
OTU.1374	82	No hits of at least 90% identity	89.01
OTU.1384	12	*Sphingomonas trueperi*, *Sphingomonas pituitosa*	96.78
OTU.1385	82	*Sphingopyxis panaciterrae*, *Sphingopyxis chilensis*	100.0
OTU.1389	82	*Arthrobacter crystallopoietes*	98.13
OTU.1425	82	No hits of at least 90% identity	89.54
OTU.1441	82	*Chitinophaga niabensis*	92.43
OTU.1442	82	*Gemmatimonas aurantiaca*	91.98
OTU.1448	82	No hits of at least 90% identity	87.97
OTU.1450	12	*Rhodococcus yunnanensis*, *Rhodococcus fascians*, *Rhodococcus kyotonensis*, *Rhodococcus cercidiphylli*, *Rhodococcus sp. C5(2010)*	100.0
OTU.1477	82	*Dyella koreensis*, *Dyella soli*	96.52
OTU.1485	82	No hits of at least 90% identity	89.01
OTU.1505	82	*Lacibacter cauensis*	98.92
OTU.1543	82	*Bryobacter aggregatus*	90.05
OTU.1544	82	*Armatimonas rosea*	92.0
OTU.1550	12, 82	*Roseomonas ludipueritiae*	98.39
OTU.1566	82	*Panacagrimonas perspica*	98.12
OTU.1576	82	*Delftia tsuruhatensis*, *Delftia lacustris*	98.66
OTU.1587	82	No hits of at least 90% identity	85.68
OTU.1616	82	No hits of at least 90% identity	84.8
OTU.1655	82	No hits of at least 90% identity	89.22
OTU.1667	82	No hits of at least 90% identity	84.17
OTU.1680	82	*Pseudomonas alcaligenes*	98.1
OTU.1698	82	*Hymenobacter gelipurpurascens*	100.0
OTU.1721	82	*Gemmatimonas aurantiaca*	93.3
OTU.1722	82	No hits of at least 90% identity	84.83

Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.1737	82	*Ferrimicrobium acidiphilum*	91.76
OTU.1753	82	*Wenxinia marina*	96.77
OTU.1773	82	No hits of at least 90% identity	87.84
OTU.1786	82	No hits of at least 90% identity	84.57
OTU.1789	82	No hits of at least 90% identity	82.43
OTU.1796	82	*Bdellovibrio bacteriovorus*	93.32
OTU.1809	82	*Anaeromyxobacter dehalogenans*	90.11
OTU.1824	82	*Solibius ginsengiterrae*	91.85
OTU.1835	82	No hits of at least 90% identity	88.38
OTU.1840	82	No hits of at least 90% identity	88.68
OTU.1869	82	No hits of at least 90% identity	79.6
OTU.1873	82	No hits of at least 90% identity	80.06
OTU.1892	82	*Halioglobus pacificus*	91.2
OTU.1897	82	*Fluviicola taffensis*	93.82
OTU.1909	82	*Conexibacter arvalis*	91.71
OTU.1919	82	No hits of at least 90% identity	89.13
OTU.1926	82	No hits of at least 90% identity	80.7
OTU.1928	82	No hits of at least 90% identity	88.77
OTU.1951	82	*Prosthecobacter dejongeii*, *Prosthecobacter debontii*	96.52
OTU.1960	82	*Bryobacter aggregatus*	91.13
OTU.1981	12, 82	*Undibacterium pigrum*, *Rugamonas rubra*	97.31
OTU.1985	82	*Magnetospira thiophila*	92.18
OTU.1999	82	*Aurantimonas sp. L9-753*	99.2
OTU.2003	82	*Aquicella siphonis*	95.16
OTU.2073	82	No hits of at least 90% identity	86.52
OTU.2091	82	*Fimbriimonas ginsengisoli Gsoil 348*	90.98
OTU.2094	82	No hits of at least 90% identity	88.86
OTU.2106	82	*Ferruginibacter alkalilentus*	94.86
OTU.2131	82	No hits of at least 90% identity	86.68
OTU.2148	82	*Solibius ginsengiterrae*	91.6
OTU.2153	82	No hits of at least 90% identity	77.21
OTU.2156	82	No hits of at least 90% identity	82.62
OTU.2159	82	No hits of at least 90% identity	86.58
OTU.2167	82	No hits of at least 90% identity	80.8
OTU.2182	82	*Flavobacterium beibuense*	97.03

Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.2236	82	*Amaricoccus macauensis*	91.2
OTU.2275	82	No hits of at least 90% identity	87.17
OTU.2278	82	*Catellibacterium nectariphilum*	98.39
OTU.2279	82	No hits of at least 90% identity	79.2
OTU.2293	82	*Adhaeribacter aquaticus*	95.16
OTU.2301	82	*Pseudoxanthomonas mexicana*	100.0
OTU.2310	82	*Niastella yeongjuensis*	93.19
OTU.2334	82	No hits of at least 90% identity	85.64
OTU.2352	82	*Byssovorax cruenta*	90.3
OTU.2391	82	*Luteolibacter sp. E100*	97.59
OTU.2410	82	*Solibius ginsengiterrae*	95.14
OTU.2442	82	*Thioprofundum hispidum*	95.21
OTU.2446	82	No hits of at least 90% identity	85.95
OTU.2463	82	*Roseomonas sp. enrichment culture clone 03SU6-F1*, *Roseomonas stagni*	96.51
OTU.2478	82	*Prosthecobacter fluviatilis*	99.47
OTU.2481	82	No hits of at least 90% identity	86.97
OTU.2489	82	No hits of at least 90% identity	85.07
OTU.2522	82	No hits of at least 90% identity	87.2
OTU.2554	82	*Solitalea canadensis*	91.87
OTU.2576	82	No hits of at least 90% identity	88.27
OTU.2601	82	No hits of at least 90% identity	86.1
OTU.2617	82	No hits of at least 90% identity	81.96
OTU.2621	12, 82	*Hoeflea phototrophica DFL-43*, *Hoeflea alexandrii*	96.77
OTU.2622	82	No hits of at least 90% identity	79.51
OTU.2634	82	*Gemmatimonas aurantiaca*	92.8
OTU.2640	82	No hits of at least 90% identity	86.38
OTU.2656	82	No hits of at least 90% identity	89.04
OTU.2660	82	No hits of at least 90% identity	89.59
OTU.2661	82	No hits of at least 90% identity	88.17
OTU.2667	82	No hits of at least 90% identity	88.47
OTU.2676	82	No hits of at least 90% identity	83.07
OTU.2706	82	*Chitinophaga ginsengisegetis*, *Niastella koreensis*	92.92
OTU.2708	12	No hits of at least 90% identity	87.8
OTU.2734	82	*Prosthecobacter fluviatilis*	95.99

Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.2769	82	No hits of at least 90% identity	84.88
OTU.2778	82	No hits of at least 90% identity	88.8
OTU.2847	82	No hits of at least 90% identity	87.73
OTU.2885	82	*Chitinophaga sancti*	94.28
OTU.2895	82	*Verrucomicrobiaceae bacterium DC2a-G7*	99.46
OTU.2932	82	*Sediminibacterium salmoneum*	91.6
OTU.2943	82	*Afipia massiliensis*	97.58
OTU.2948	82	*Variovorax paradoxus*, *Xenophilus aerolatus*	98.92
OTU.2955	82	*Gemmatimonas aurantiaca*	92.53
OTU.2969	82	No hits of at least 90% identity	79.89
OTU.2971	82	No hits of at least 90% identity	89.04
OTU.2985	82	No hits of at least 90% identity	86.36
OTU.2995	82	No hits of at least 90% identity	81.84
OTU.2996	82	*Luteolibacter sp. CCTCC AB 2010415*	97.06
OTU.3007	82	No hits of at least 90% identity	87.33
OTU.3061	82	*Pigmentiphaga litoralis*	100.0
OTU.3088	82	*Belnapia moabensis*	96.51
OTU.3097	82	*Nocardioides plantarum*	99.73
OTU.3116	82	*Chelatococcus daeguensis*, *Rhizobium sp. HT4*	94.35
OTU.3160	82	No hits of at least 90% identity	89.87
OTU.3201	82	No hits of at least 90% identity	89.95
OTU.3240	82	No hits of at least 90% identity	82.89
OTU.3274	82	No hits of at least 90% identity	81.12
OTU.3300	82	*Pirellula staleyi DSM 6068*	92.03
OTU.3373	82	*Skermanella aerolata*	99.2
OTU.3481	82	*Frankia sp. S9-650*	95.2
OTU.3523	82	No hits of at least 90% identity	78.44
OTU.3543	82	No hits of at least 90% identity	78.76
OTU.3564	82	*Roseomonas sp. enrichment culture clone 03SU16-27*, *Roseomonas stagni*	96.27
OTU.3565	82	*Rubellimicrobium mesophilum DSM 19309*	99.2
OTU.3666	82	*Legionella cincinnatiensis*, *Legionella longbeachae*	96.52
OTU.3771	82	No hits of at least 90% identity	81.5
OTU.3779	82	*Cystobacter badius*, *Cystobacter velatus*, *Cystobacter miniatus*	90.37

Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.3783	82	No hits of at least 90% identity	87.57
OTU.3823	82	*Hymenobacter ocellatus*	97.03
OTU.3865	82	No hits of at least 90% identity	85.09
OTU.3917	82	No hits of at least 90% identity	84.8
OTU.3920	82	No hits of at least 90% identity	85.52
OTU.3954	82	*Paucimonas lemoignei*	97.58
OTU.4092	82	No hits of at least 90% identity	82.66
OTU.4127	82	*Devosia subaequoris*	97.31
OTU.4225	82	*Flavisolibacter ginsengisoli*	95.42
OTU.4247	82	No hits of at least 90% identity	88.74
OTU.4271	82	*Afipia felis (cat scratch disease bacillus)*, *Oligotropha carboxidovorans*	97.33
OTU.4279	82	No hits of at least 90% identity	88.2
OTU.4312	82	No hits of at least 90% identity	85.68
OTU.4339	82	*Bdellovibrio bacteriovorus*	94.39
OTU.4418	82	No hits of at least 90% identity	83.91
OTU.4435	82	*Sphingomonas jaspsi*, *Kaistobacter terrae*	96.0
OTU.4597	82	No hits of at least 90% identity	85.94
OTU.4769	82	No hits of at least 90% identity	89.04
OTU.4808	12	*Amycolatopsis pigmentata*	99.73
OTU.4905	82	*Ohtaekwangia kribbensis*	94.07
OTU.5548	82	No hits of at least 90% identity	84.8
OTU.5667	82	*Skermanella xinjiangensis*	92.74
OTU.5678	82	*Segetibacter koreensis*	96.22
OTU.5685	82	No hits of at least 90% identity	88.68
OTU.5798	82	*Sphingomonas sp. YC6722*	99.73
OTU.6008	82	*Delftia tsuruhatensis*, *Delftia lacustris*	98.12
OTU.6190	12, 82	*Oxalicibacterium horti*	99.18
OTU.6205	82	No hits of at least 90% identity	82.21
OTU.6256	82	*Gemmatimonas aurantiaca*	93.55
OTU.6285	82	*Gemmatimonas aurantiaca*	92.25
OTU.6290	82	*Desulfomonile tiedjei*	90.03
OTU.6391	82	No hits of at least 90% identity	88.95
OTU.6407	82	No hits of at least 90% identity	86.29
OTU.6446	82	*Diaphorobacter nitroreducens*, *Comamonas terrigena*, *Acidovorax caeni*	97.58

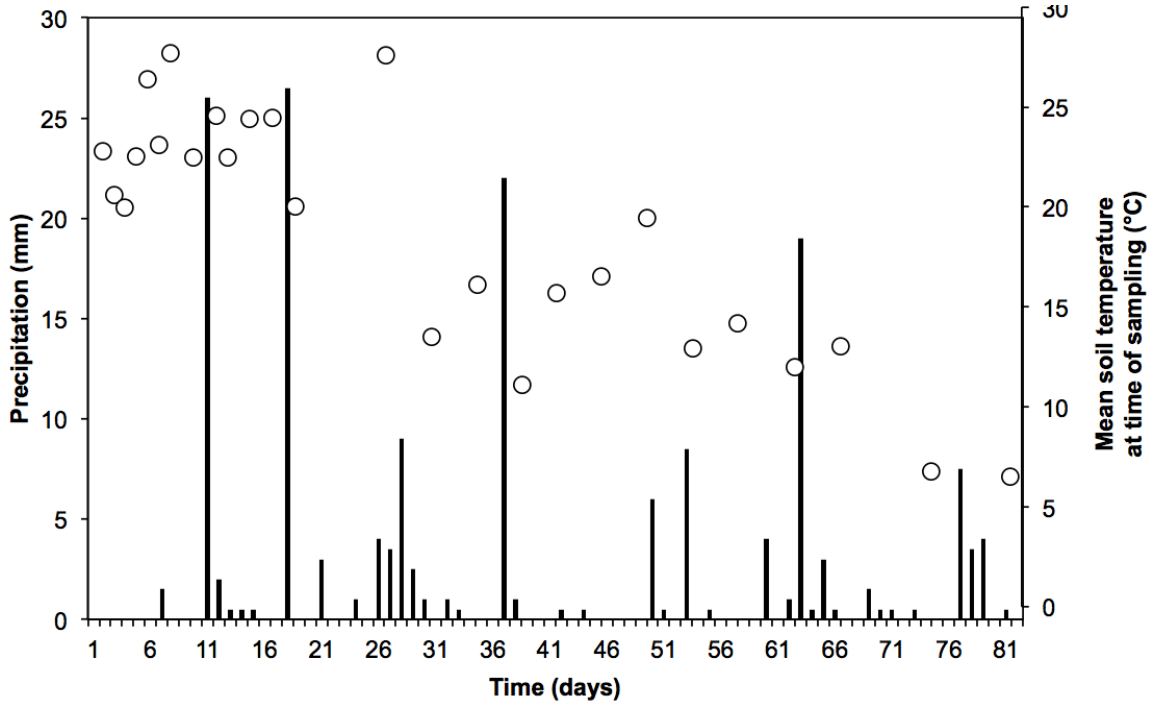
Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.6487	12	*Glaciimonas sp. A2-57*, *Glaciimonas immobilis*, *Oxalicibacterium faecigallinarum*, *Oxalicibacterium horti*	97.31
OTU.6495	82	*Rhizobiales bacterium WSM3557*	98.92
OTU.6601	82	*Terrimonas sp. M-8*	97.03
OTU.6640	82	*Adhaeribacter terreus*	98.05
OTU.6735	82	*Brevundimonas staleyi*	98.12
OTU.6822	12	*Sphingomonas changbaiensis*	99.16
OTU.6848	82	*Rhizobium skierniewicense*	98.12
OTU.6868	82	*Caulobacter vibrioides*, *Caulobacter segnis*	98.66
OTU.6898	82	*Arenimonas malthae*	96.77
OTU.7041	82	*Altererythrobacter sp. H32*, *Altererythrobacter sp. MSW-14*	94.09
OTU.7071	82	*Rhodoplanes piscinae*	97.04
OTU.7083	82	No hits of at least 90% identity	87.06
OTU.7092	12	*Novosphingobium hassiacum*	97.58
OTU.7168	82	No hits of at least 90% identity	89.92
OTU.7181	82	No hits of at least 90% identity	85.91
OTU.7216	82	*Yonghaparkia alkaliphila*	100.0
OTU.7313	12, 82	*Rhodococcus qingshengii*, *Rhodococcus erythropolis*, *Rhodococcus sp. djl-6-2*, *Nocardia coeliaca*	98.38
OTU.7431	82	*Luteimonas marina*, *Thermomonas dokdonensis*, *Luteimonas lutimaris*	97.33
OTU.7454	82	*Pedobacter boryungensis*	99.19
OTU.7476	82	No hits of at least 90% identity	84.04
OTU.7616	82	*Sphingomonas yunnanensis*	97.86
OTU.7646	82	*Novosphingobium hassiacum*	97.32
OTU.7762	12, 82	*Filimonas lacunae*	94.59
OTU.7779	12, 82	*Luteimonas sp. KMM 9005*	98.07
OTU.7786	82	*Stenotrophomonas rhizophila*	98.65
OTU.7826	12	*Bacillus patagoniensis*	99.73
OTU.7995	12, 82	*Roseomonas aquatica*, *Belnapia moabensis*	96.25
OTU.8221	12	No hits of at least 90% identity	85.6
OTU.8259	82	*Rhodoplanes roseus*	96.2

