Electronic supplementary material: Supplementary Table 1

Title: Genetic dissection of growth, wood basic density and gene expression in interspecific backcrosses of *Eucalyptus grandis* and *E. urophylla*

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Supplementary Table 1a. Summary of the framework linkage maps constructed for QTL analysis in the *E. grandis* backcross family

	***E. grandis* BC parent map**			**F_1 hybrid parent map**		
Linkage group	**Number of markers**	**Linkage group length (cM)**	**Mean distance between markers (cM)**	**Number of markers**	**Linkage group length (cM)**	**Mean distance between markers (cM)**
1	8	55.1	6.8	13	82.3	6.3
2	7	50.7	7.2	16	103.5	6.4
3	13	68.7	5.2	19	100.3	5.2
4	8	72.7	9.0	11	64.3	5.8
5	11	67.0	6.0	14	98.3	7.0
6	11	93.5	8.5	16	100.6	5.5
7	7	56.7	8.1	13	77.1	5.9
8	14	96.6	6.9	16	114.4	7.1
9	8	51.7	5.7	13	69.7	5.3
10	5	64.0	12.8	15	90.6	6.0
11	8	62.7	7.8	14	91.9	6.5
Total	**100**	**739.4**	**7.6**	**160**	**993.0**	**6.1**

BC, backcross; QTL, Quantitative trait locus.

Supplementary Table 1b. Markers used for QTL analysis, their positions and additive effects in the *E. grandis* backcross family**.**

***E. grandis* backcross parent**					**F1 hybrid of *E. grandis* BC family**				
Marker Name	**Linkage group (LG)**	**Map Position (cM)**	**Additive effect (SD, DBH)**	**Additive effect (SD, Density)**	**Marker Name**	**Linkage group (LG)**	**Map Position (cM)**	**Additive effect (SD, DBH)[a]**	**Additive effect (SD, Density)[a]**
ePt-568716	LG1	0	0.11	0.26	ePt-575150	LG1	0	0.08	0.07
ePt-638907	LG1	1.96	0.10	0.36	ePt-503701	LG1	5.42	0.14	-0.04
ePt-640949	LG1	8.16	0.06	0.21	ePt-566067	LG1	14.83	0.00	-0.06
ePt-571664	LG1	38.62	0.09	0.33	ePt-599667	LG1	16.6	-0.01	-0.04
ePt-641807	LG1	43.02	0.18	0.32	ePt-641525	LG1	28.49	0.04	0.02
ePt-503991	LG1	49.4	0.24	0.30	ePt-575761	LG1	33.3	0.13	0.06
ePt-569578	LG1	49.64	0.24	0.27	ePt-640361	LG1	38.12	0.17	-0.06
ePt-600503	LG1	55.11	0.16	0.28	ePt-563743	LG1	41.08	0.13	-0.12
ePt_565897	LG2	0	0.28	0.03	ePt-636576	LG1	43.65	0.18	-0.15
ePt-574079	LG2	13.07	0.09	0.21	ePt-569034	LG1	64.81	0.11	-0.39
ePt-639039	LG2	27.5	0.05	0.13	ePt-575252	LG1	77.66	0.02	-0.46
ePt-503604	LG2	30.44	0.13	0.20	ePt-599942	LG1	81.49	-0.01	-0.43
ePt-573099	LG2	34.67	0.00	0.26	ePt-565647	LG1	82.32	-0.01	-0.41
ePt-640294	LG2	38.64	0.03	0.35	ePt-565956	LG2	0	0.10	-0.02
ePt-568818	LG2	50.72	0.14	0.22	ePt-572376	LG2	10.68	0.12	-0.11
ePt-564331	LG3	0	0.13	0.01	ePt-503910	LG2	16.57	0.18	-0.07
ePt-503896	LG3	2.19	0.14	0.01	ePt-641662	LG2	24.01	0.23	-0.17
ePt-573951	LG3	15.3	0.19	0.14	ePt-575750	LG2	27.24	0.20	-0.13
ePt-567916	LG3	21.13	0.13	0.05	ePt*-503215	LG2	39.63	0.28	-0.27
ePt-599477	LG3	29.93	0.15	0.01	ePt-575211	LG2	44.82	0.25	-0.31
ePt-599675	LG3	34.14	0.13	0.05	ePt-640323	LG2	48.71	0.26	-0.34
ePt-640068	LG3	40.92	0.08	0.02	ePt-574654	LG2	51.72	0.22	-0.32
ePt-636852	LG3	45.7	0.05	0.08	ePt-639308	LG2	59.09	0.14	-0.28

