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Australian Mammalogy

Supplementary Material

Skewed paternity impacts genetic diversity in a small reintroduced population of western quolls (*Dasyurus geoffroii*)

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Supplementary Table S1: Summary of the western quoll samples included in this study showing sample number, Arid Recovery name and microchip number, source locations, release year, and assigned parents.

ID in this study	Arid Recovery Sample Name	Sex	Microchip Number	Source Location	Release Year	Assigned Mother/Father
AR057	Sepia	F	94320346170	Julimar	2015	
M1A	Billa Kalina	M	982000409588785	Dryandra	2018	
M3A	Coorlay	M	982000405918253	Dryandra	2018	
F3A	Andamooka	F	982000405918131	Dryandra	2018	
F4A	Oodnadatta	F	982000405918788	Dryandra	2018	
F5A	Moondiepitchnie	F	982000167753817	Dryandra	2018	
F6A	Koolymilka	F	982000409857561	Dryandra	2018	
F7A	Yarrawurta	F	982000409858283	Julimar	2018	
MXA	Jindoo	M	ABTC141991	Flinders Ranges	2015	
F8A	Curdimurka	F	982000190545089	Julimar	2018	
F9A	Muloorina	F	982000410285957	Julimar	2018	
F10A	Mulgaria	F	982000361920015	Julimar	2018	
M11A	Parakeelya	M	0007869C35	Flinders Ranges	2018	
M12A	Bopeechee	M	0007B0D7D7	Flinders Ranges	2018	
M13J	Bowie	M	0007839630	Born AR 2018	Born AR 2018	F4A/M1A
M14J	Sprocket	M	7ABFE37	Born AR 2018	Born AR 2018	F7A/M3A
M15J	Ace	M	7ACE403	Born AR 2018	Born AR 2018	F7A/M3A
F16J	Priscilla	F	7B04947	Born AR 2018	Born AR 2018	F7A/M3A
M17J	Pando	M	7ABFC58	Born AR 2018	Born AR 2018	F4A/M12A
F18J	Angelina	F	79D5831	Born AR 2018	Born AR 2018	F4A/M12A
M19J	Thanos	M	7B11969	Born AR 2018	Born AR 2018	F9A/M3A
F20J	Aretha	F	79D597D	Born AR 2018	Born AR 2018	F9A/M3A
F21J	Moondancer	F	79D5567	Born AR 2018	Born AR 2018	F9A/M3A
F22J	Chai	F	7B117FA	Born AR 2018	Born AR 2018	F7A/M3A
F23J	Sprinkle	M	7B00DB2	Born AR 2018	Born AR 2018	F7A/M3A
F24J	Summer	F	79D54D7	Born AR 2018	Born AR 2018	F6A/M1A
M25J	Michael Jackson	M	783C89C	Born AR 2018	Born AR 2018	F10A/M3A
F26J	Dot	F	7B04C5E	Born AR 2018	Born AR 2018	F10A/M3A
F27J	Tickle	F	7B04BED	Born AR 2018	Born AR 2018	F10A/M3A
F28J	Status	F	7B04CC4	Born AR 2018	Born AR 2018	F10A/M3A
F29J	Acacia	F	79D588F	Born AR 2018	Born AR 2018	F10A/M3A
M30J	Billy	M	7B0EC07	Born AR 2018	Born AR 2018	F10A/M3A
F31J	Siam	F	7B11A42	Born AR 2018	Born AR 2018	F6A/M1A
M32J	Bungarra	M	7B1144A	Born AR 2018	Born AR 2018	F6A/M1A
U33J	Unknown	Unknown	-	Born AR 2018	Born AR 2018	F4A/M12A
F34J	Kathy	F	7B11A2F	Born AR 2018	Born AR 2018	F6A/M1A
F35J	Callitris	F	7B04BB7	Born AR 2018	Born AR 2018	F9A/M3A

Supplementary Table S2: All locus-specific microsatellite forward and reverse primers obtained from Spencer et al. (2007) and used in this study, and the microsatellite repeat arrays and reported lengths