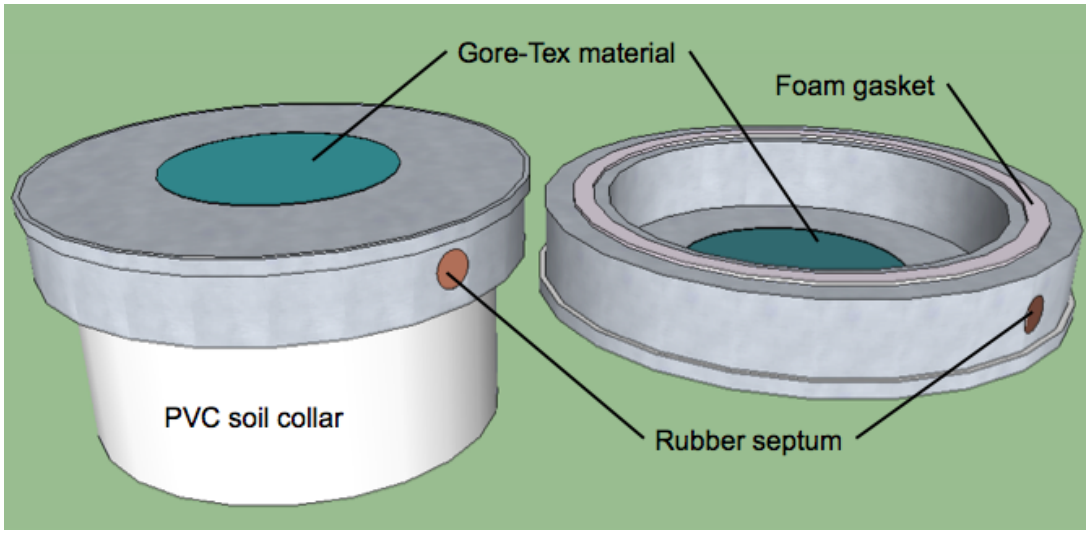
Supplementary Table 8 – continued from previous page

OTU ID	Day of Response [b]	Top BLAST hits	BLAST %ID
OTU.8277	82	*Gordonia neofelifaecis NRRL B-59395*, *Gordonia cholesterolivorans*, *Gordonia malaquae*	100.0
OTU.8409	82	*Acidovorax temperans*	98.91
OTU.8620	82	No hits of at least 90% identity	88.68
OTU.8700	82	No hits of at least 90% identity	86.13
OTU.8710	82	*Pedobacter koreensis*	97.3
OTU.8712	82	*Limnobacter thiooxidans*	93.58

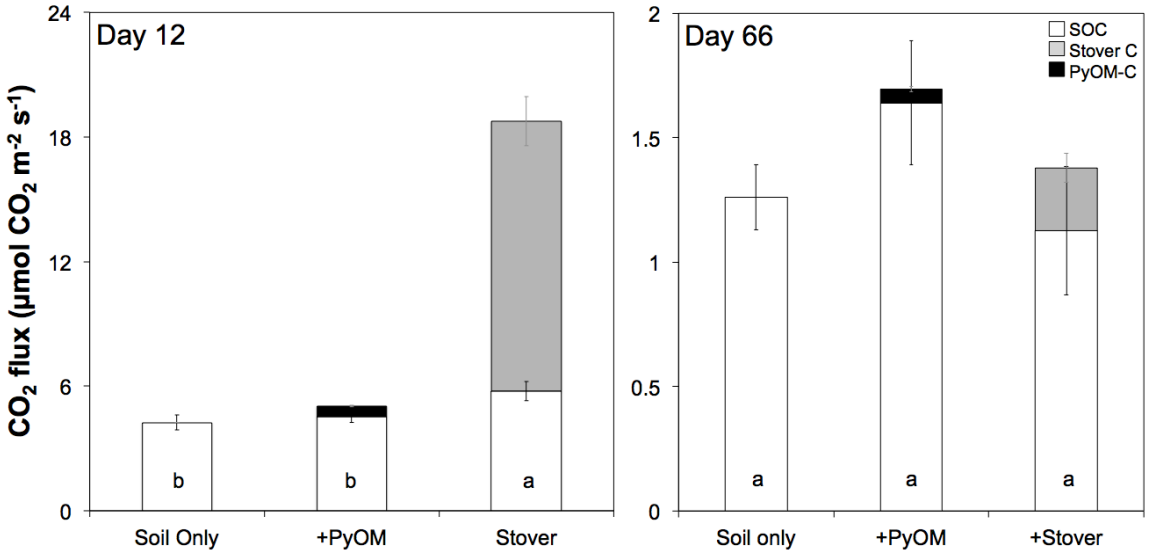
[a] log_2 fold change greater than 1, adjusted P-value less than 0.10.



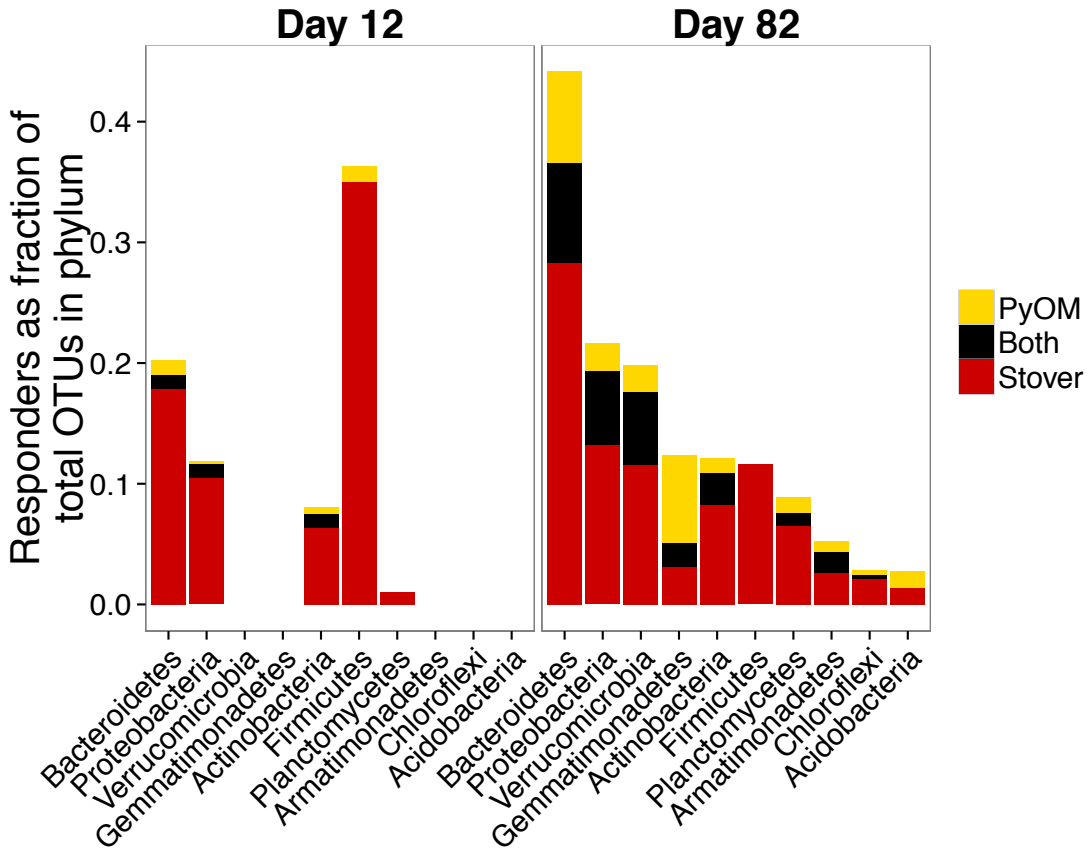
Supplementary Figure 1 Daily precipitation (bars) over duration of experiment and mean soil temperature at 5 cm (open circles) on measurement days.