ePt-564343	LG3	55.42	0.01	0.10	ePt-503601	LG2	71.56	0.17	-0.03
ePt-573955	LG3	57.48	0.01	0.10	ePt-568036	LG2	77.89	0.05	0.15
ePt-568204	LG3	61.92	0.01	0.19	ePt-571395	LG2	86.93	0.12	0.09
ePt-574838	LG3	65.11	0.00	0.14	ePt-571022	LG2	93.08	0.10	0.14
ePt-504847	LG3	68.72	0.02	0.09	ePt-503852	LG2	100	0.12	0.29
ePt_574316	LG4	0	0.12	0.18	ePt-644213	LG2	103.53	0.12	0.33
ePt-637257	LG4	5.39	0.18	0.13	ePt-566484	LG3	0	-0.12	-0.04
ePt-636733	LG4	9.09	0.18	0.11	ePt-574889	LG3	6.15	-0.07	0.01
ePt-568033	LG4	14.98	0.21	0.03	ePt-568037	LG3	9.43	-0.08	0.00
ePt-504594	LG4	21.75	0.15	0.00	ePt-640753	LG3	17.82	-0.21	0.01
ePt_637254	LG4	41.78	0.07	0.06	ePt-575640	LG3	25.99	-0.19	0.01
ePt_571480	LG4	55.48	0.07	0.05	ePt-575164	LG3	30.51	-0.19	0.10
ePt_575066	LG4	72.72	0.15	0.17	ePt-564572	LG3	38.75	0.08	0.11
ePt-564193	LG5	0	0.05	0.04	ePt-636770	LG3	44.26	0.03	0.16
ePt-641438	LG5	6.35	0.02	0.14	ePt-600457	LG3	47.06	0.07	0.19
ePt-573986	LG5	18.95	0.15	0.12	ePt-571501	LG3	50.46	0.14	0.24
ePt-643832	LG5	29.34	0.08	0.03	ePt-566052	LG3	54.58	0.16	0.33
ePt-572774	LG5	32.02	0.03	0.03	ePt-566700	LG3	60.28	0.21	0.35
ePt-573307	LG5	34.1	0.00	0.06	ePt-567607	LG3	67.41	0.05	0.37
ePt-638066	LG5	42.99	0.08	0.18	ePt-600338	LG3	74.53	0.10	0.41
ePt-567949	LG5	46.59	0.01	0.15	ePt-637542	LG3	77.3	0.06	0.37
ePt-573829	LG5	51.93	0.02	0.14	ePt-566415	LG3	89.63	0.17	0.35
ePt-574720	LG5	54.8	0.03	0.10	ePt-637998	LG3	94.98	0.14	0.27
ePt-573754	LG5	67	0.09	0.12	ePt-573026	LG3	97.55	0.17	0.25
ePt-599851	LG6	0	0.03	0.09	ePt-572844	LG3	100.27	0.16	0.28
ePt-575429	LG6	8.74	0.07	0.05	ePt-570753	LG4	0	-0.19	-0.42
ePt-567365	LG6	30.47	0.04	0.20	ePt-636515	LG4	7.48	-0.21	-0.55
ePt-568253	LG6	34.52	0.09	0.22	ePt-643677	LG4	14.17	-0.11	-0.51
ePt-644411	LG6	45.33	0.08	0.09	ePt-599702	LG4	20.49	-0.11	-0.27
ePt-569463	LG6	52.03	0.05	0.12	ePt-568705	LG4	23.15	-0.07	-0.10

