10.1071/BT13209_AC
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Australian Journal of Botany, 2014, 62(2), 164–174

SUPPLEMENTARY MATERIAL

Genetic diversity and biogeography of the boab *Adansonia gregorii* (Malvaceae: Bombacoideae)

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Appendix 1. Collection details of *Adansonia gregorii* samples and groupings into populations inferred from sPCA

Collector	Collection number	Latitude	Longitude	Population
J. Pettigrew	121	16.54°S	126.13°E	West Kimberley
J. Pettigrew	122	16.54°S	126.13°E	West Kimberley
J. Pettigrew	123	16.67°S	125.96°E	West Kimberley
J. Pettigrew	124	16.68°S	125.96°E	West Kimberley
J. Pettigrew	125	16.80°S	125.85°E	West Kimberley
J. Pettigrew	126	16.80°S	125.85°E	West Kimberley
J. Pettigrew	127	16.80°S	125.24°E	West Kimberley
J. Pettigrew	128	16.90°S	125.76°E	West Kimberley
J. Pettigrew	129	16.92°S	125.72°E	West Kimberley
J. Pettigrew	130	16.96°S	125.61°E	West Kimberley
J. Pettigrew	131	17.14°S	125.27°E	West Kimberley
J. Pettigrew	132	17.13°S	125.21°E	West Kimberley
J. Pettigrew	133	17.11°S	125.18°E	West Kimberley
J. Pettigrew	113	15.79°S	127.88°E	North-east Coast
J. Pettigrew	114	15.72°S	127.83°E	North-east Coast
J. Pettigrew	115	15.77°S	127.77°E	North-east Coast
J. Pettigrew	116	15.77°S	127.71°E	North-east Coast
J. Pettigrew	117	15.96°S	127.06°E	North-east Coast
J. Pettigrew	118	16.19°S	127.24°E	North-east Coast
J. Pettigrew	120	16.19°S	127.24°E	North-east Coast
J. Pettigrew	179	17.92°S	127.82°E	East Kimberley
J. Pettigrew	180	17.82°S	127.81°E	East Kimberley
J. Pettigrew	182	17.65°S	127.83°E	East Kimberley
J. Pettigrew	184	17.51°S	127.92°E	East Kimberley
J. Pettigrew	185	17.43°S	127.99°E	East Kimberley
J. Pettigrew	186	17.35°S	128.05°E	East Kimberley
J. Pettigrew	188	17.11°S	128.19°E	East Kimberley
J. Pettigrew	134	17.12°S	125.15°E	West Kimberley
J. Pettigrew	135	17.15°S	125.07°E	West Kimberley
J. Pettigrew	136	17.15°S	125.01°E	West Kimberley
J. Pettigrew	137	17.16°S	124.95°E	West Kimberley
J. Pettigrew	138	17.25°S	124.87°E	West Kimberley
J. Pettigrew	139	17.32°S	124.84°E	West Kimberley
J. Pettigrew	140	17.44°S	124.59°E	West Kimberley
J. Pettigrew	141	17.44°S	124.53°E	West Kimberley
J. Pettigrew	142	17.44°S	124.41°E	West Kimberley
J. Pettigrew	143	17.44°S	124.31°E	West Kimberley
J. Pettigrew	144	17.45°S	124.23°E	West Kimberley
J. Pettigrew	145	17.44°S	124.17°E	West Kimberley
J. Pettigrew	146	17.41°S	124.05°E	West Kimberley
J. Pettigrew	147	17.39°S	123.96°E	West Kimberley
J. Pettigrew	148	17.37°S	123.84°E	West Kimberley
J. Pettigrew	149	17.35°S	123.74°E	West Kimberley
J. Pettigrew	150	17.35°S	123.67°E	West Kimberley
J. Pettigrew	151	17.32°S	123.65°E	West Kimberley
J. Pettigrew	152	17.31°S	123.64°E	West Kimberley
J. Pettigrew	153	17.42°S	123.73°E	West Kimberley

