Supplementary material

Table S1. Tree species sampled for the 'inter-species' study with bacterial abundances, diversity metrics, and percent of sequences in each sample belonging to each taxonomic group. OTUs = number of unique OTUs out of 750 sequences per sample. PD = Faith's phylogenetic diversity estimated from 750 sequences per sample. Bacterial abundances reported as number of bacterial cells per cm^2 of leaf surface. "Proteo" = Proteobacteria. Dashes (--) indicate samples represented by fewer than 750 sequences (but more than 600).

Sample ID	Cells/cm^2 ($x10^5$)	# OTUs	PD	Species	Bacter-oidetes	TM7	Actino-bacteria	Firmi-cutes	Deino-coccus/ Thermus	Alpha-Proteo	Beta-Proteo	Delta-Proteo	Gamma-Proteo	Proteo (unclassified)	Cren-archaeota (Archaea)	Other
Tree2	5.4	184	4.4	*Abies concolor*	23.30	0.67	8.03	2.56	3.12	11.48	6.47	0.11	43.14	0.00	0.33	0.78
Tree80	2.3	263	5.0	*Acer negundo*	6.51	2.87	11.81	7.28	6.73	4.75	7.73	0.33	50.00	0.22	0.11	1.66
Tree25	1	250	5.9	*Acer platanoides*	7.76	2.59	10.76	3.79	1.79	4.29	10.71	0.32	55.18	0.76	0.00	2.03
Tree16	1.4	163	4.5	*Acer platanoides 'schwedler'*	2.04	1.40	6.11	19.08	1.15	2.67	14.50	0.38	51.53	0.13	0.00	1.02
Tree61	5.6	270	5.7	*Acer rubrum*	34.23	1.78	17.17	3.46	3.57	13.71	13.04	0.56	10.03	0.67	0.33	1.45
Tree87	1.5	215	5.5	*Acer saccharinum*	33.48	0.73	9.71	3.18	0.91	17.42	17.15	0.09	13.16	0.91	1.54	1.72
Tree89	2.1	361	7.3	*Aesculus glabra*	8.86	12.63	15.01	5.29	9.29	13.07	4.32	1.08	22.57	1.08	0.65	6.16
Tree43	2	402	7.2	*Aesculus hippocastanum*	11.62	7.51	28.57	11.86	10.77	12.83	5.69	0.48	5.21	0.73	0.00	4.72
Tree72	1.4	336	6.3	*Ailanthus altissima*	10.42	3.96	14.00	15.93	5.50	7.34	15.83	0.19	21.81	0.68	0.10	4.25
Tree69	1.5	382	7.3	*Alnus serrulata*	8.28	9.96	17.92	12.05	14.57	11.43	9.54	0.31	11.64	0.21	0.10	3.98
Tree75	1.2	240	5.5	*Carya illinoinensis*	4.71	3.84	10.66	3.97	2.60	4.09	9.67	0.12	56.75	0.37	0.12	3.10
Tree1	3.1	305	5.7	*Catalpa speciosa*	10.39	3.34	20.18	17.73	4.53	12.83	5.64	0.07	22.03	0.52	0.30	2.45
Tree88	6	156	4.1	*Cedrus libani*	66.07	0.53	4.10	2.42	0.84	3.57	15.55	0.00	6.09	0.32	0.21	0.32
Tree9	3.2	329	7.4	*Celtis occidentalis*	8.61	3.00	14.36	10.99	3.37	5.99	8.11	0.37	37.95	3.62	0.00	3.50
Tree7	0.6	400	7.9	*Cercis canadensis*	15.06	12.18	24.68	3.53	3.42	5.88	11.97	1.28	10.79	1.71	0.00	9.51
Tree55	5.7	424	7.3	*Cornus alternifolia*	7.68	3.57	28.53	10.01	5.62	12.76	9.47	0.82	10.43	0.69	0.41	10.01
Tree93	1.6	428	7.8	*Cotinus coggygria*	10.15	6.26	27.90	14.77	7.18	9.64	7.49	0.82	3.59	1.54	4.62	6.05
Tree106	2	307	6.8	*Crataegus mollis*	43.41	1.16	11.63	5.33	3.29	7.17	8.24	0.29	14.63	0.97	0.58	3.29
Tree95	1.7	--	--	*Elaeagnus angustifolia*	8.65	0.44	7.54	3.77	0.89	4.21	6.43	0.67	63.41	0.89	0.44	2.66