Amplicon ID	Primer Sequences	Repeat Array	Length (bp)
pDG1A1	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGATTTGCTTCTTGCTCCCTACAGC GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGTTTCACTCCTTCTGAGTTTATCACC	AC_{10-22}	183-207
pDG1H3	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGGTGGATTGACACAATCAGAGTGG GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGGCAATTCCATCTTTATTGCATGC	GT_{21-33}	169-191
pDg5G4	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGTAGATTCCTTCAATGGCTATCCC GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGGCTCCTGACATAGAGTGATGATGG	AC_{23-33}	113-124
pDG6D5	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGCCTCCAGACAAATGCAACC GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGTCTCTGAATTTACTGATAGTATCTTTGG	AC_{10-25}	87-117
pDG7F3	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGTCAGTTCAGCTACAACTGCTTGG GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGTGTTACATAGAGCATGAGCGACC	GT_{15-27}	102-136
3.1.2	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGAGGAAACTTCACAAGTGTCGA GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGATTAATGACTCATCTGTTGTTGG	AC_{14-23}	160-178
3.3.1	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGCAGCCCTTGAGTCTTGAGATT GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGCATACCACCCCAGGAGTTTC	TG_{32-48}	124-156
3.3.2	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGAATAGCAGAGACTCGATCC GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGAGCCTTTATTACCTGGGAAG	CA_{10-30}	131-171
4.4.10	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGAATGCTAGATTTCACTCCC GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGCCTCACATTTCTGGAACTG	GT_{17-27}	219-229
Sh6e	TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGGATTCTAGAAGGGATAGCAAGC GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGGACACTCCATAGAAATGCACTG	AC_{18-31}	143-169

Supplementary Table S3: Unique combinations of Nextera P5 and P7 indexing sequences with the 5' and 3' Illumina tags.