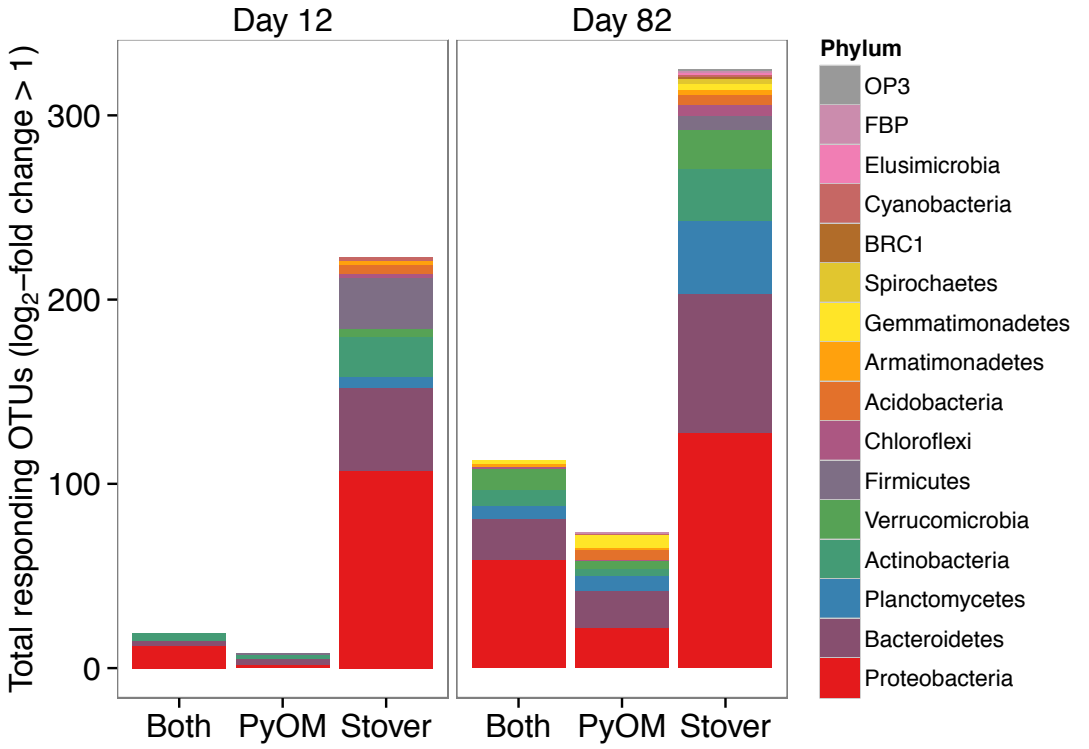
Supplementary Figure 2 Sketch of isotopic forced diffusion chambers from above (left) and below (right). Isotopic forced diffusion semi-static chambers were designed (Figure S1) based on Nickerson *et al*. (2013) to allow for a simple estimate of the $\delta^{13}C$ signature of soil CO_2 fluxes. Chambers were machined out of aluminum and a Gore-Tex membrane was used to allow partial diffusion. Chambers were deployed in pairs, with one chamber top placed on the PVC soil collar, and the atmospheric reference chamber placed on a directly adjacent plugged PVC collar with the same volume as the chamber connected to the soil. The Gore-Tex material was sealed to the chamber with a rubber O-ring held tight with screws between the top and the sides of the metal chamber top (not pictured).



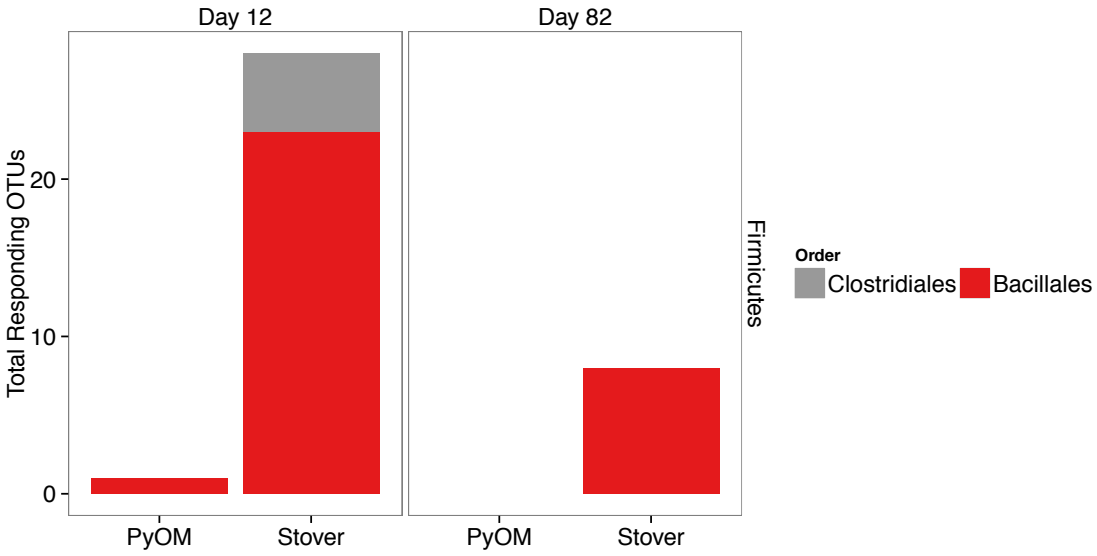
Supplementary Figure 3 Partitioned CO_2 fluxes on days 12 and 66. Error bars ±SE, n=8-16. Letters indicate significant differences between SOC-derived fluxes (ANOVA, Tukey's HSD, $p<0.05$). Grey bars represent stover-derived CO_2, black bars represent PyOM-derived CO_2, and white bars represent soil-derived CO_2. Note different scales on axes.



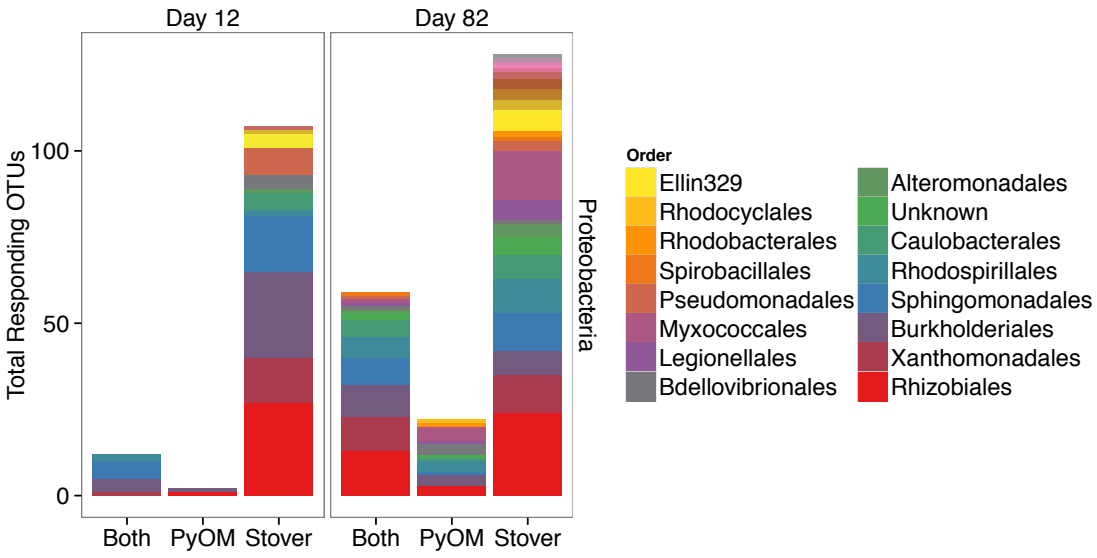
Supplementary Figure 4 Fraction of OTUs in each phylum that respond significantly (defined as $\log_2$-fold change > 1, BH-adjusted p values <0.1) to PyOM, stover, or both amendments on days 12 and 82.



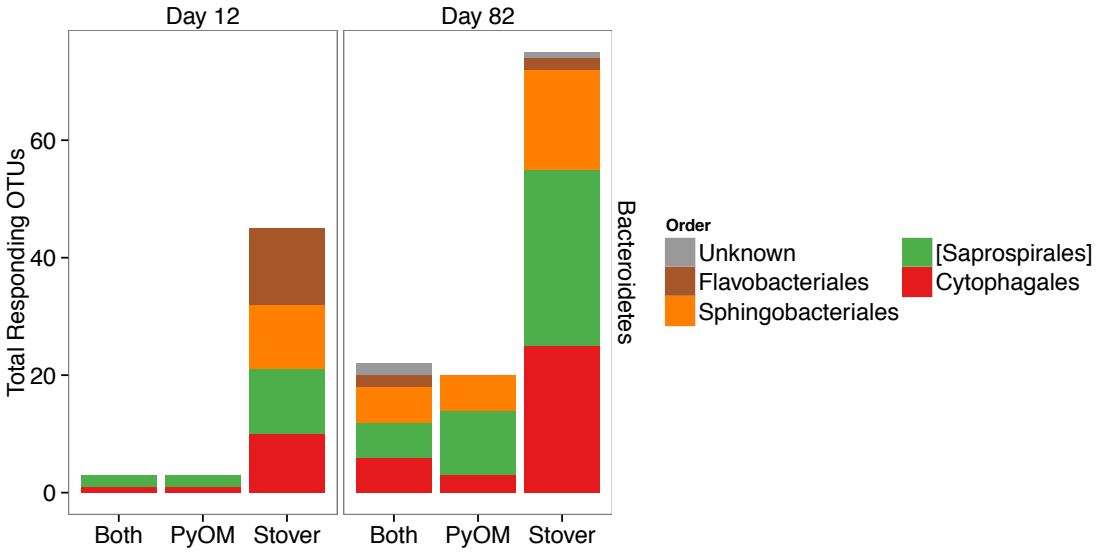
Supplementary Figure 5 Distribution of total responding OTUs (defined as $\log_2$-fold change > 1, BH-adjusted p values < 0.1) by phylum, grouped by OTUs that respond to PyOM, stover, or both additions.