Tree58	4.6	258	5.3	*Euoynmus atropurpureus*	5.94	4.55	9.10	6.57	13.65	4.42	3.67	0.25	48.55	0.51	0.00	2.78
Tree65	2.2	377	6.9	*Fraxinus americana*	11.67	3.60	13.20	15.38	9.92	9.81	14.39	0.33	17.01	0.98	0.11	3.60
Tree22	1.8	309	5.3	*Fraxinus pennsylvanica*	10.56	2.22	13.00	12.11	6.67	9.56	7.33	0.22	35.22	0.44	0.00	2.67
Tree91	1	242	5.6	*Gleditsia tricanthos*	14.01	7.36	3.33	3.44	2.26	4.75	9.03	0.36	51.31	1.54	0.71	1.90
Tree68	3.1	277	5.9	*Koelreuteria paniculata*	9.94	1.69	8.93	6.21	2.60	7.91	8.36	0.79	50.40	0.34	0.00	2.82
Tree70	1.8	161	4.3	*Larix decidua*	41.24	0.40	1.45	0.40	0.13	13.44	40.32	0.00	1.19	0.53	0.26	0.66
Tree90	1	390	7.1	*Liquidambar styraciflua*	8.41	8.28	23.59	10.48	5.38	13.79	4.00	1.10	14.48	0.69	0.00	9.79
Tree110	1.5	130	8.0	*Magnolia soulangeana*	11.21	1.58	17.28	20.71	11.35	7.39	8.84	0.13	11.21	1.72	5.28	3.30
Tree85	1.4	331	5.9	*Magnolia stellata*	14.48	2.35	15.84	13.03	9.86	7.87	12.22	0.81	18.28	1.09	0.36	3.80
Tree59	2.8	286	6.2	*Morus alba*	16.89	1.20	11.98	5.63	6.11	18.08	20.84	0.24	17.13	0.60	0.00	1.32
Tree56	3.1	183	4.8	*Parthenocissus quinquefolia*	3.51	1.28	5.42	10.20	1.70	6.80	8.71	0.11	51.22	0.32	0.11	10.63
Tree5	1.4	179	3.4	*Picea pungens*	22.89	0.22	5.08	0.54	0.54	26.67	7.56	0.00	34.77	0.76	0.00	0.97
Tree54	1	186	4.4	*Pinus nigra*	77.91	0.54	1.08	1.63	0.27	13.55	3.93	0.14	0.14	0.81	0.00	0.00
Tree18	1.7	187	4.4	*Pinus flexilis*	64.40	4.74	4.50	0.12	0.00	7.17	9.60	0.00	7.78	1.46	0.00	0.24
Tree94	1.9	206	5.3	*Pinus heldreichii*	71.09	1.67	4.46	0.00	0.89	13.95	5.36	0.56	0.78	0.45	0.00	0.78
Tree77	2.7	215	5.0	*Pinus ponderosa*	62.23	0.82	1.10	0.00	1.37	21.98	9.20	0.00	2.06	0.69	0.00	0.55
Tree103	0.4	147	4.6	*Pinus strobiformis*	72.51	0.60	7.55	0.60	0.45	10.88	4.23	0.45	0.15	1.81	0.15	0.60
Tree108	1.2	401	8.8	*Populus deltoides*	19.28	3.99	9.44	7.98	3.86	8.91	11.97	0.93	26.33	1.60	1.33	4.39
Tree79	3.8	369	6.9	*Prunus sertona*	30.99	3.10	13.22	8.68	6.30	12.91	9.81	0.41	10.74	1.34	0.00	2.48
Tree71	1	182	4.1	*Pseudotsuga menziesii*	22.59	0.47	2.82	1.41	0.71	44.47	18.47	0.24	5.76	1.53	0.00	1.53
Tree74	1.7	220	5.9	*Quercus bicolor*	28.42	3.60	8.00	3.13	5.80	3.60	12.76	0.46	29.81	0.81	0.00	3.60
Tree102	1.7	110	3.1	*Quercus coccinea*	1.17	0.35	2.46	2.57	0.12	0.70	8.07	0.12	84.09	0.00	0.00	0.35
Tree109	1.1	298	7.0	*Quercus macrocarpa*	18.82	5.89	9.22	2.69	1.79	11.40	7.55	1.02	9.86	2.18	24.84	4.74
Tree66	2	155	5.2	*Quercus palustris*	4.60	0.75	5.47	3.48	0.25	1.86	7.95	0.75	73.04	0.37	0.00	1.49
Tree78	1.4	292	5.9	*Quercus robur*	5.07	3.67	11.76	9.82	4.21	6.36	6.58	0.11	49.95	0.32	0.11	2.05
Tree73	1.2	28	1.3	*Quercus rubra*	0.21	0.00	0.11	0.00	0.00	2.53	0.21	0.00	96.62	0.11	0.00	0.21
Tree92	1.6	93	3.8	*Quercus velutina*	1.53	0.38	2.01	0.77	0.96	2.30	1.05	0.10	89.94	0.57	0.10	0.29
Tree60	2.9	376	6.9	*Rhamnus cathartica*	13.98	2.74	21.58	8.81	5.07	21.38	5.07	0.30	16.11	0.91	0.20	3.85
Tree81	3	240	5.9	*Salix nigra*	10.13	5.23	11.14	4.12	1.56	2.67	16.70	0.45	43.43	0.56	0.45	3.56
Tree99	1	346	7.7	*Sambucus sp.*	10.93	4.37	16.16	12.45	3.04	4.56	14.64	1.43	27.09	2.09	0.19	3.04
Tree62	1	--	--	*Taxodium distichum*	12.73	0.93	10.56	5.90	0.31	12.73	15.53	0.31	33.23	0.93	0.00	6.83