J. Pettigrew	154	17.58°S	123.74°E	West Kimberley
J. Pettigrew	155	17.70°S	123.68°E	West Kimberley
J. Pettigrew	156	17.73°S	123.57°E	West Kimberley
J. Pettigrew	157	17.67°S	123.44°E	West Kimberley
J. Pettigrew	163	17.63°S	123.74°E	West Kimberley
J. Pettigrew	164	17.66°S	123.86°E	West Kimberley
J. Pettigrew	165	17.76°S	124.02°E	West Kimberley
J. Pettigrew	166	17.81°S	124.10°E	West Kimberley
J. Pettigrew	167	17.82°S	124.22°E	West Kimberley
J. Pettigrew	168	17.82°S	124.23°E	West Kimberley
J. Pettigrew	169	17.85°S	124.35°E	West Kimberley
J. Pettigrew	170	17.84°S	124.46°E	West Kimberley
J. Pettigrew	171	17.88°S	124.60°E	West Kimberley
J. Pettigrew	172	17.91°S	124.71°E	West Kimberley
J. Pettigrew	173	17.94°S	124.81°E	West Kimberley
J. Pettigrew	174	17.94°S	124.81°E	West Kimberley
J. Pettigrew	175	17.97°S	125.01°E	West Kimberley
J. Pettigrew	176	17.96°S	125.12°E	West Kimberley
J. Pettigrew	177	18.01°S	125.31°E	West Kimberley
J. Pettigrew	178	18.11°S	125.70°E	West Kimberley
J. Pettigrew	158	17.67°S	123.30°E	West Kimberley
J. Pettigrew	159	17.64°S	123.16°E	West Kimberley
J. Pettigrew	160	17.94°S	122.24°E	West Kimberley
K. Bell	81[A]	17.70°S	123.53°E	West Kimberley
K. Bell	82[A]	17.70°S	123.53°E	West Kimberley
J. Pettigrew	100	14.39°S	126.01°E	North Coast
J. Pettigrew	101	14.56°S	125.99°E	North Coast
J. Pettigrew	102	14.56°S	125.99°E	North Coast
J. Pettigrew	104	14.38°S	126.64°E	North Coast
J. Pettigrew	105	14.16°S	126.19°E	North Coast
J. Pettigrew	107	14.21°S	126.15°E	North Coast
J. Pettigrew	108	14.21°S	126.15°E	North Coast
J. Pettigrew	109	14.24°S	126.12°E	North Coast
J. Pettigrew	110	14.24°S	126.09°E	North Coast
J. Pettigrew	111	14.24°S	126.07°E	North Coast
J. Pettigrew	216	14.33°S	125.98°E	North Coast
J. Pettigrew	217	14.39°S	125.98°E	North Coast
J. Pettigrew	218	14.39°S	125.98°E	North Coast
J. Pettigrew	219	14.45°S	125.99°E	North Coast
J. Pettigrew	220	14.45°S	125.99°E	North Coast
J. Pettigrew	71	13.91°S	127.06°E	North Coast
J. Pettigrew	73	13.81°S	126.77°E	North Coast
J. Pettigrew	75	13.98°S	126.83°E	North Coast
J. Pettigrew	76	13.94°S	126.69°E	North Coast
J. Pettigrew	77	13.99°S	126.71°E	North Coast
J. Pettigrew	78	13.99°S	126.71°E	North Coast
J. Pettigrew	79	14.02°S	126.72°E	North Coast
J. Pettigrew	80	14.02°S	126.73°E	North Coast
J. Pettigrew	81	14.06°S	126.74°E	North Coast
J. Pettigrew	82	14.12°S	126.72°E	North Coast