ePt-642231	LG6	79.55	0.08	0.02	ePt-504738	LG4	24.71	-0.10	-0.17
ePt-639725	LG6	83.68	0.08	0.05	ePt-599247	LG4	31.41	0.26	-0.21
ePt-637084	LG6	86.55	0.04	0.09	ePt-637034	LG4	41.81	0.34	-0.10
ePt-569222	LG6	89.61	0.07	0.07	ePt-503674	LG4	49.78	0.26	-0.08
ePt-570972	LG6	93.49	0.08	0.07	ePt-640754	LG4	56.51	-0.24	-0.07
ePt-643992	LG7	0	0.01	0.01	ePt-566267	LG4	64.32	-0.19	-0.16
ePt-636624	LG7	3.36	0.01	0.01	ePt-570054	LG5	0	-0.03	-0.11
ePt-637902	LG7	12.11	0.13	0.11	ePt-568635	LG5	4.23	0.04	-0.05
ePt-641995	LG7	16.44	0.15	0.15	ePt-643259	LG5	10.38	0.08	-0.04
ePt-641488	LG7	44.96	0.07	0.22	ePt-565193	LG5	23.05	0.25	0.03
ePt-568311	LG7	51.48	0.10	0.24	ePt-643070	LG5	28.59	0.35	0.05
ePt-504215	LG7	56.66	0.13	0.28	ePt-575357	LG5	31.91	0.30	0.02
ePt-599919	LG8	0	0.04	0.06	ePt-575685	LG5	41.23	0.24	0.09
ePt-639224	LG8	2.18	0.09	0.02	ePt-639908	LG5	48.33	0.26	0.13
ePt-567487	LG8	12.24	0.15	0.05	ePt-574028	LG5	52.25	0.20	0.12
ePt-564377	LG8	39.91	0.09	0.06	ePt-567731	LG5	58.84	0.16	0.00
ePt-564966	LG8	47.27	0.08	0.05	ePt-567459	LG5	76.75	0.05	-0.07
ePt-564161	LG8	51.9	0.02	0.04	ePt-639226	LG5	82.45	-0.04	-0.03
ePt-565513	LG8	60.83	0.13	0.03	ePt-643170	LG5	97.39	0.00	-0.14
ePt-600706	LG8	71.57	0.31	0.04	ePt-639423	LG5	98.27	0.00	-0.14
ePt-503945	LG8	77.27	0.29	0.07	ePt-637594	LG6	0	0.13	0.43
ePt-565432	LG8	80.7	0.29	0.07	ePt-573401	LG6	3.23	0.10	0.34
ePt-641108	LG8	85.95	0.32	0.16	ePt-641672	LG6	12.62	-0.23	0.01
ePt-644277	LG8	90.41	0.25	0.21	ePt-563531	LG6	28.9	-0.44	0.03
ePt-563899	LG8	94.43	0.19	0.20	ePt-504039	LG6	38.3	-0.40	0.00
ePt-639035	LG8	96.58	0.15	0.12	ePt-567750	LG6	42.38	-0.01	0.07
ePt-636543	LG9	0	0.03	0.20	ePt-571092	LG6	54.4	0.21	0.16
ePt-575346	LG9	4.51	0.01	0.13	ePt-565151	LG6	65.59	0.29	0.09
ePt-569854	LG9	25.58	0.35	0.09	ePt-567354	LG6	77.45	0.22	0.09
ePt-639626	LG9	28.61	0.40	0.17	ePt-600703	LG6	79.04	0.22	0.12

ePt-568194	LG9	29.57	0.43	0.16	ePt-569470	LG6	83.83	0.30	0.22
ePt-572398	LG9	33.94	0.47	0.16	ePt-565909	LG6	89.21	-0.12	0.23
ePt_574609	LG9	38.05	0.49	0.16	ePt-643314	LG6	101.27	-0.36	0.21
ePt_574609	LG9	39.02	0.50	0.18	ePt-566280	LG6	105.84	-0.35	0.12
ePt-568614	LG9	51.72	0.49	0.23	ePt-565981	LG6	110.28	-0.32	0.11
ePt-642820	LG10	0	0.02	0.23	ePt-638034	LG6	110.61	-0.30	0.11
ePt-636600	LG10	0.41	0.00	0.23	ePt-504439	LG7	0	-0.20	-0.26
ePt-644280	LG10	13.69	0.11	0.18	ePt-641519	LG7	4.83	-0.18	-0.24
ePt-642599	LG10	15.11	0.07	0.21	ePt-572732	LG7	10.66	-0.02	-0.25
ePt-573845	LG10	63.96	0.01	0.09	ePt-563224	LG7	17.75	0.14	-0.14
ePt-644058	LG11	0	0.05	0.22	ePt-575662	LG7	19.78	0.15	-0.15
ePt-571551	LG11	3.99	0.02	0.20	ePt-639533	LG7	29.8	0.14	-0.34
ePt-573334	LG11	12.95	0.08	0.24	ePt-575339	LG7	34.2	0.12	-0.31
ePt-570091	LG11	16.77	0.13	0.23	ePt-571000	LG7	36.6	0.14	-0.36
ePt-575702	LG11	28.16	0.19	0.15	ePt-641467	LG7	41.93	0.13	-0.23
ePt-644439	LG11	52.37	0.08	0.07	ePt-574707	LG7	55.2	0.17	-0.05
ePt-637002	LG11	57.05	0.05	0.11	ePt-643427	LG7	66.4	0.17	0.03
ePt-637423	LG11	62.71	0.04	0.11	ePt-567735	LG7	76.3	0.25	0.03
					ePt-572421	LG7	77.06	0.25	0.03
					ePt-568594	LG8	0	0.29	-0.27
					ePt-570544	LG8	11.75	0.30	-0.11
					ePt-569469	LG8	19.8	0.27	-0.04
					ePt-575608	LG8	26.74	0.12	0.02
					ePt-503461	LG8	40.8	-0.03	0.21
					ePt-568180	LG8	50.94	-0.15	0.31
					ePt-641830	LG8	62.84	-0.12	0.35
					ePt-568670	LG8	69.05	-0.08	0.26
					ePt-565338	LG8	76.5	-0.08	0.18
					ePt-566291	LG8	84.88	-0.07	0.06
					ePt-569640	LG8	88.03	-0.12	0.02