Tree86	1	--	--	*Taxus sp.*	2.15	1.51	3.87	17.85	3.23	2.58	6.02	0.22	60.65	0.65	0.65	0.65
Tree97	2.3	137	3.8	*Thuja occidentalis*	56.88	1.16	5.14	0.17	4.31	10.78	17.91	0.00	0.83	2.16	0.17	0.50
Tree20	1	164	4.9	*Tilia americana*	2.91	1.45	5.92	1.25	1.56	2.28	5.50	0.52	76.01	0.31	0.00	2.28
Tree64	1.8	278	5.9	*Tsuga canadensis*	39.33	8.15	11.00	4.40	10.87	5.95	9.70	0.65	5.05	0.26	0.00	4.66
Tree101	2.9	166	4.5	*Tsuga mertensiana*	31.04	56.71	4.55	0.05	0.16	5.40	1.06	0.12	0.03	0.53	0.00	0.36
Tree83	2.7	208	5.6	*Ulmus americana*	29.72	0.90	10.85	3.05	0.90	3.39	25.20	0.79	23.50	0.79	0.00	0.90

Table S2. Most common groups of bacteria across all samples included in the 'inter-species' study with average relative abundance (% of sequences) of each taxon per sample and the average relative abundance across all samples combined. Standard errors indicated in parantheses.

	Mean % of sequences per sample	Total number of sequences (all samples combined)	% of total sequences (all samples combined)
Sphingobacteriales (Bacteroidetes)	20.1 (2.8)	13284	21.3
Enterobacteriales (Gammaproteobacteria)	23.9 (3.3)	12897	20.6
TM7	4.1 (1.0)	8806	14.1
Actinomycetales (Actinobacteria)	9.6 (0.9)	5495	8.8
Burkholderiales (Betaproteobacteria)	8.6 (0.9)	4473	7.2
Deinococcales (Deinococcus-Thermus)	3.7 (0.5)	1886	3.0
Rhodospirillales (Alphaproteobacteria)	3.4 (0.7)	1853	3.0
Sphingomonadales (Alphaproteobacteria)	2.7 (0.3)	1487	2.4
Unclassified Gammaproteobacteria	2.2 (0.7)	1050	1.7
Bacillales (Firmicutes)	1.9 (0.2)	973	1.6
Lactobacillales (Firmicutes)	1.8 (0.3)	944	1.5
Pseudomonadales (Gammaproteobacteria)	2.0 (0.4)	909	1.5

Table S3. Diversity by plant order. Number of OTUs and Faith's PD given for random sample of 750 sequences per sample to compensate for differences in sampling effort between samples. Standard deviations and ranges are given for those orders represented by more than one species.