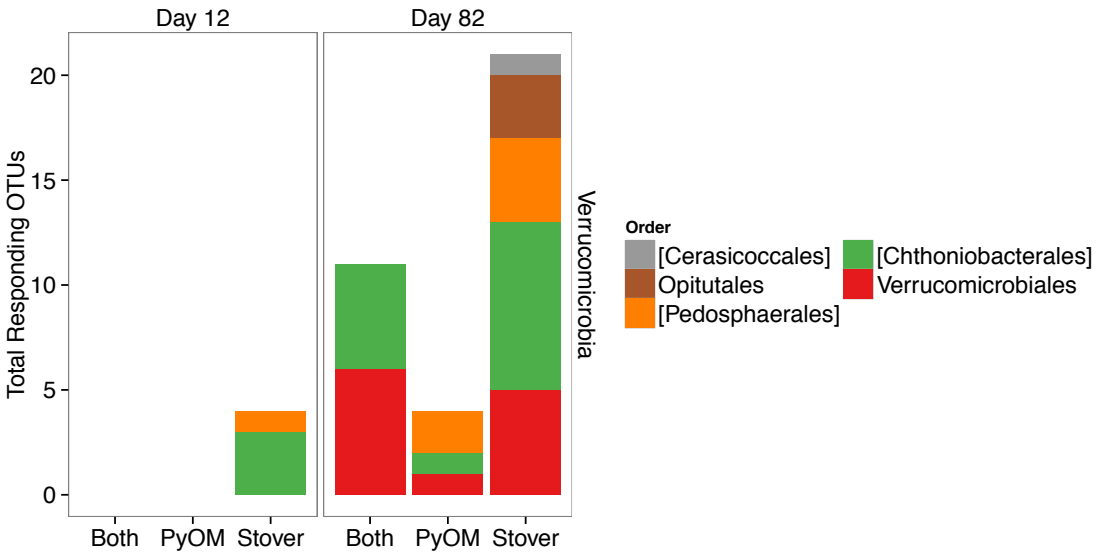
Supplementary Figure 6 Breakdown of responding OTUs (defined as $\log_2$-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Firmicutes*.



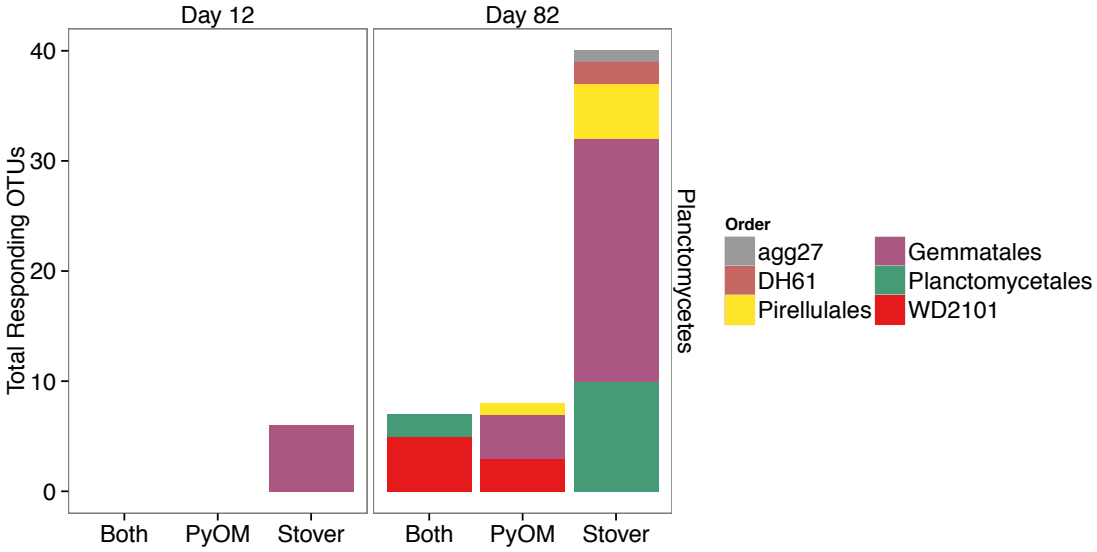
Supplementary Figure 7 Breakdown of responding OTUs (defined as $\log_2$-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Proteobacteria*.



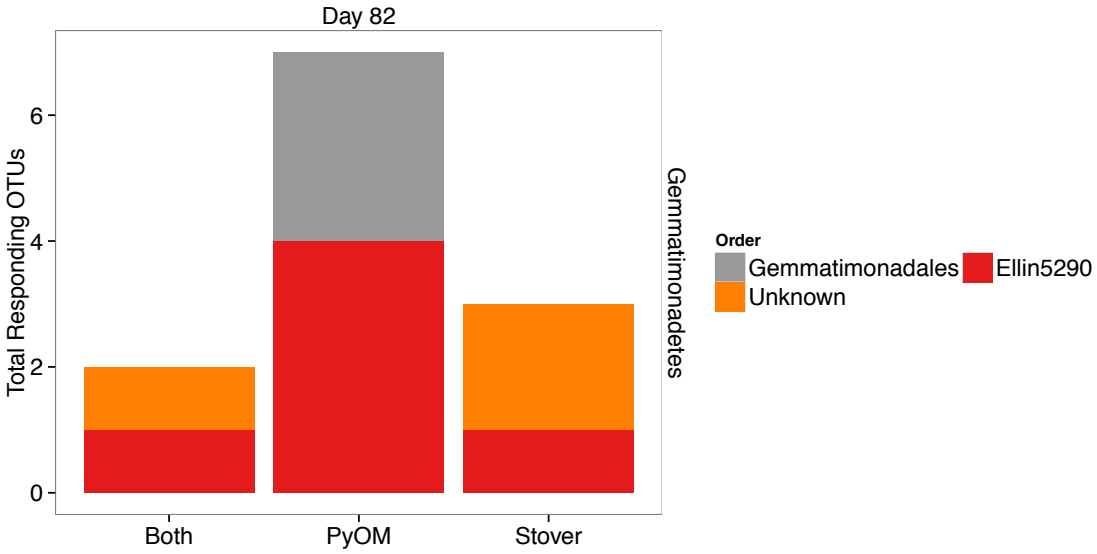
Supplementary Figure 8 Breakdown of responding OTUs (defined as $\log_2$-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Bacteroidetes*.



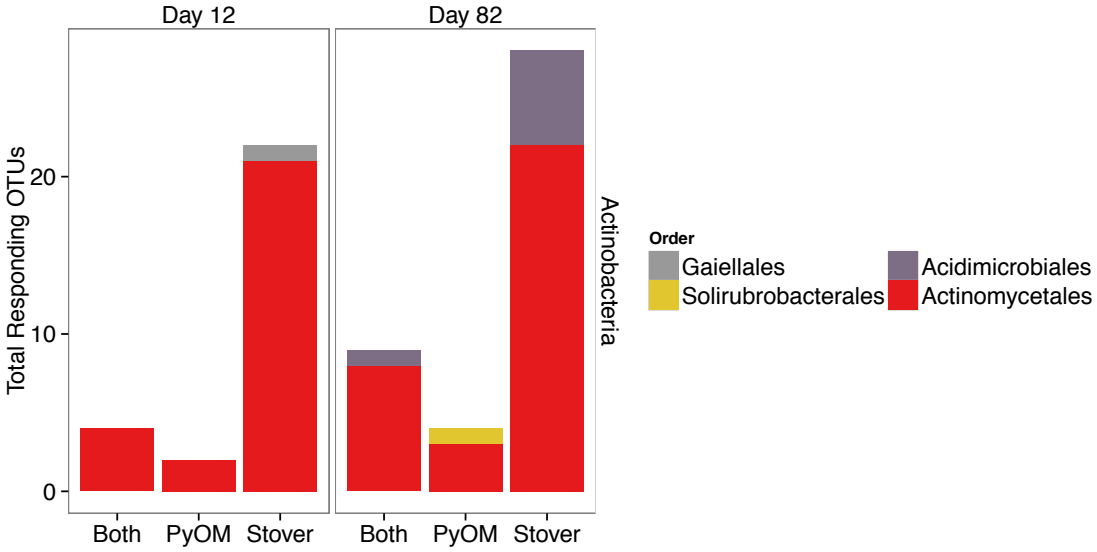
Supplementary Figure 9 Breakdown of responding OTUs (defined as $\log_2$-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Verrucomicrobia*.