ePt-642637	LG8	92.71	0.01	0.09
ePt-562796	LG8	99.34	0.03	0.16
ePt-641236	LG8	103.41	0.03	0.21
ePt-566609	LG8	106.33	0.04	0.14
ePt-600718	LG8	114.44	0.08	0.10
ePt-640454	LG9	0	0.09	0.41
ePt-640611	LG9	3.54	0.11	0.35
ePt-640696	LG9	9.01	0.07	0.26
ePt-599858	LG9	9.73	0.09	0.27
ePt-570618	LG9	20.73	0.05	-0.26
ePt-639550	LG9	37.28	0.07	-0.44
ePt-639323	LG9	39.57	0.27	-0.49
ePt-638960	LG9	48.06	0.30	-0.44
ePt-641847	LG9	53.59	0.37	-0.30
ePt-572570	LG9	60.26	0.29	-0.31
ePt-640418	LG9	63.18	0.34	-0.33
ePt-637344	LG9	69.01	0.29	-0.29
ePt-639912	LG9	69.71	-0.04	-0.25
ePt-566121	LG10	0	0.06	-0.14
ePt-575040	LG10	13.97	0.01	-0.25
ePt-504458	LG10	20.02	-0.05	-0.26
ePt-572348	LG10	26.49	0.05	-0.16
ePt-637656	LG10	29.65	0.04	-0.23
ePt-568195	LG10	31.22	0.05	-0.18
ePt-568621	LG10	44.31	0.09	-0.28
ePt-562786	LG10	49.28	0.01	-0.36
ePt*-640899	LG10	67.97	0.00	-0.24
ePt-570411	LG10	71.1	-0.05	-0.13
ePt-568118	LG10	72.53	0.04	-0.15
ePt-644043	LG10	76.06	-0.02	-0.15

ePt-503290	LG10	77.79	0.46	-0.14
ePt-639253	LG10	87	0.59	-0.07
ePt-573127	LG10	90.59	0.63	-0.07
ePt-641551	LG11	0	0.25	-0.07
ePt-569538	LG11	11.06	0.20	-0.05
ePt-504138	LG11	24.31	0.21	-0.08
ePt-600428	LG11	28.43	0.24	0.00
ePt-640986	LG11	37.68	0.20	0.04
ePt-599625	LG11	41.1	0.22	0.00
ePt-575307	LG11	48.38	0.19	0.13
ePt-637982	LG11	52.39	0.16	0.18
ePt-599317	LG11	59.2	0.12	0.19
ePt-642570	LG11	69.52	0.03	0.08
ePt-575571	LG11	78.96	-0.14	0.08
ePt-638416	LG11	82.59	-0.20	0.09
ePt-641591	LG11	86.22	-0.17	0.08
ePt-503687	LG11	91.91	-0.18	0.13

SD, Standard deviation. QTL effects at marker positions based on composite interval mapping (Model 6, QTL Cartographer v2.5).

[a] Marker data in the F1 hybrid maps were recoded so that positive and negative additive effect values on all linkage groups are associated with the effect of replacement of the *E. grandis* allele with the *E. urophylla* allele in backcross progeny. Linkage phases were arbitrary from one linkage group to the next for the backcross parents and the directions of the effect are therefore not indicated for these parents.