	OTUs			PD		
Order	**Average**	**StDev**	**Range**	**Average**	**StDev**	**Range**
Malvales	163.59	--	--	4.93	--	--
Vitales	183.31	--	--	4.79	--	--
Pinales	197.39	15.07	78.29	4.7	0.23	1.97
Fagales	202.03	40.37	353.64	5	0.68	6
Magnoliales	230.12	100.38	200.76	6.94	1.02	2.03
Celastrales	257.67	--		5.33	--	--
Sapindales	298.39	31.61	264.93	6.29	0.38	3.29
Rosales	310.61	14.84	167.7	6.34	0.3	1.73
Fabales	320.77	79.2	158.4	6.745	1.18	2.35
Malpighiales	320.97	80.52	161.03	7.35	1.43	2.85
Lamiales	330.38	23.52	72.4	5.95	0.49	1.62
Dipsacales	346.31	--	--	7.74	--	--
Saxifragales	390.4	--	--	7.12	--	--
Cornales	423.52	--	--	7.26	--	--

Table S4. Trees sampled for the three studies, the location of the trees (in decimal degrees), and the taxonomic description of the trees. The "geographic" study refers to the study comparing *Pinus ponderosa* bacterial communities at different spatial scales. The "inter-species" study refers to the study comparing bacterial communities on individual trees from each tree species and the "intra-species" study is the study comparing bacterial communities on individual trees of the same species and within a given tree. The replicates column indicates whether that tree served as a replicate individual from that given species (sp.) or a replicate sample taken from a single tree (indiv).

SampleID	Study	Latitude	Longitude	Order	Family	Genus_Species	Replicate
AA	Geographic	-35.3039	149.0950	Pinales	Pinaceae	*Pinus ponderosa*	--
AB	Geographic	-35.3039	149.0950	Pinales	Pinaceae	*Pinus ponderosa*	--
AC	Geographic	-35.3039	149.0950	Pinales	Pinaceae	*Pinus ponderosa*	--
AD	Geographic	-35.3039	149.0950	Pinales	Pinaceae	*Pinus ponderosa*	--
AE	Geographic	-35.3039	149.0950	Pinales	Pinaceae	*Pinus ponderosa*	--
CA1A	Geographic	39.3751	-123.3274	Pinales	Pinaceae	*Pinus ponderosa*	--
CA1B	Geographic	39.3752	-123.3276	Pinales	Pinaceae	*Pinus ponderosa*	--
CA1C	Geographic	39.3754	-123.3279	Pinales	Pinaceae	*Pinus ponderosa*	--
CA2A	Geographic	39.4047	-123.3538	Pinales	Pinaceae	*Pinus ponderosa*	--
CA2B	Geographic	39.4047	-123.3538	Pinales	Pinaceae	*Pinus ponderosa*	--
CA2C	Geographic	39.4089	-123.3549	Pinales	Pinaceae	*Pinus ponderosa*	--
CA3A	Geographic	39.6924	-123.4757	Pinales	Pinaceae	*Pinus ponderosa*	--
CA3B	Geographic	39.6929	-123.4770	Pinales	Pinaceae	*Pinus ponderosa*	--
CA3C	Geographic	39.6942	-123.4764	Pinales	Pinaceae	*Pinus ponderosa*	--
CU1	Geographic	40.0083	-105.2700	Pinales	Pinaceae	*Pinus ponderosa*	--
CU2	Geographic	40.0100	-105.2717	Pinales	Pinaceae	*Pinus ponderosa*	--
CU3	Geographic	40.0067	-105.2733	Pinales	Pinaceae	*Pinus ponderosa*	--
FC1	Geographic	40.6320	-105.1991	Pinales	Pinaceae	*Pinus ponderosa*	--
FC2	Geographic	40.6419	-105.1990	Pinales	Pinaceae	*Pinus ponderosa*	--
FC3	Geographic	40.6350	-105.2200	Pinales	Pinaceae	*Pinus ponderosa*	--
Tree1	Inter-Species	40.0084	-105.2705	Lamiales	Bignoniaceae	*Catalpa* sp.	sp
Tree101	Inter-Species	40.0099	-105.2722	Pinales	Pinaceae	*Tsuga mertensiana*	--
Tree102	Inter-Species	40.0094	-105.2730	Fagales	Fagaceae	*Quercus coccinea*	--
Tree103	Inter-Species	40.0092	-105.2731	Pinales	Pinaceae	*Pinus strobiformis*	--
Tree106	Inter-Species	40.0091	-105.2722	Rosales	Rosaceae	*Crataegus mollis*	--
Tree108	Inter-Species	40.0088	-105.2731	Malpighiales	Salicaceae	*Populus deltoides*	--
Tree109	Inter-Species	40.0084	-105.2718	Fagales	Fagaceae	*Quercus macrocarpa*	--
Tree110	Inter-Species	40.0079	-105.2714	Magnoliales	Magnoliaceae	*Magnolia soulangeana*	--
Tree16	Inter-Species	40.0094	-105.2703	Sapindales	Sapindaceae	*Acer platanoides 'schwedler'*	sp
Tree18	Inter-Species	40.0098	-105.2711	Pinales	Pinaceae	*Pinus flexilis*	sp
Tree2	Inter-Species	40.0083	-105.2705	Pinales	Pinaceae	*Abies concolor*	sp and indiv
Tree20	Inter-Species	40.0096	-105.2713	Malvales	Malvaceae	*Tilia americana*	sp
Tree22	Inter-Species	40.0102	-105.2718	Lamiales	Oleaceae	*Fraxinus pennsylvanica*	sp and indiv
Tree25	Inter-Species	40.0097	-105.2721	Sapindales	Sapindaceae	*Acer platanoides*	sp