J. Pettigrew	84	14.12°S	126.68°E	North Coast
J. Pettigrew	85	14.12°S	126.68°E	North Coast
J. Pettigrew	90	14.24°S	126.61°E	North Coast
J. Pettigrew	91	14.23°S	126.60°E	North Coast
J. Pettigrew	92	14.23°S	126.60°E	North Coast
J. Pettigrew	93	14.21°S	126.59°E	North Coast
J. Pettigrew	94	14.15°S	126.52°E	North Coast
J. Pettigrew	95	14.10°S	126.5°E	North Coast
J. Pettigrew	96	14.06°S	126.47°E	North Coast
J. Pettigrew	97	14.02°S	126.40°E	North Coast
J. Pettigrew	98	14.05°S	126.38°E	North Coast
J. Pettigrew	99	14.05°S	126.38°E	North Coast
J. Pettigrew	221	15.10°S	125.01°E	North-west Coast
J. Pettigrew	222	15.10°S	125.00°E	North-west Coast
J. Pettigrew	223	15.44°S	124.63°E	North-west Coast
J. Pettigrew	224	15.43°S	124.61°E	North-west Coast
J. Pettigrew	225	15.43°S	124.62°E	North-west Coast
J. Pettigrew	226	15.42°S	124.68°E	North-west Coast
J. Pettigrew	227	15.37°S	124.95°E	North-west Coast
J. Pettigrew	228	15.37°S	124.95°E	North-west Coast
J. Pettigrew	229	15.37°S	124.95°E	North-west Coast
J. Pettigrew	230	15.36°S	125.00°E	North-west Coast
J. Pettigrew	231	15.36°S	125.00°E	North-west Coast
J. Pettigrew	232	15.93°S	124.42°E	North-west Coast
J. Pettigrew	233	15.93°S	124.42°E	North-west Coast
J. Pettigrew	234	15.93°S	124.42°E	West Kimberley
J. Pettigrew	235	15.93°S	124.42°E	West Kimberley
J. Pettigrew	236	15.93°S	124.42°E	West Kimberley
J. Pettigrew	237	15.93°S	124.42°E	West Kimberley
J. Pettigrew	238	15.93°S	124.42°E	West Kimberley
J. Pettigrew	239	15.93°S	124.42°E	West Kimberley
J. Pettigrew	240	16.07°S	124.47°E	West Kimberley
J. Pettigrew	241	15.94°S	124.59°E	West Kimberley
J. Pettigrew	242	15.91°S	124.67°E	West Kimberley
J. Pettigrew	243	15.90°S	124.70°E	West Kimberley
J. Pettigrew	244	15.90°S	124.70°E	West Kimberley
J. Pettigrew	245	15.90°S	124.70°E	West Kimberley
J. Pettigrew	246	15.90°S	124.80°E	West Kimberley
J. Pettigrew	70	13.91°S	127.06°E	North-east Coast
J. Pettigrew	62	14.12°S	127.52°E	North-east Coast
J. Pettigrew	63	14.15°S	127.60°E	North-east Coast
J. Pettigrew	64	14.26°S	127.71°E	North-east Coast
J. Pettigrew	66	14.40°S	127.81°E	North-east Coast
J. Pettigrew	67	14.42°S	127.80°E	North-east Coast
J. Pettigrew	69	14.40°S	127.82°E	North-east Coast
J. Pettigrew	190	16.93°S	128.25°E	East Kimberley
J. Pettigrew	192	16.77°S	128.29°E	East Kimberley
K. Bell	110	16.06°S	129.09°E	East Kimberley
K. Bell	111[B]	16.06°S	129.10°E	East Kimberley
K. Bell	112	19.56°S	129.10°E	East Kimberley

