Origins, diversity and naturalization of *Eucalyptus globulus* (Myrtaceae) in California

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SUPPLEMENTARY MATERIALS

Figure S1: The number of sites in each naturalisation class (grey) and the number of sites in each naturalisation class for the most common haplotype represented (S112, red).

Naturalization was coded on a six-point scale where 0 = no evidence of any naturalization, 1 = limited naturalization with fewer than 10 wildlings present, 2 = some naturalization with 10-20 wildlings present, 3 = moderate naturalization with 20-30 wildlings present, 4 = abundant naturalization with 30-40 wildlings present, and 5 = extensive naturalization with over 40 wildlings present.

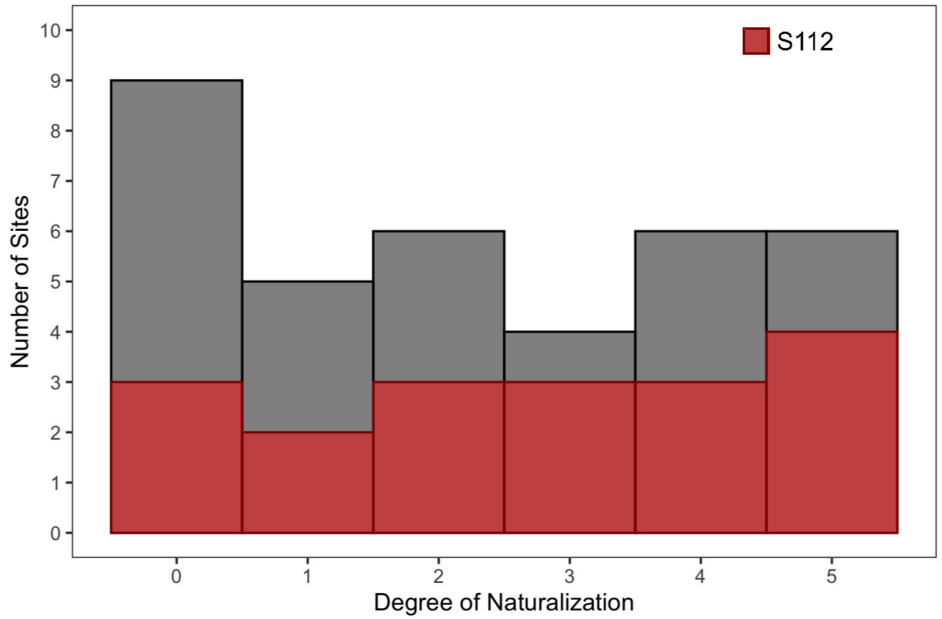

Table S1: Collection details of Californian *Eucalyptus globulus* samples, their chloroplast haplotypes and region of native origin assignments. The county of origin, latitude and longitude of the site from where the Californian trees were sampled are given (blanks geographic coordinates indicates replicate sample/s from the same site) and stand naturalisation score (0-5). Sites with no score were not assessed for naturalisation. The individual tree sample number, whether the tree was an adult or juvenile, and the chloroplast DNA (cpDNA) haplotype and microsatellite (SSR) assignment to their native region of origin based on Australian databases (see text for details) are shown for each Californian tree genotyped. The percentage probability of SSR regional assignment of each tree sampled is derived from the STRUCTURE analysis (predefined regions were: Victoria, Furneaux, King Island/Western Tasmania, and Eastern Tasmania), with the most likely region indicated in red. The cpDNA assignment refers to the geographic region where the haplotype group (S or Cc) have been found in their native distribution (Tas = Tasmania, Furn = Furneaux Islands, Vic = Victoria; see [46]) and where the specific cpDNA haplotype has only been found in a particular locality within a region, the locality is indicated in parentheses (Channel = D'Entrecasteaux Channel area). Regions are mapped in Figure 3. Individuals were included in the naturalisation analyses if they were from a site with a naturalisation score, were adults, and had a unique haplotype/SSR assignment for the site. *Haplotypes identified only in Californian samples. Note that S87 has been found in *Eucalyptus morrisbyi* in SE Tasmania, but has not yet been found in *E. globulus*.