Tree43	Inter-Species	40.0075	-105.2729	Sapindales	Sapindaceae	*Aesculus hippocastanum*	sp
Tree5	Inter-Species	40.0083	-105.2706	Pinales	Pinaceae	*Picea pungens*	sp
Tree54	Inter-Species	40.0091	-105.2701	Pinales	Pinaceae	*Pinus nigra*	--
Tree55	Inter-Species	40.0075	-105.2719	Cornales	Cornaceae	*Cornus alternifolia*	--
Tree56	Inter-Species	40.0071	-105.2724	Vitales	Vitaceae	*Parthenocissus quinquefolia*	--
Tree58	Inter-Species	40.0070	-105.2725	Celastrales	Celastraceae	*Euoynmus atropurpureus*	--
Tree59	Inter-Species	40.0066	-105.2728	Rosales	Moraceae	*Morus alba*	--
Tree60	Inter-Species	40.0071	-105.2729	Rosales	Rhamnaceae	*Rhamnus cathartica*	--
Tree61	Inter-Species	40.0072	-105.2734	Sapindales	Sapindaceae	*Acer rubrum*	--
Tree62	Inter-Species	40.0073	-105.2734	Pinales	Cupressaceae	*Taxodium distichum*	--
Tree64	Inter-Species	40.0078	-105.2730	Pinales	Pinaceae	*Tsuga canadensis*	--
Tree65	Inter-Species	40.0080	-105.2738	Lamiales	Oleaceae	*Fraxinus americana*	--
Tree66	Inter-Species	40.0084	-105.2741	Fagales	Fagaceae	*Quercus palustris*	--
Tree68	Inter-Species	40.0082	-105.2746	Sapindales	Sapindaceae	*Koelreuteria paniculata*	--
Tree69	Inter-Species	40.0081	-105.2749	Fagales	Betulaceae	*Alnus serrulata*	--
Tree7	Inter-Species	40.0089	-105.2699	Fabales	Fabaceae	*Cercis canadensis*	sp and indiv
Tree70	Inter-Species	40.0084	-105.2751	Pinales	Pinaceae	*Larix decidua*	--
Tree71	Inter-Species	40.0085	-105.2749	Pinales	Pinaceae	*Psuedotsuga menziesii*	--
Tree72	Inter-Species	40.0084	-105.2748	Sapindales	Simaroubaceae	*Ailanthus altissima*	--
Tree73	Inter-Species	40.0087	-105.2751	Fagales	Fagaceae	*Quercus rubra*	--
Tree74	Inter-Species	40.0088	-105.2748	Fagales	Fagaceae	*Quercus bicolor*	--
Tree75	Inter-Species	40.0088	-105.2748	Fagales	Juglandaceae	*Carya illinoinensis*	--
Tree77	Inter-Species	40.0091	-105.2752	Pinales	Pinaceae	*Pinus ponderosa*	--
Tree78	Inter-Species	40.0094	-105.2755	Fagales	Fagaceae	*Quercus robur*	--
Tree79	Inter-Species	40.0091	-105.2741	Rosales	Rosaceae	*Prunus sertona*	--
Tree80	Inter-Species	40.0090	-105.2745	Sapindales	Sapindaceae	*Acer negundo*	--
Tree81	Inter-Species	40.0086	-105.2747	Malpighiales	Salicaceae	*Salix nigra*	--
Tree83	Inter-Species	40.0087	-105.2744	Rosales	Ulmaceae	*Ulmus americana*	--