K. Bell	113	16.06°S	129.11°E	East Kimberley
K. Bell	122	15.74°S	130.51°E	East Kimberley
K. Bell	123	15.74°S	130.51°E	East Kimberley
J. Pettigrew	194	16.53°S	128.20°E	East Kimberley
J. Pettigrew	196	16.36°S	128.22°E	East Kimberley
J. Pettigrew	198	16.18°S	128.38°E	East Kimberley
J. Pettigrew	200	15.99°S	128.43°E	East Kimberley
J. Pettigrew	248	15.79°S	125.71°E	East Kimberley
J. Pettigrew	251	15.76°S	128.11°E	East Kimberley
J. Pettigrew	252	15.77°S	128.19°E	East Kimberley
J. Pettigrew	253	15.75°S	128.22°E	East Kimberley
J. Pettigrew	254	15.75°S	128.38°E	East Kimberley
J. Pettigrew	29	15.94°S	128.95°E	East Kimberley
J. Pettigrew	30	15.82°S	128.78°E	East Kimberley
J. Pettigrew	31	15.77°S	128.62°E	East Kimberley
J. Pettigrew	32	15.81°S	128.50°E	East Kimberley
J. Pettigrew	34	15.82°S	128.48°E	East Kimberley
J. Pettigrew	35	15.87°S	128.38°E	East Kimberley
J. Pettigrew	37	15.77°S	128.30°E	East Kimberley
J. Pettigrew	38	15.74°S	128.27°E	East Kimberley
J. Pettigrew	39	15.64°S	128.24°E	East Kimberley
J. Pettigrew	53	15.83°S	127.92°E	East Kimberley
J. Pettigrew	54	15.87°S	127.97°E	East Kimberley
J. Pettigrew	55	15.90°S	128.00°E	East Kimberley
J. Pettigrew	56	15.92°S	128.05°E	East Kimberley
J. Pettigrew	57	15.91°S	128.17°E	East Kimberley
J. Pettigrew	58	15.87°S	128.24°E	East Kimberley
J. Pettigrew	59	15.84°S	128.31°E	East Kimberley
J. Pettigrew	60	15.78°S	128.74°E	East Kimberley
K. Bell	100	15.96°S	129.03°E	East Kimberley
K. Bell	101[B]	15.94°S	129.03°E	East Kimberley
K. Bell	102	15.93°S	129.05°E	East Kimberley
K. Bell	103	15.90°S	129.06°E	East Kimberley
K. Bell	104	15.90°S	129.07°E	East Kimberley
K. Bell	105	15.84°S	129.10°E	East Kimberley
K. Bell	107	15.84°S	129.10°E	East Kimberley
K. Bell	108	15.83°S	129.11°E	East Kimberley
K. Bell	109	15.83°S	129.11°E	East Kimberley
K. Bell	114	16.02°S	129.35°E	East Kimberley
K. Bell	115[B]	16.00°S	129.43°E	East Kimberley
K. Bell	116	16.00°S	129.43°E	East Kimberley
K. Bell	117	15.99°S	129.50°E	East Kimberley
K. Bell	118	15.99°S	129.51°E	East Kimberley
K. Bell	119	15.57°S	130.37°E	East Kimberley
K. Bell	120	15.57°S	130.37°E	East Kimberley
K. Bell	121	15.66°S	130.48°E	East Kimberley
K. Bell	124	15.59°S	131.12°E	East Kimberley
K. Bell	125	15.59°S	131.12°E	East Kimberley
K. Bell	126	15.55°S	131.29°E	East Kimberley
K. Bell	127	15.55°S	131.28°E	East Kimberley

K. Bell	23	15.60°S	128.28°E	East Kimberley
K. Bell	24	15.60°S	128.28°E	East Kimberley
K. Bell	34	15.55°S	128.26°E	North-east Coast
K. Bell	39[A]	15.55°S	128.25°E	North-east Coast
J. Pettigrew	249	15.77°S	128.03°E	North-east Coast
J. Pettigrew	250	15.76°S	128.05°E	North-east Coast
J. Pettigrew	40	15.56°S	128.20°E	North-east Coast
J. Pettigrew	41	15.46°S	128.10°E	North-east Coast
J. Pettigrew	42	15.54°S	128.15°E	North-east Coast
J. Pettigrew	43	15.58°S	128.14°E	North-east Coast
J. Pettigrew	44	15.63°S	128.10°E	North-east Coast
J. Pettigrew	45	15.63°S	128.10°E	North-east Coast
J. Pettigrew	46	15.68°S	128.09°E	North-east Coast
J. Pettigrew	48	15.65°S	128.06°E	North-east Coast
J. Pettigrew	49	15.62°S	128.03°E	North-east Coast
J. Pettigrew	50	15.73°S	127.88°E	North-east Coast
J. Pettigrew	51	15.74°S	127.88°E	North-east Coast
J. Pettigrew	52	15.79°S	127.89°E	North-east Coast

[A]Voucher specimen lodged at the National Herbarium of Victoria (MEL). For details see Appendix 2.