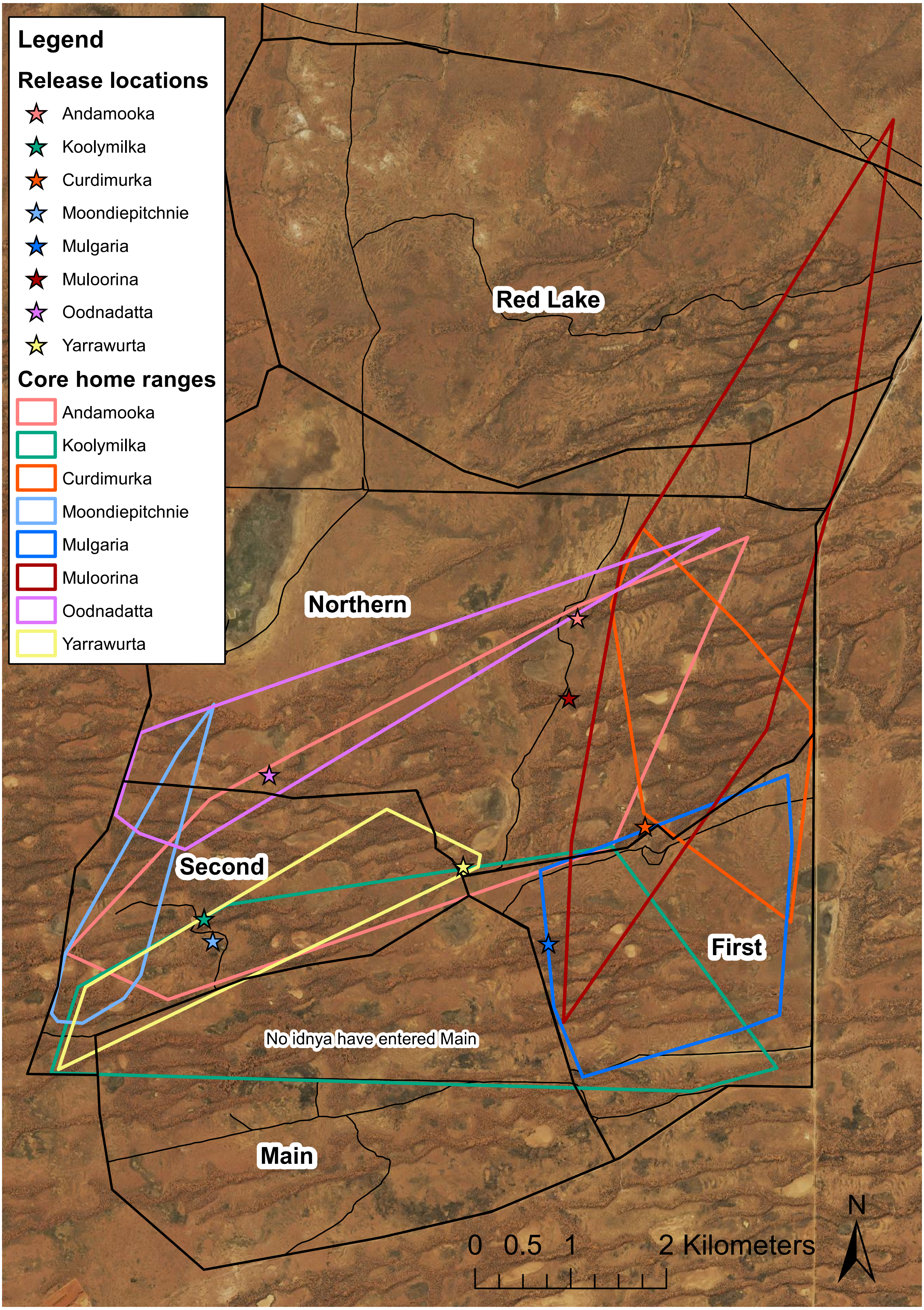
ID	P5 sequence	P5 number	5' Illumina Tag	P7 sequence	P7 number	3' Illumina Tag
M19J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	CTAGTACG	2	CAAGCAGAAGACGGCATACGAGATCTAGTACGGTCTCGTGGGCTCGG
F22J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	GCTCAGGA	4	CAAGCAGAAGACGGCATACGAGATGCTCAGGAGTCTCGTGGGCTCGG
M25J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	CATGCCTA	6	CAAGCAGAAGACGGCATACGAGATCATGCCTAGTCTCGTGGGCTCGG
M15J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	CCTCTCTG	8	CAAGCAGAAGACGGCATACGAGATCCTCTCTGGTCTCGTGGGCTCGG
F18J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	CAGCCTCG	10	CAAGCAGAAGACGGCATACGAGATCAGCCTCGGTCTCGTGGGCTCGG
F21J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	TCCTCTAC	12	CAAGCAGAAGACGGCATACGAGATTCCTCTACGTCTCGTGGGCTCGG
F24J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	CCTGAGAT	14	CAAGCAGAAGACGGCATACGAGATCCTGAGATGTCTCGTGGGCTCGG
M14J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	GTAGCTCC	16	CAAGCAGAAGACGGCATACGAGATGTAGCTCCGTCTCGTGGGCTCGG
M17J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	AGGCTCCG	18	CAAGCAGAAGACGGCATACGAGATAGGCTCCGGTCTCGTGGGCTCGG
F20J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	CTGCGCAT	20	CAAGCAGAAGACGGCATACGAGATCTGCGCATGTCTCGTGGGCTCGG
F23J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	CGCTCAGT	22	CAAGCAGAAGACGGCATACGAGATCGCTCAGTGTCTCGTGGGCTCGG
F26J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	ACTGATCG	24	CAAGCAGAAGACGGCATACGAGATACTGATCGGTCTCGTGGGCTCGG
F16J	AAGGCTAT	16	AATGATACGGCGACCACCGAGATCTACACAAGGCTATTCGTCGGCAGCGTC	GACGTCGA	26	CAAGCAGAAGACGGCATACGAGATGACGTCGAGTCTCGTGGGCTCGG
F6A	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	TCGCCTTA	1	CAAGCAGAAGACGGCATACGAGATTCGCCTTAGTCTCGTGGGCTCGG
MXA	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	TTCTGCCT	3	CAAGCAGAAGACGGCATACGAGATTTCTGCCTGTCTCGTGGGCTCGG
F27J	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	AGGAGTCC	5	CAAGCAGAAGACGGCATACGAGATAGGAGTCCGTCTCGTGGGCTCGG
M30J	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	GTAGAGAG	7	CAAGCAGAAGACGGCATACGAGATGTAGAGAGGTCTCGTGGGCTCGG
M13J	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	AGCGTAGC	9	CAAGCAGAAGACGGCATACGAGATAGCGTAGCGTCTCGTGGGCTCGG
F4A	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	TGCCTCTT	11	CAAGCAGAAGACGGCATACGAGATTGCCTCTTGTCTCGTGGGCTCGG
M11A	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	TCATGAGC	13	CAAGCAGAAGACGGCATACGAGATTCATGAGCGTCTCGTGGGCTCGG
F29J	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	TAGCGAGT	15	CAAGCAGAAGACGGCATACGAGATTAGCGAGTGTCTCGTGGGCTCGG
F10A	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	TACTACGC	17	CAAGCAGAAGACGGCATACGAGATTACTACGCGTCTCGTGGGCTCGG
F3A	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	GCAGCGTA	19	CAAGCAGAAGACGGCATACGAGATGCAGCGTAGTCTCGTGGGCTCGG
M12A	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	GAGCGCTA	21	CAAGCAGAAGACGGCATACGAGATGAGCGCTAGTCTCGTGGGCTCGG
F28J	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	GTCTTAGG	23	CAAGCAGAAGACGGCATACGAGATGTCTTAGGGTCTCGTGGGCTCGG
F31J	GAGCCTTA	17	AATGATACGGCGACCACCGAGATCTACACGAGCCTTATCGTCGGCAGCGTC	TAGCTGCA	25	CAAGCAGAAGACGGCATACGAGATTAGCTGCAGTCTCGTGGGCTCGG
F5A	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTACACTTATGCGATCGTCGGCAGCGTC	CTAGTACG	2	CAAGCAGAAGACGGCATACGAGATCTAGTACGGTCTCGTGGGCTCGG
F8A	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTACACTTATGCGATCGTCGGCAGCGTC	GCTCAGGA	4	CAAGCAGAAGACGGCATACGAGATGCTCAGGAGTCTCGTGGGCTCGG
M32J	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTACACTTATGCGATCGTCGGCAGCGTC	CATGCCTA	6	CAAGCAGAAGACGGCATACGAGATCATGCCTAGTCTCGTGGGCTCGG
F35J	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTACACTTATGCGATCGTCGGCAGCGTC	CCTCTCTG	8	CAAGCAGAAGACGGCATACGAGATCCTCTCTGGTCTCGTGGGCTCGG
M1A	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTACACTTATGCGATCGTCGGCAGCGTC	CAGCCTCG	10	CAAGCAGAAGACGGCATACGAGATCAGCCTCGGTCTCGTGGGCTCGG
F7A	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTACACTTATGCGATCGTCGGCAGCGTC	TCCTCTAC	12	CAAGCAGAAGACGGCATACGAGATTCCTCTACGTCTCGTGGGCTCGG