Tree85	Inter-Species	40.0079	-105.2714	Magnoliales	Magnoliaceae	*Magnolia stellata*	--
Tree86	Inter-Species	40.0076	-105.2717	Pinales	Taxaceae	*Taxus sp.*	--
Tree87	Inter-Species	40.0081	-105.2711	Sapindales	Sapindaceae	*Acer saccharinum*	--
Tree88	Inter-Species	40.0087	-105.2700	Pinales	Pinaceae	*Cedrus libani*	--
Tree89	Inter-Species	40.0081	-105.2694	Sapindales	Sapindaceae	*Aesculus glabra*	--
Tree9	Inter-Species	40.0087	-105.2699	Rosales	Cannabaceae	*Celtis occidentalis*	sp
Tree90	Inter-Species	40.0081	-105.2778	Saxifragales	Altingaceae	*Liquidambar styraciflua*	--
Tree91	Inter-Species	40.0094	-105.2691	Fabales	Fabaceae	*Gleditsia tricanthos*	--
Tree92	Inter-Species	40.0095	-105.2703	Fagales	Fagaceae	*Quercus velutina*	--
Tree93	Inter-Species	40.0096	-105.2706	Sapindales	Anacardiaceae	*Cotinus coggygria*	--
Tree94	Inter-Species	40.0102	-105.2703	Pinales	Pinaceae	*Pinus heldreichii*	--
Tree95	Inter-Species	40.0097	-105.2710	Rosales	Elaeagnaceae	*Elaeagnus angustifolia*	--
Tree97	Inter-Species	40.0093	-105.2710	Pinales	Cupressaceae	*Thuja occidentalis*	--
Tree99	Inter-Species	40.0099	-105.2721	Dipsacales	Caprifoliaceae	*Sambucus sp.*	--
Tree1	Intra-species	40.0084	-105.2705	Lamiales	Bignoniaceae	*Catalpa sp.*	sp
Tree12	Intra-species	40.0092	-105.2690	Rosales	Cannabaceae	*Celtis occidentalis*	sp and indiv
Tree14	Intra-species	40.0093	-105.2692	Pinales	Pinaceae	*Picea pungens*	sp and indiv
Tree15	Intra-species	40.0093	-105.2692	Pinales	Pinaceae	*Picea pungens*	sp and indiv
Tree16	Intra-species	40.0094	-105.2703	Sapindales	Sapindaceae	*Acer platanoides 'schwedler'*	sp
Tree17	Intra-species	40.0096	-105.2708	Sapindales	Sapindaceae	*Aesculus hippocastanum*	sp and indiv
Tree18	Intra-species	40.0098	-105.2711	Pinales	Pinaceae	*Pinus flexilis*	sp
Tree19	Intra-species	40.0098	-105.2711	Pinales	Pinaceae	*Pinus flexilis*	sp
Tree2	Intra-species	40.0083	-105.2705	Pinales	Pinaceae	*Abies concolor*	sp and indiv
Tree20	Intra-species	40.0096	-105.2713	Malvales	Malvaceae	*Tilia americana*	sp
Tree22	Intra-species	40.0102	-105.2718	Lamiales	Oleaceae	*Fraxinus pennsylvanica*	sp and indiv
Tree23	Intra-species	40.0102	-105.2718	Lamiales	Oleaceae	*Fraxinus pennsylvanica*	sp and indiv
Tree24	Intra-species	40.0093	-105.2712	Sapindales	Sapindaceae	*Acer platanoides 'schwedler'*	sp