[B]Voucher specimens lodged in duplicate at MEL and Northern Territory Herbarium (DNA). For details see Appendix 2.

Appendix 2. Details of voucher specimens of *Adansonia gregorii* populations sampled in the current study

Collector	Collection number	Herbarium specimen	Collection date	Collection locality	Latitude	Longitude	Population
K. Bell	39	MEL 2357530	1 May 2011	Western Australia: Telegraph Hill	15.55°S	128.25°E	North-east Coast
K. Bell	81	MEL 2337564, MEL 2337565 (carpological)	7 May 2011	Western Australia: road from Broome to Willare, turn off to Damper Downs and Udialla Springs	17.70°S	123.53°E	West Kimberley
K. Bell	82	MEL 2357529	7 May 2011	Western Australia: road from Broome to Willare, turn off to Damper Downs and Udialla Springs	17.70°S	123.53°E	West Kimberley
K. Bell, T. Bach, H. Rangan	101[A]	MEL 2337573, MEL 2337575 (carpological)	8 Oct. 2011	Northern Territory: Keep River National Park	15.94°S	129.03°E	East Kimberley
K. Bell, T. Bach, H. Rangan	111[A]	MEL 2337572	8 Oct. 2011	Northern Territory: Victoria River Highway	16.06°S	129.10°E	East Kimberley
K. Bell, T. Bach, H. Rangan	115[A]	MEL 2337574, MEL 2337576 (carpological)	8 Oct. 2011	Northern Territory: Victoria River Highway to Timber Creek	16.00°S	129.43°E	East Kimberley

[A]Duplicate specimen lodged with Northern Territory Herbarium (DNA).

Appendix 3. Haplotypes for three chloroplast DNA markers sequenced for a subset of individuals of *Adansonia gregorii*

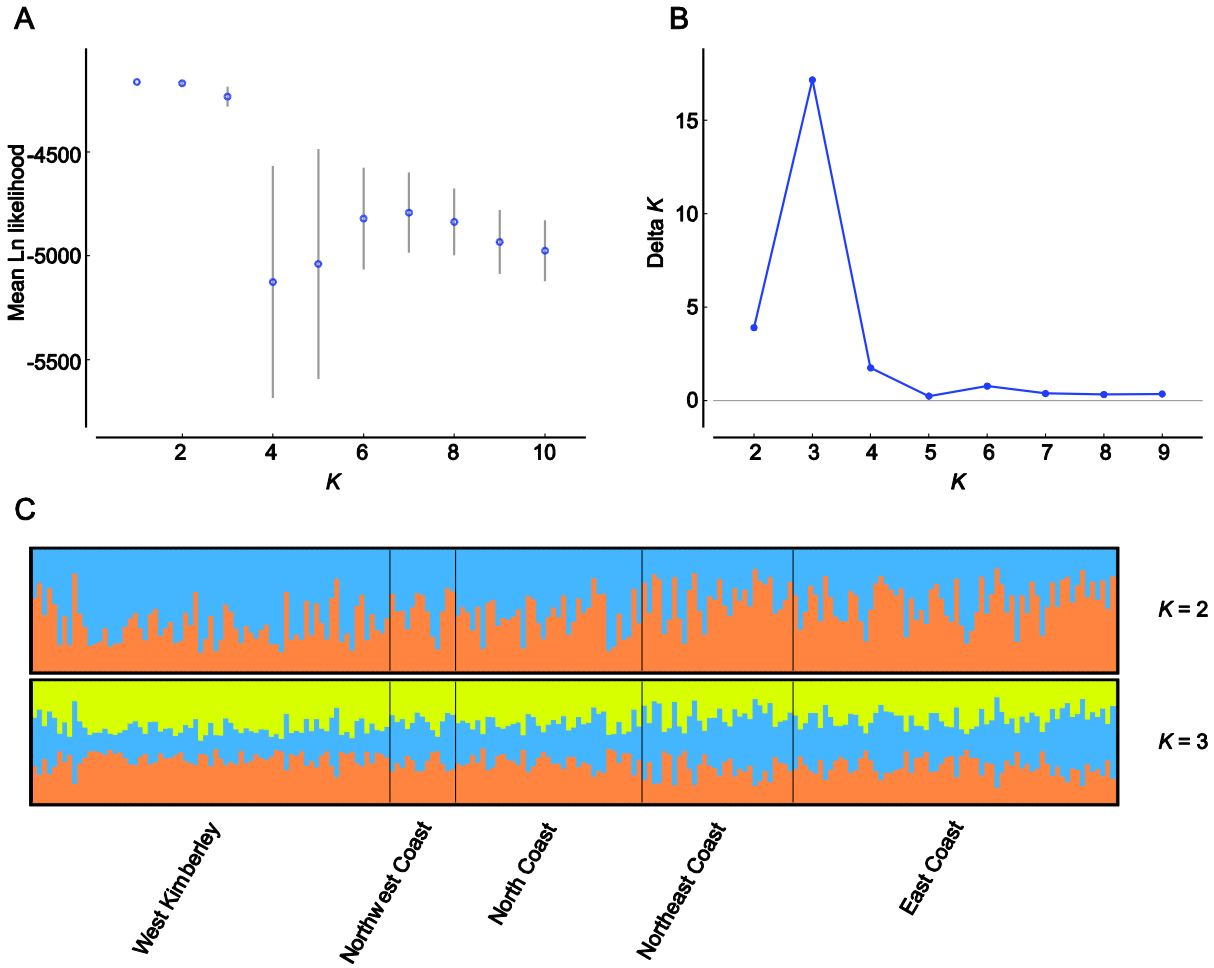
Sequences are deposited on GenBank under accession numbers KJ725352–KJ725359