Grove				Sample code	Adult/ Juvenile	cpDNA Haplotype	cpDNA Assignment	SSR Assignment			
Californian County	Latitude° (N)	Longitude° (E)	Naturalization score					Vic	Furn	KI/ WTas	Etas
Alameda	37.87201	-122.26366	-	CA56	A	S112	CA and ornamentals	42	15	16	28
Alameda	37.87576	-122.25513	2	CA57	A	S112	CA and ornamentals	11	53	12	24
				CA58	J	S112	CA and ornamentals	8	55	9	28
Glenn	39.74656	-122.11270	0	CA39	A	S05	SE Tas (Channel)	10	7	15	67
Humboldt	40.52915	-124.03646	1	CA40	A	S145*	California	9	25	14	53
Humboldt	40.32162	-123.91949	2	CA41	J	S112	CA and ornamentals	16	15	30	39
				CA42	J	S112	CA and ornamentals	27	20	17	37
Los Angeles	34.17392	-118.55137	-	CA23	A	S112	CA and ornamentals	12	57	14	17
Marin	37.98854	-122.52982	3	CA55	A	S112	CA and ornamentals	17	16	35	33
				CA54	J	S112	CA and ornamentals	18	20	30	32
Mendocino	39.67885	-123.79011	2	CA43	A	S112	CA and ornamentals	25	29	22	24
Mendocino	39.53466	-123.75636	5	CA45	A	S112	CA and ornamentals	17	21	19	43
				CA44	J	S112	CA and ornamentals	14	28	20	38
Mendocino	39.30524	-123.79764	1	CA46	A	Cc18	KI & E Tas	25	10	35	30
Mendocino	39.27472	-123.79250	5	CA47	A	Cc56	SE Tas	19	18	24	40
				CA48	J	Cc56	SE Tas	12	34	18	36
Mendocino	39.03572	-123.39220	0	CA49	A	S112	CA and ornamentals	18	23	19	40
Mendocino	38.99980	-123.36043	-	CA50	A	S87	*E. morrisbyi* (SE Tas)	18	44	18	21
Monterey	36.28530	-121.19285	2	CA80	A	Cc41	KI & SE Tas	18	15	16	51
Monterey	36.89058	-121.69950	4	CA74	A	S43	SE Tas	20	16	11	54
				CA75	J	S43	SE Tas	13	15	13	59
Riverside	33.78588	-117.49131	-	CA33	A	S112	CA and ornamentals	20	29	22	29
Riverside	33.77746	-117.48582	1	CA34	A	S112	CA and ornamentals	36	14	19	31
San Benito	36.88892	-121.59896	5	CA76	A	S112	CA and ornamentals	13	21	15	51
San Benito	36.86038	-121.60340	5	CA78	A	-	-	15	15	14	56
				CA77	J	S43	SE Tas	9	13	12	67

San Diego	33.38264	-117.57673	4	CA24	A	S112	CA and ornamentals	12	34	21	33
				CA25	J	S112	CA and ornamentals	19	34	22	25
San Diego	33.27324	-117.44473	0	CA26	A	S112	CA and ornamentals	25	12	12	52
San Diego	32.84749	-117.27231	-	CA27	A	S112	CA and ornamentals	14	19	41	26
San Diego	32.87579	-117.24207	-	CA28	A	S112	CA and ornamentals	25	40	18	17
San Diego	32.88167	-117.24292	-	CA29	A	S112	CA and ornamentals	20	21	26	33
San Diego	32.85335	-117.24421	2	CA30	A	S87	*E. morrisbyi (SE Tas)*	14	37	14	36
				CA31	J	Cc41	KI & SE Tas	12	28	19	41
San Diego	32.94791	-117.26145	-	CA32	A	S129	SE Tas (Channel)	10	26	27	38
San Francisco	37.80853	-122.36403	4	CA59	A	Cc05	SE Tas	25	36	18	21
San Francisco	37.81290	-122.37033	4	CA61	A	S112	CA and ornamentals	17	28	23	32
San Francisco	37.77174	-122.45232	-	CA62	A	S112	CA and ornamentals	13	17	14	57
San Francisco	37.77098	-122.47133	2	CA63	A	S112	CA and ornamentals	21	27	15	37
San Francisco	37.73535	-122.47697	2	CA64	J	-	-	21	17	29	33
San Luis Obispo	35.04510	-120.49368	3	CA03	A	S112	CA and ornamentals	13	16	26	45
San Mateo	37.44293	-122.26386	1	CA65	A	S112	CA and ornamentals	12	30	25	33
				CA66	J	S43	SE Tas	17	17	42	24
Sacramento	38.53661	-121.49892	-	CA35	A	S112	CA and ornamentals	16	25	22	38
				CA36	A	S112	CA and ornamentals	19	28	16	37
				CA37	A	S112	CA and ornamentals	15	47	14	24
Santa Barbara	34.86496	-120.39674	4	CA04	A	S112	CA and ornamentals	22	20	10	48
Santa Barbara	34.47437	-120.20243	5	CA05	A	S112	CA and ornamentals	32	26	12	30
				CA06	J	S112	CA and ornamentals	48	25	11	16
				CA07	A	S112	CA and ornamentals	20	12	27	41
Santa Barbara	34.47304	-120.20601	3	CA09	A	S43	SE Tas	32	17	12	39
				CA10	J	Cc56	SE Tas	25	8	32	35
Santa Barbara	34.46035	-120.00316	3	CA11	A	S112	CA and ornamentals	13	20	37	31
Santa Barbara	34.44569	-119.96201	4	CA13	A	S43	SE Tas	30	22	24	24
				CA14	J	S43	SE Tas	45	16	18	21