Tree26	Intra-species	40.0093	-105.2707	Lamiales	Bignoniaceae	*Catalpa sp.*	sp
Tree27	Intra-species	40.0100	-105.2721	Rosales	Cannabaceae	*Celtis occidentalis*	sp
Tree28	Intra-species	40.0092	-105.2690	Rosales	Cannabaceae	*Celtis occidentalis*	sp and indiv
Tree29	Intra-species	40.0092	-105.2690	Rosales	Cannabaceae	*Celtis occidentalis*	sp and indiv
Tree3	Intra-species	40.0083	-105.2705	Pinales	Pinaceae	*Abies concolor*	sp and indiv
Tree30	Intra-species	40.0098	-105.2734	Malvales	Malvaceae	*Tilia americana*	sp
Tree33	Intra-species	40.0091	-105.2746	Lamiales	Oleaceae	*Fraxinus pennsylvanica*	sp
Tree35	Intra-species	40.0090	-105.2755	Pinales	Pinaceae	*Pinus flexilis*	sp and indiv
Tree36	Intra-species	40.0090	-105.2755	Pinales	Pinaceae	*Pinus flexilis*	sp and indiv
Tree37	Intra-species	40.0078	-105.2730	Malvales	Malvaceae	*Tilia americana*	sp and indiv
Tree38	Intra-species	40.0078	-105.2730	Malvales	Malvaceae	*Tilia americana*	sp and indiv
Tree39	Intra-species	40.0078	-105.2730	Malvales	Malvaceae	*Tilia americana*	sp and indiv
Tree4	Intra-species	40.0083	-105.2705	Pinales	Pinaceae	*Abies concolor*	sp and indiv
Tree40	Intra-species	40.0073	-105.2733	Lamiales	Bignoniaceae	*Catalpa sp.*	sp and indiv
Tree41	Intra-species	40.0073	-105.2733	Lamiales	Bignoniaceae	*Catalpa sp.*	sp and indiv
Tree42	Intra-species	40.0073	-105.2733	Lamiales	Bignoniaceae	*Catalpa sp.*	sp and indiv
Tree43	Intra-species	40.0075	-105.2729	Sapindales	Sapindaceae	*Aesculus hippocastanum*	sp
Tree44	Intra-species	40.0096	-105.2708	Sapindales	Sapindaceae	*Aesculus hippocastanum*	sp and indiv
Tree45	Intra-species	40.0096	-105.2708	Sapindales	Sapindaceae	*Aesculus hippocastanum*	sp and indiv
Tree46	Intra-species	40.0068	-105.2726	Sapindales	Sapindaceae	*Acer platanoides*	sp
Tree47	Intra-species	40.0068	-105.2729	Sapindales	Sapindaceae	*Acer platanoides*	sp and indiv
Tree48	Intra-species	40.0068	-105.2729	Sapindales	Sapindaceae	*Acer platanoides*	sp and indiv
Tree49	Intra-species	40.0068	-105.2729	Sapindales	Sapindaceae	*Acer platanoides*	sp and indiv
Tree5	Intra-species	40.0083	-105.2706	Pinales	Pinaceae	*Picea pungens*	sp
Tree50	Intra-species	40.0069	-105.2726	Lamiales	Oleaceae	*Fraxinus pennsylvanica*	sp
Tree51	Intra-species	40.0076	-105.2719	Pinales	Pinaceae	*Abies concolor*	sp
Tree53	Intra-species	40.0079	-105.2706	Fabales	Fabaceae	*Cercis canadensis*	sp
Tree7	Intra-species	40.0089	-105.2699	Fabales	Fabaceae	*Cercis canadensis*	sp and indiv
Tree8	Intra-species	40.0089	-105.2699	Fabales	Fabaceae	*Cercis canadensis*	sp and indiv
Tree9	Intra-species	40.0087	-105.2699	Rosales	Cannabaceae	*Celtis occidentalis*	sp