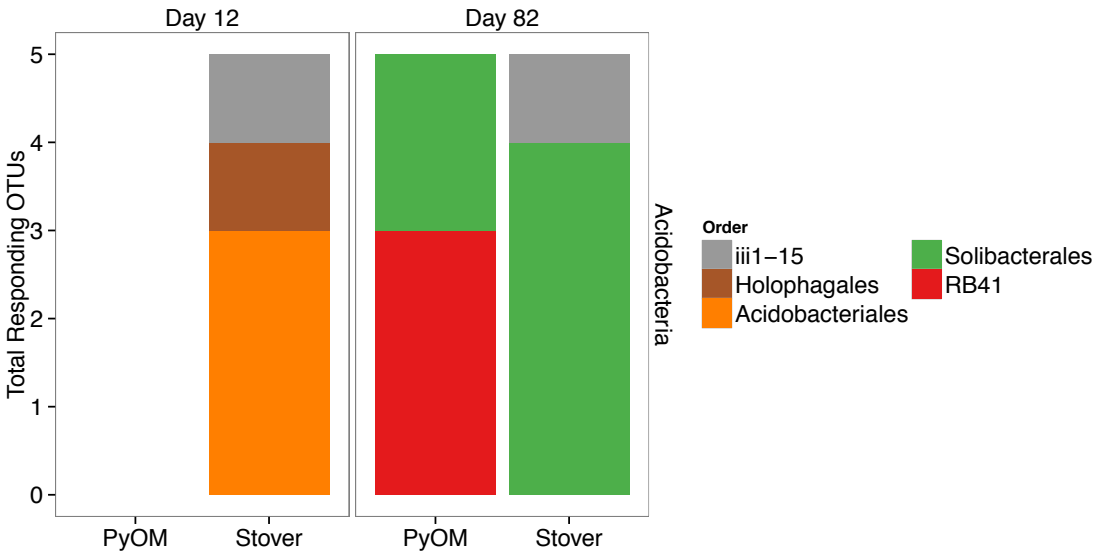
Supplementary Figure 10 Breakdown of responding OTUs (defined as $\log_2$-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Planctomycetes*.



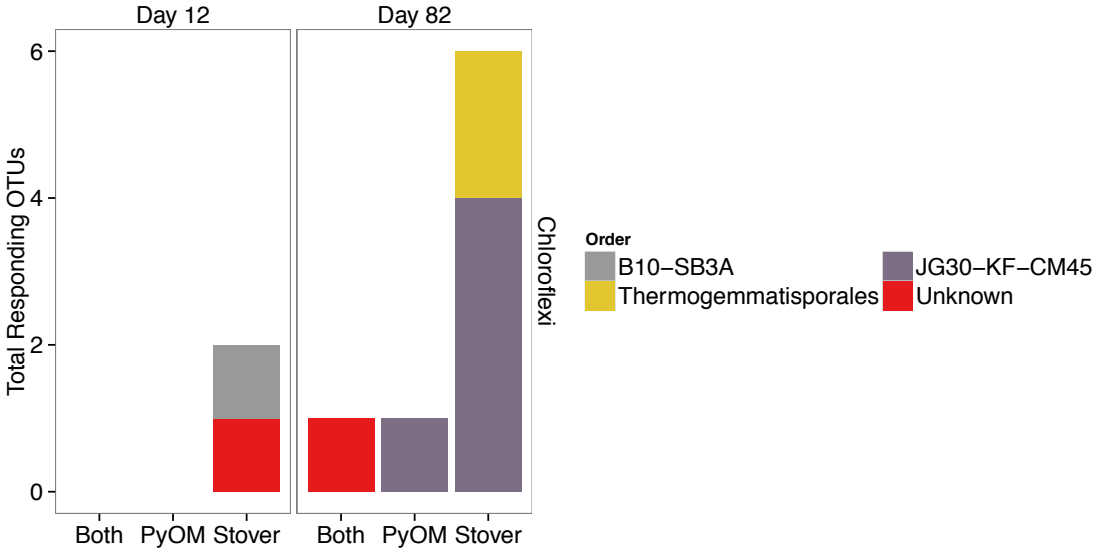
Supplementary Figure 11 Breakdown of responding OTUs (defined as $\log_2$-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Gemmatimonadetes*.



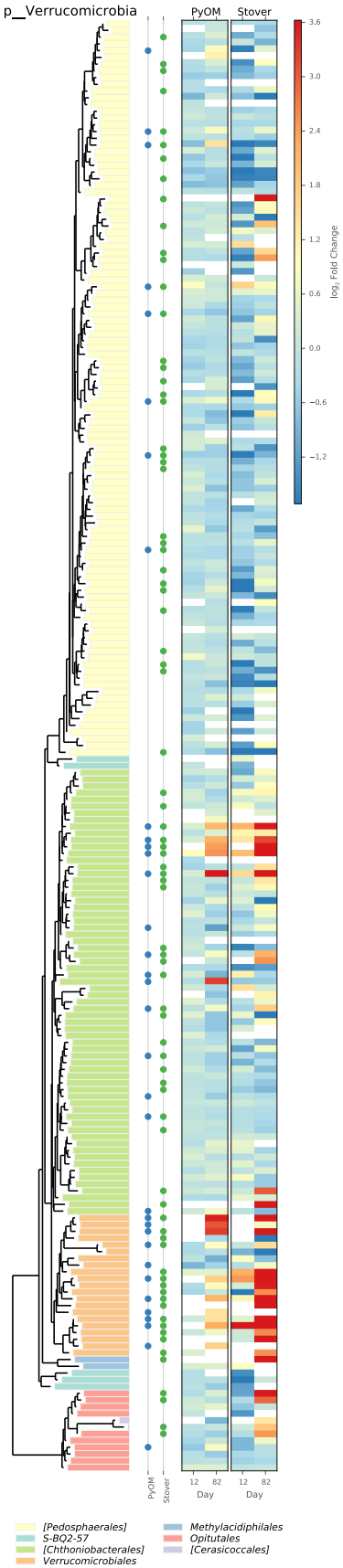
Supplementary Figure 12 Breakdown of responding OTUs (defined as $\log_2$-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Actinobacteria*.



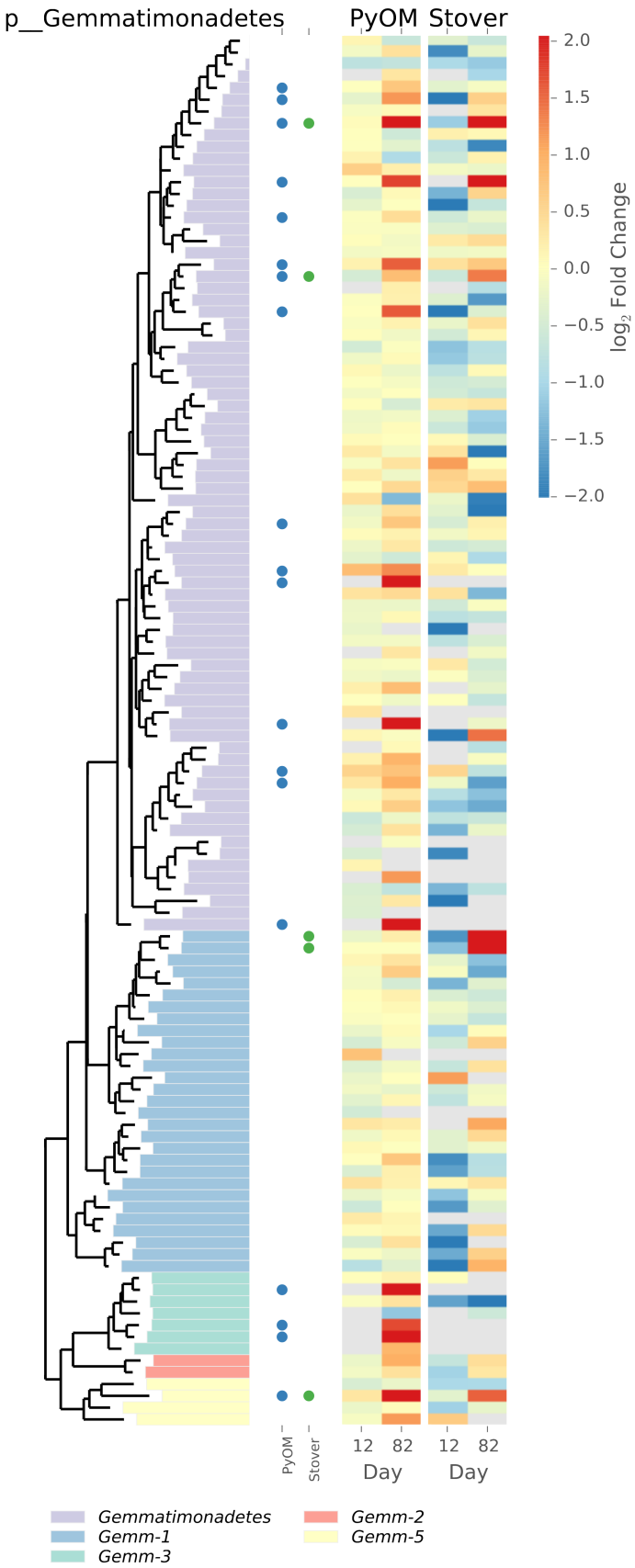
Supplementary Figure 13 Breakdown of responding OTUs (defined as log_2-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Acidobacteria*.