Santa Barbara	34.42887	-119.89676	3	CA16	A	Cc41	KI & SE Tas	8	15	8	69
				CA17	J	S143*	California	19	35	19	27
				CA18	A	Cc06	NE Tas	12	31	14	44
				CA19	A	S43	SE Tas	19	42	12	26
Santa Barbara	34.42055	-119.60059	-	CA21	A	-	-	19	28	29	25
Santa Clara	37.42931	-122.17810	1	CA67	A	S05	SE Tas (Channel)	10	18	15	57
Santa Clara	37.39802	-122.18888	0	CA68	A	Cc41	KI & SE Tas	15	30	23	33
Santa Clara	37.24541	-121.96333	0	CA69	A	S129	SE Tas (Channel)	12	31	34	24
Santa Cruz	36.98359	-121.93779	5	CA70	A	S112	CA and ornamentals	14	38	10	38
Santa Cruz	36.94668	-121.84882	5	CA73	J	S146*	California	15	11	18	56
Sonoma	38.74845	-122.96161	0	CA51	A	Cc56	SE Tas	10	15	12	63
Sonoma	38.39360	-122.71622	0	CA52	A	S112	CA and ornamentals	8	11	17	63
Sonoma	38.28507	-122.68859	0	CA53	A	S43	SE Tas	13	12	19	57
Ventura	34.28275	-119.31407	-	CA22	A	S144*	California	41	13	15	32
Yuba	39.02644	-121.54525	0	CA38	A	S64	E Tas	28	17	19	36

Note: Locations are given by county with GPS coordinates of exact collection locations. Naturalization is coded as detailed in Figure S1. CpDNA haplotypes are described in Freeman et al. [44] and in Table A1.

Table S2: Genetic diversity statistics per population and per SSR locus for the Californian and Australian native stand samples of *Eucalyptus globulus.*

Population	Locus	*n*	N_a	N_e	H_e	H_o	F_{IS}	A_0
Eastern Tasmania	EMBRA19	191	14	3.04	0.54	0.67	0.19	0.08
	EMBRA30	196	24	7.95	0.85	0.88	0.03	0.02
	EMCRC2	200	18	6.22	0.72	0.84	0.14	0.07
	EMCRC7	194	15	6.79	0.75	0.86	0.12	0.07
	EMCRC10	198	17	9.88	0.57	0.90	0.37	0.18
	EMCRC11	201	18	8.67	0.84	0.89	0.05	0.03
King Island/Western Tasmania	EMBRA19	103	6	2.56	0.40	0.61	0.35	0.13
	EMBRA30	103	18	6.83	0.80	0.86	0.07	0.02
	EMCRC2	98	12	2.19	0.44	0.55	0.19	0.04
	EMCRC7	97	14	5.77	0.76	0.83	0.08	0.03
	EMCRC10	101	13	3.80	0.59	0.74	0.19	0.09
	EMCRC11	103	20	5.94	0.75	0.84	0.10	0.07
Furneaux	EMBRA19	51	6	4.19	0.41	0.77	0.46	0.20
	EMBRA30	52	14	6.00	0.83	0.84	0.01	0.00
	EMCRC2	51	13	6.99	0.90	0.87	-0.05	0.00
	EMCRC7	52	12	4.75	0.71	0.80	0.10	0.06
	EMCRC10	52	11	5.42	0.58	0.82	0.29	0.14
	EMCRC11	46	7	4.68	0.72	0.79	0.09	0.02
Victoria	EMBRA19	212	11	3.73	0.50	0.73	0.32	0.14
	EMBRA30	209	28	12.64	0.82	0.92	0.11	0.05
	EMCRC2	201	17	6.69	0.76	0.85	0.11	0.05
	EMCRC7	203	16	3.18	0.58	0.69	0.16	0.08
	EMCRC10	204	15	5.88	0.60	0.83	0.28	0.13
	EMCRC11	209	16	7.12	0.81	0.86	0.05	0.02
California	EMBRA19	42	3	1.62	0.31	0.39	0.19	0.06
	EMBRA30	68	18	7.29	0.72	0.87	0.16	0.08
	EMCRC2	62	10	3.55	0.63	0.72	0.12	0.03

EMCRC7	69	11	5.22	0.64	0.81	0.21	0.08
EMCRC10	67	10	5.55	0.49	0.83	0.40	0.18
EMCRC11	70	10	3.99	0.71	0.75	0.05	0.04
Mean	123.50	13.90	5.60	0.66	0.79	0.16	0.07
SE	12.06	0.95	0.42	0.03	0.02	0.02	0.01

Note: SE Standard error, *n* the number of samples used for SSR analysis, N_a mean observed number of alleles per locus, N_e mean effective number of alleles per locus, H_o observed heterozygosity, H_e expected heterozygosity, F_{IS} inbreeding coefficient, A_0 frequency of null alleles.