PCR NEG	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTA CACTTATGCGATCGTCGGCAGCGTC	CCTGAGAT	14	CAAGCAGAAGACGGCATACGAGATC CTGAGATGTCTCGTGGGCTCGG
F34J	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTA CACTTATGCGATCGTCGGCAGCGTC	GTAGCTCC	16	CAAGCAGAAGACGGCATACGAGATG TAGCTCCGTCTCGTGGGCTCGG
AR057	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTA CACTTATGCGATCGTCGGCAGCGTC	AGGCTCCG	18	CAAGCAGAAGACGGCATACGAGATA GGCTCCGGTCTCGTGGGCTCGG
M3A	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTA CACTTATGCGATCGTCGGCAGCGTC	CTGCGCAT	20	CAAGCAGAAGACGGCATACGAGATC TGCGCATGTCTCGTGGGCTCGG
F9A	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTA CACTTATGCGATCGTCGGCAGCGTC	CGCTCAGT	22	CAAGCAGAAGACGGCATACGAGATC GCTCAGTGTCTCGTGGGCTCGG
U33J	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTA CACTTATGCGATCGTCGGCAGCGTC	ACTGATCG	24	CAAGCAGAAGACGGCATACGAGATA CTGATCGGTCTCGTGGGCTCGG
PCR NEG	TTATGCGA	18	AATGATACGGCGACCACCGAGATCTA CACTTATGCGATCGTCGGCAGCGTC	GACGTCGA	26	CAAGCAGAAGACGGCATACGAGATG ACGTCGAGTCTCGTGGGCTCGG