Fig. S1. UPGMA dendrogram showing Kulczynski distances between bacterial communities within and across species for those 10 tree species where we examined replicate samples from the same tree and replicate samples from different individuals of the same tree species. 'Indiv' denotes samples collected from different individual trees of the same species, 'Rep' denotes replicate samples collected from a single tree.

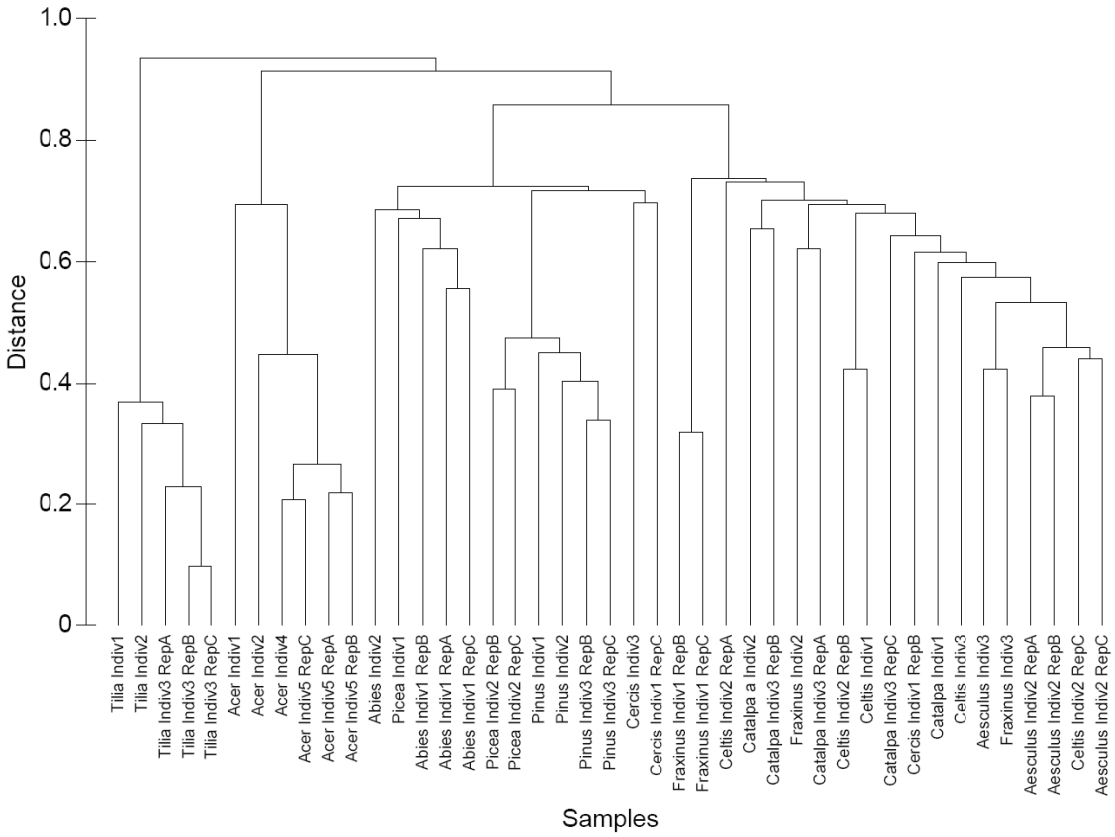

Fig. S2. Rarefaction curves showing the number of unique OTUs per sequencing effort for tree species sampled for the 'inter-species' study that are representative of phyllosphere communities with low, average, and high levels of bacterial diversity.

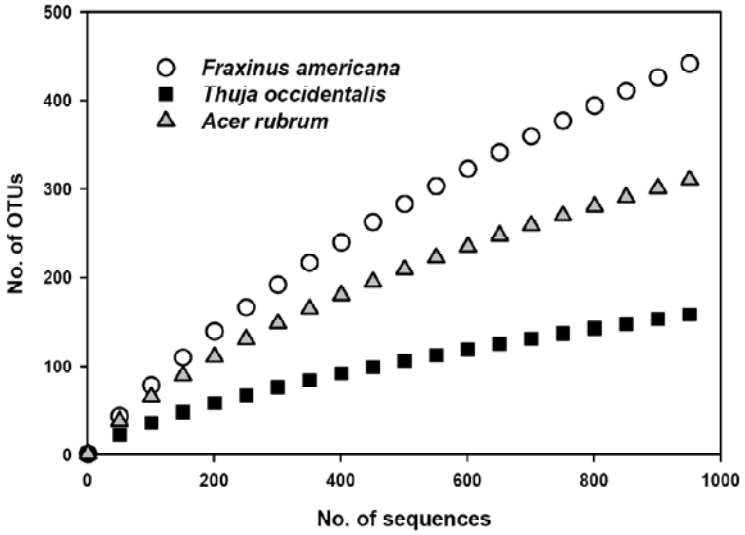

Fig. S3. NMDS plot with distances determined using the weighted Unifrac algorithm (a) and Kulczynski distance (b). Numbers correspond to the species numbers in table S1. This figure is identical to Figure 2, only labels have been added for each point.