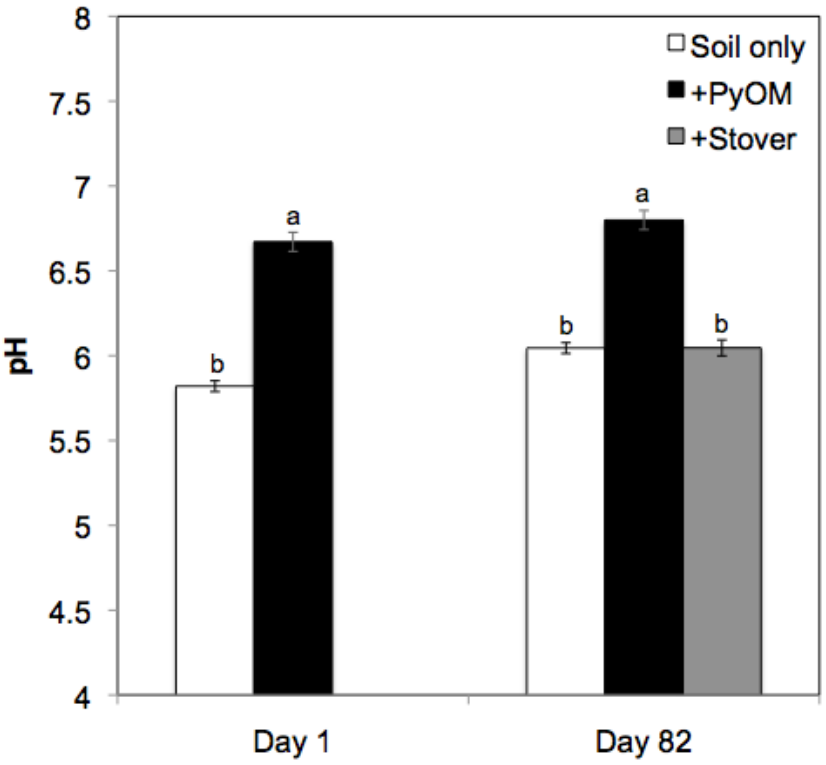
Supplementary Figure 14 Breakdown of responding OTUs (defined as log_2-fold change vs. unamended soil > 1, BH-adjusted p values <0.1) by order, for *Chloroflexi*.


p__Verrucomicrobia
PyOM
Stover
3.6
3.0
2.4
1.8
1.2
0.6
0.0
−0.6
−1.2
log2 Fold Change
PyOM
Stover
12
82
12
82
Day
Day
[Pedosphaerales]
S-BQ2-57
[Chthoniobacterales]
Verrucomicrobiales
Methylacidiphilales
Opitutales
[Cerasicoccales]

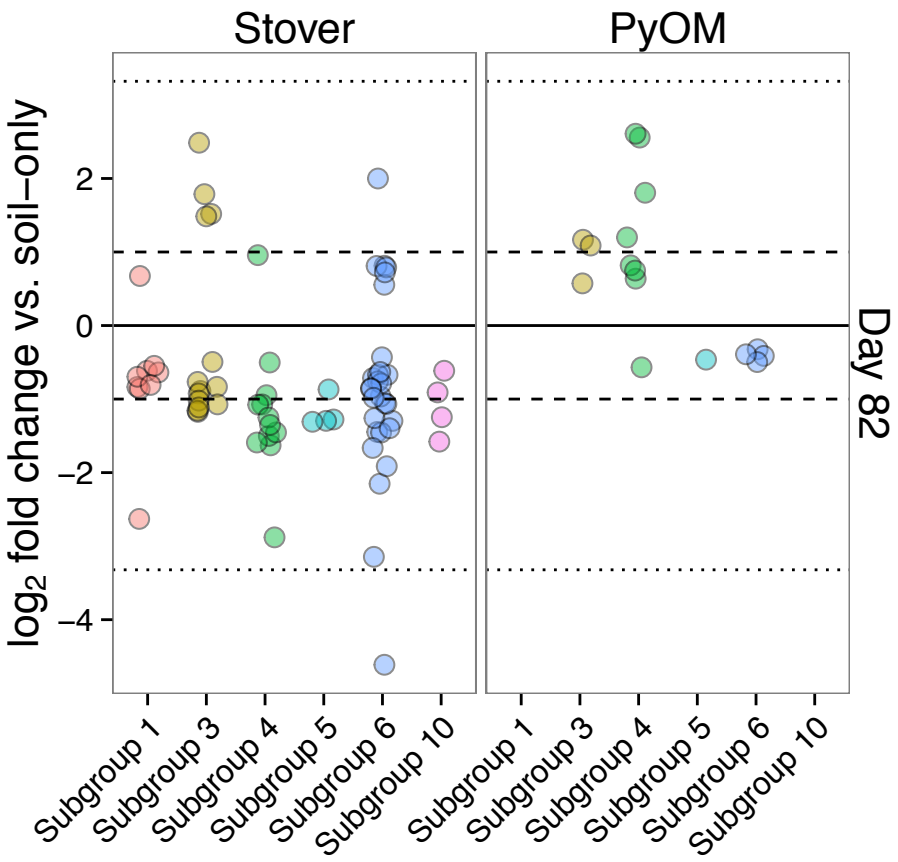
Supplementary Figure 15 Heatmap depicting *Verrucomicrobia* response (log_2-fold change in relative abundance, as compared to soil-only plot) to PyOM or stover amendments for days 12 and 82. Colour of bars represents taxonomic identity at the order level. Significant (BH-adjusted p value <0.10) increases and decreases are indicated by blue (PyOM) or green (stover) circles.


p__Gemmatimonadetes
PyOM
Stover
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
log2 Fold Change
PyOM
Stover
12
82
Day
12
82
Day
Gemmatimonadetes
Gemm-1
Gemm-3
Gemm-2
Gemm-5