Collection number	*trn*C–*ycf*6 haplotype	*ndh*F–*rpL*32 haplotype	*3'trn*V–*ndh*C haplotype
KLB 100	1	1	1
KLB 101	1	1	1
KLB 127	1	3	3
KLB 39	1	1	1
KLB 82	1	1	n.a.
JP 115	1	n.a.	n.a.
JP 117	1	n.a.	n.a.
JP 118	1	n.a.	n.a.
JP 147	1	1	2
JP 179	1	n.a.	n.a.
JP 218	1	2	1
JP 220	1	n.a.	n.a.
JP 223	1	1	1
JP 237	1	n.a.	n.a.
JP 238	1	1	1
JP 246	2	n.a.	n.a.
JP 37	1	n.a.	n.a.
JP 42	1	1	1
JP 66	1	n.a.	n.a.
JP 70	1	n.a.	n.a.
JP 81	1	n.a.	n.a.

Appendix 4. Chi–square tests for significant deviation from Hardy–Weinberg equilibrium for loci within populations

Population	Locus	DF	χ^2	*P*-value	Significance
West Kimberley	AD06	105	158.799	0.001	***
	AD08	6	9.065	0.170	n.s.
	AD13	276	313.256	0.061	n.s.
	AD14	120	53.076	1.000	n.s.
	AD15	6	9.939	0.127	n.s.
	AD18	28	16.657	0.955	n.s.
North-west Coast	AD06	105	190.683	0.000	***
	AD08	1	0.091	0.763	n.s.
	AD13	253	272.857	0.187	n.s.
	AD14	55	28.641	0.999	n.s.
	AD15	3	1.702	0.637	n.s.
	AD18	28	33.368	0.222	n.s.
North Coast	AD06	36	53.173	0.032	*
	AD08	1	0.430	0.512	n.s.
	AD13	45	45.667	0.444	n.s.
	AD14	6	3.718	0.715	n.s.
	AD15	1	0.066	0.797	n.s.
	AD18	15	10.863	0.762	n.s.
North-east Coast	AD06	78	50.763	0.993	n.s.
	AD08	1	0.710	0.399	n.s.
	AD13	105	122.204	0.120	n.s.
	AD14	21	7.698	0.996	n.s.
	AD15	3	2.790	0.425	n.s.
	AD18	15	42.049	0.000	***
East Kimberley	AD06	36	16.497	0.998	n.s.
	AD08	1	2.014	0.156	n.s.
	AD13	136	149.992	0.195	n.s.
	AD14	21	35.543	0.025	*
	AD15	3	9.710	0.021	*
	AD18	15	24.357	0.059	n.s.