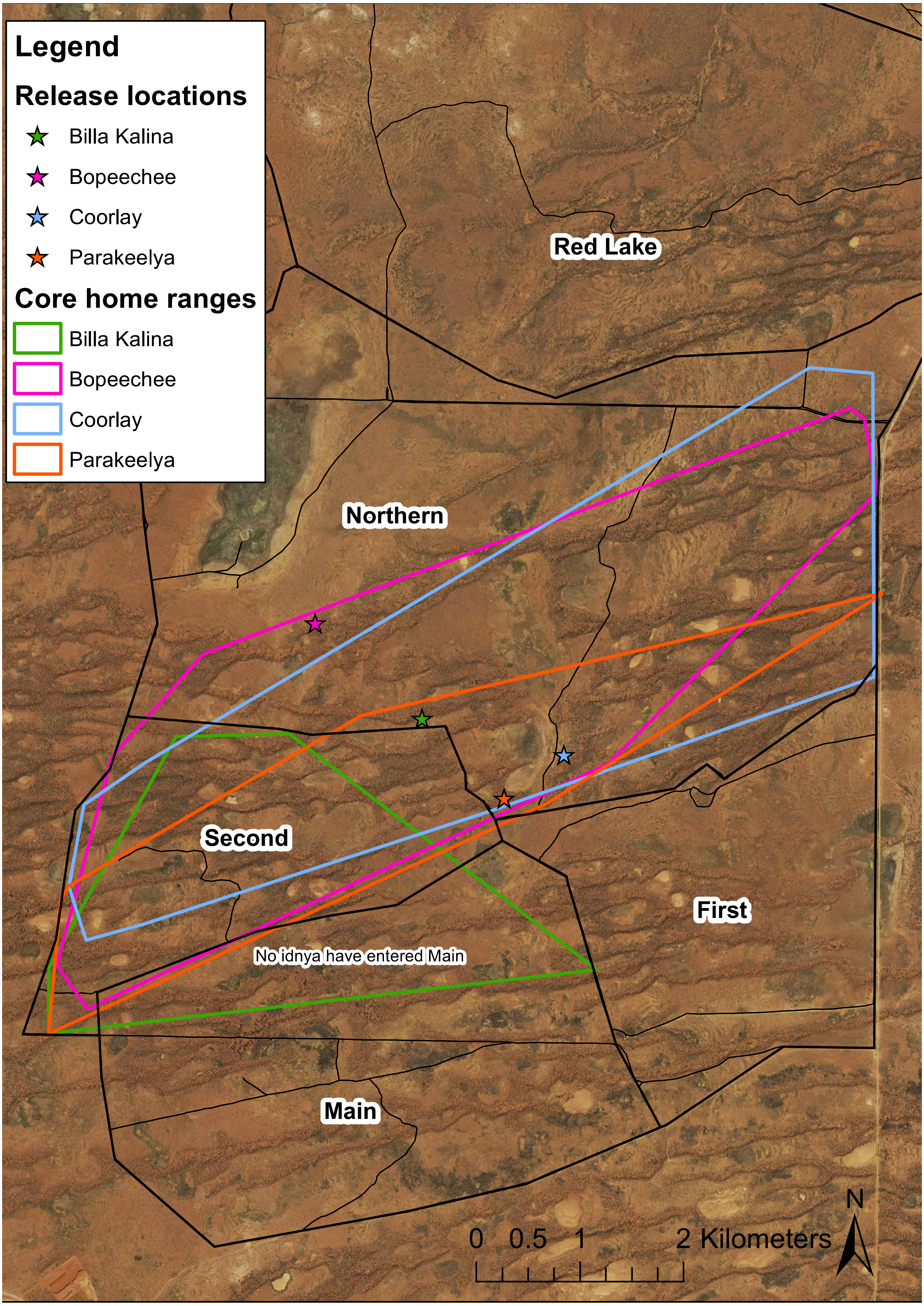
Supplementary Table S4: Number of alleles (N_{A},), observed heterozygosity (H_O), expected heterozygosity (H_E) and probability of deviation from Hardy Weinberg Equilibrium for each locus used in analysis. Note that three loci differed significantly from HWE expectations.

Locus	Number individuals genotyped	N_A	DF	ChiSq	H_O	H_E	Probability	Significance
sh6e	37	9	36	41.5	0.865	0.850	0.245	ns
pdg7f3	37	9	36	67.2	0.486	0.597	0.001	**
pdg6d5	37	7	21	85.4	0.757	0.735	0.000	***
pdg5g4	37	5	10	18.4	0.703	0.697	0.049	*
pdg1h3	37	8	28	29.5	0.946	0.819	0.389	ns
pdg1a1	37	9	36	40.1	0.811	0.743	0.292	ns
4.4.10	37	6	15	22.2	0.595	0.710	0.104	ns
3.3.2	37	10	45	50.5	0.838	0.795	0.267	ns
3.3.1	37	9	36	50.6	0.919	0.853	0.054	ns
3.1.2	37	7	21	30.7	0.703	0.718	0.080	ns

ns Not Significant, * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$



Supplementary Figure S1: Female home range map showing release locations (stars) and 100% minimum convex polygons (polygons) based on radio tracking data for six weeks. Source: Arid Recovery unpublished data



Supplementary Figure S2: Male home range map showing release locations (stars) and 100% minimum convex polygons (polygons) based on radio tracking data for six weeks. Source: Arid Recovery unpublished data