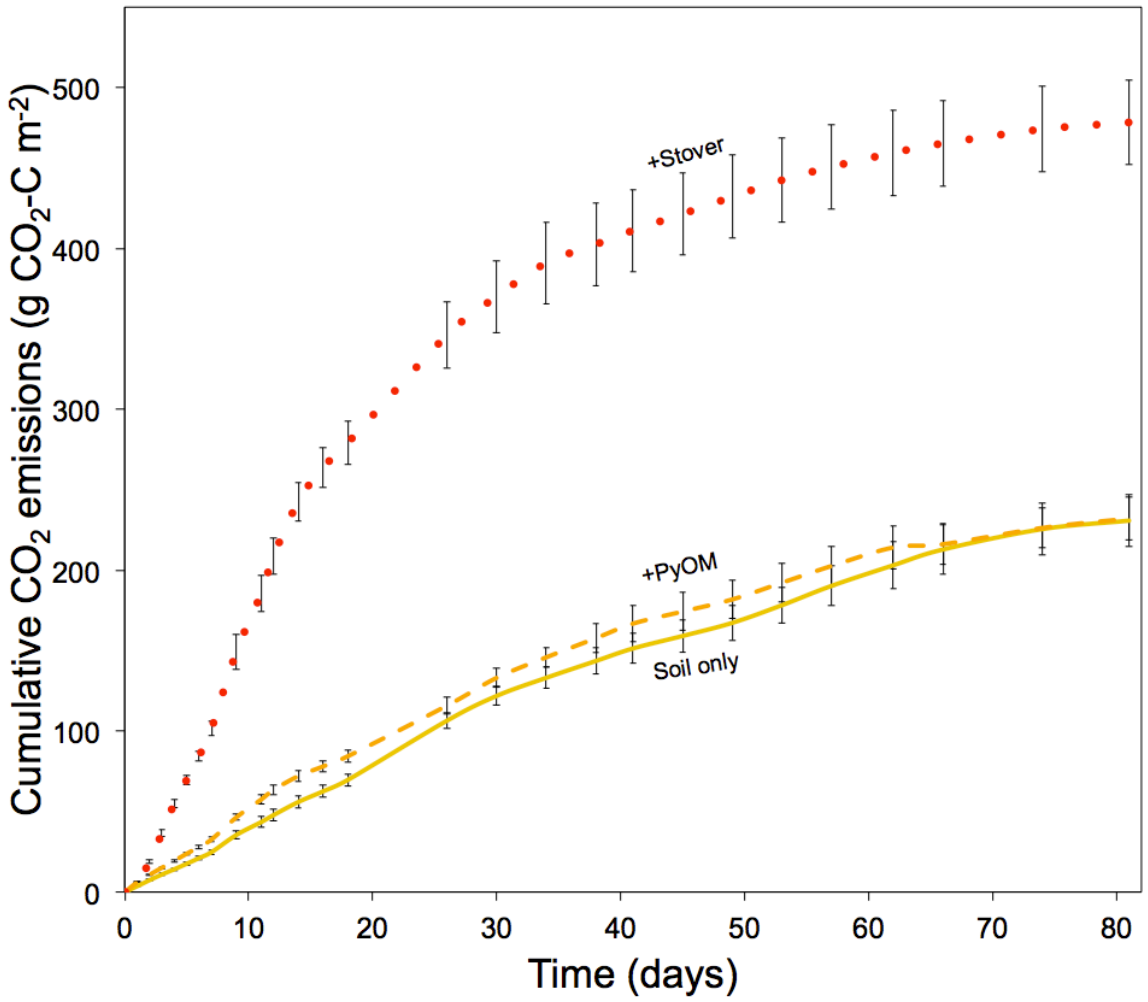
Supplementary Figure 16 Heatmap depicting *Gemmatimonadetes* response (log_2-fold change in relative abundance, as compared to unamended plot) to PyOM or stover amendments for days 12 and 82. Colour of bars represents taxonomic identity at the class level. Significant (BH-adjusted *p*-value <0.10) increases in relative abundance are indicated by blue (PyOM) or green (stover) circles.



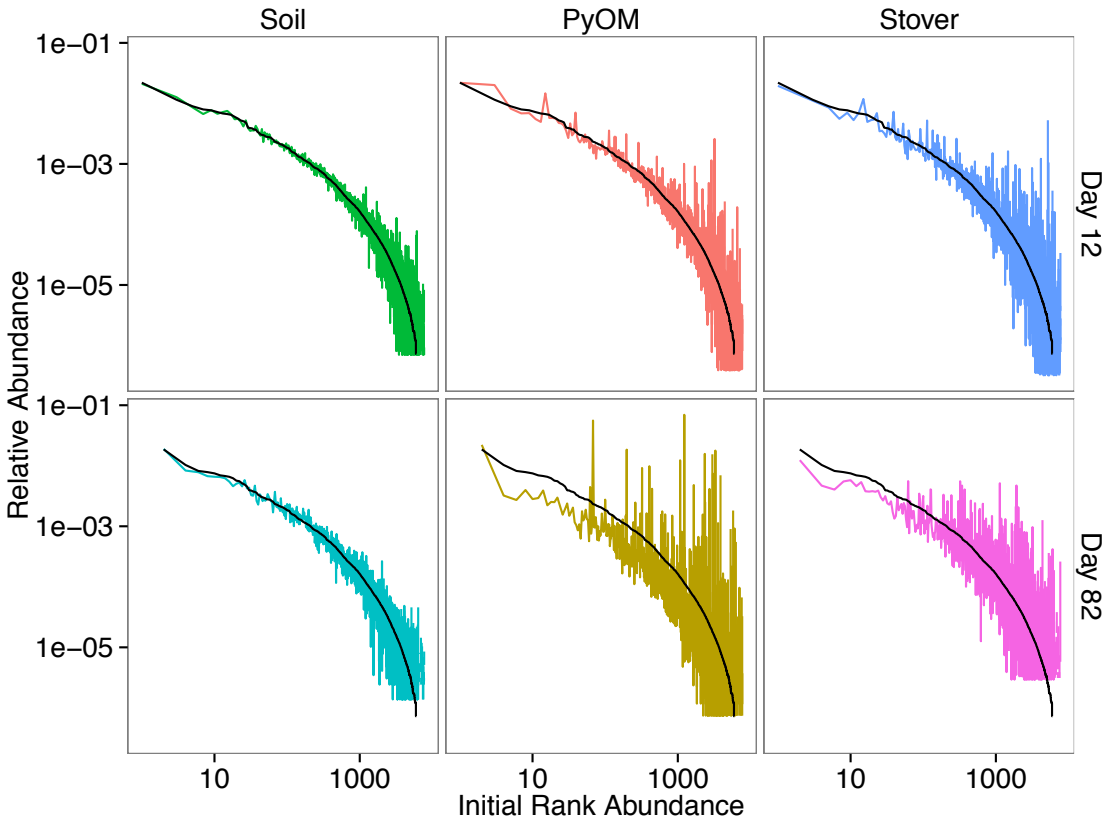
Supplementary Figure 17 Soil pH in deionized water at the start and end of the trial with PyOM and stover amendments. Error bars ±1SE, n=8-16, letters indicate significant differences (ANOVA, Tukey's HSD, $p<0.05$). PyOM additions significantly ($p<0.05$) increased soil pH by 0.85 initially, with an increase of 0.75 persisting at the end of the field trial (Supplementary Figure S3). Stover additions did not significantly change the soil pH, although we did not measure pH under stover additions on day 1.



Supplementary Figure 18 Log_2-fold change (BH-adjusted p value <0.10) in relative abundance of subgroups in the *Acidobacteria* phylum as compared to soil-only plots. Each circle represents a single OTU and dashed and dotted lines represent increases or decreases of 2x and 10x, respectively.



Supplementary Figure 19 Estimated cumulative mean evolved CO_2-C, assuming constant flux rates between sampling intervals. Dotted line indicates plots that received fresh stover additions. Dashed orange line indicates plots that received PyOM additions. Solid yellow line indicates plots that had no additions. Error bars indicate ±SE, n=8-16. These rough calculations indicate stover did not increase total SOC-derived emissions over the course of the trial: total CO_2 emissions in the plots with stover additions exceeded the baseline soil CO_2 emissions plus the total amount of stover C lost (as estimated in Supplementary Figure 7) by only 4.7 g CO_2-C m^{-2}, which is within the margin of error. The limitations to this approach, of course, are that emission rates were measured intermittently, not constantly, so this calculation of cumulative emissions is only a rough estimate.



Supplementary Figure 20 Relative abundance of OTUs as function of initial rank abundance, for unamended soils, soils amended with PyOM, and soil amended with stover, on days 12 and 82. Black line indicates initial rank abundance curve in unamended soil. On day 82, OTUs that responded specifically to PyOM had significantly lower initial abundance ($5.7 \times 10^{-5} \pm 1.36 \times 10^{-4}$ SD) than did OTUs that responded specifically to stover ($1.93 \times 10^{-4} \pm 3.90 \times 10^{-4}$ SD) (Wilcoxon Rank-Sum test, $p = 3.5 \times 10^{-10}$).

Supplementary Note 1

Decreases in relative abundance (Figure 3) do not necessarily correspond to changes in total abundance for these phyla – rather, they are a result of the dramatic increases in absolute abundance in other phyla. Since total DNA is correlated with microbial biomass (Anderson and Martens, 2013; Fornasier *et al*., 2014; Gagneux *et al*., 2011, but see Leckie *et al*., 2004), increased DNA extracted with stover additions on days 12 and 82 (Supplementary Table 6) likely indicates an increase in microbial biomass in association with stover additions. We approximated the effect of increased total DNA (DNA_{tot}) on relative abundance calculations, by scaling relative abundances by total DNA extracted and performed the t-tests on these adjusted values. Some of the increase in total extracted DNA in the stover-amended plots is likely due to added stover DNA (DNA_{sto}). To account for this, we subtracted the stover-derived DNA from the total DNA to yield microbial DNA (DNA_{mic}) in the stover-amended plots and performed the same tests. (However, note that DNA_{mic} as calculated here would also include fungal and viral DNA, which we did not sequence.) We estimated maximum stover-derived DNA as the difference in stover-amended plots and unamended plots on Day 1.) The only difference with scaling was that declines in relative abundance for *Acidobacteria* and *Gemmatamonadetes* on day 82 were no longer statistically significant when scaled for the change in DNA abundance in the stover treatment.

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