Appendix 5. Bayesian probabilistic analysis of *Adansonia gregorii* genetic structure implemented in STRUCTURE v2.3.3. (*a*) Mean likelihood of 10 ten runs for each of K = 1–10. Maximum mean likelihood is at K = 1, with high probabilities for K = 2 and 3, but quickly decreasing from K = 4 onward. (*b*) The ΔK statistic for each of K = 2–9. The maximum value for the ΔK statistic, representing the value of K that best explains the structure in the data is at K = 3. (*c*) Admixture proportion of individuals in genetic clusters at K = 2 and K = 3, following combination of multiple STRUCTURE runs using CLUMPP V1.1.2.



Appendix 6. Population statistics for individual loci for each population of *Adansonia gregorii*

N, number of samples; N_a, number of alleles per locus; N_e, effective number of alleles per locus; *I*, Shannon's information index; H_o, observed heterozygosity; H_e, expected heterozygosity under Hardy–Weinberg equilibrium; UH_e, unbiased expected heterozygosity = $(2N / (2N–1)) \times H_e$; *F* = Wright's allelic fixation index. Geographic ranges of the populations are outlined in Fig. 3

Population	Locus	*N*	N_a	N_e	*I*	H_o	H_e	UH_e	*F*
West Kimberley	AD06	58	14.000	3.873	1.951	0.655	0.742	0.748	0.117
	AD08	58	3.000	1.550	0.593	0.448	0.355	0.358	–0.263
	AD13	58	24.000	11.887	2.769	0.879	0.916	0.924	0.040
	AD14	58	12.000	2.830	1.369	0.655	0.647	0.652	–0.013
	AD15	58	4.000	2.100	0.867	0.552	0.524	0.528	–0.053
North-west Coast	AD06	26	10.000	2.551	1.403	0.538	0.608	0.620	0.114
	AD08	26	2.000	1.257	0.358	0.231	0.204	0.208	–0.130
	AD13	26	17.000	7.953	2.457	0.885	0.874	0.891	–0.012
	AD14	26	6.000	2.368	1.084	0.462	0.578	0.589	0.201
	AD15	25	3.000	2.080	0.777	0.600	0.519	0.530	–0.156
	AD18	24	6.000	3.418	1.444	0.625	0.707	0.723	0.117
North Coast	AD06	37	11.000	3.593	1.740	0.622	0.722	0.732	0.139
	AD08	37	2.000	1.583	0.555	0.378	0.368	0.373	–0.028
	AD13	36	18.000	12.112	2.663	0.889	0.917	0.930	0.031
	AD14	37	7.000	2.535	1.197	0.568	0.606	0.614	0.063
	AD15	37	2.000	1.949	0.680	0.514	0.487	0.494	–0.055
	AD18	37	8.000	4.087	1.619	0.784	0.755	0.766	–0.038
North-east Coast	AD06	7	7.000	2.800	1.451	0.714	0.643	0.692	–0.111
	AD08	7	2.000	1.324	0.410	0.286	0.245	0.264	–0.167
	AD13	7	8.000	3.500	1.666	0.714	0.714	0.769	0.000
	AD14	7	4.000	2.579	1.091	0.857	0.612	0.659	–0.400
	AD15	7	2.000	1.849	0.652	0.143	0.459	0.495	0.689
	AD18	7	5.000	3.920	1.470	0.571	0.745	0.802	0.233
East Kimberley	AD06	85	16.000	3.425	1.900	0.600	0.708	0.712	0.153
	AD08	87	4.000	1.483	0.554	0.402	0.326	0.328	–0.235
	AD13	84	27.000	10.974	2.782	0.821	0.909	0.914	0.096
	AD14	85	14.000	3.177	1.538	0.624	0.685	0.689	0.090
	AD15	87	4.000	1.996	0.826	0.586	0.499	0.502	–0.175
	AD18	83	7.000	4.838	1.687	0.759	0.793	0.798	0.043