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SUPPLEMENTARY MATERIAL

The burrowing bettongs of Barrow Island: demographic and genetic insights into a threatened macropod

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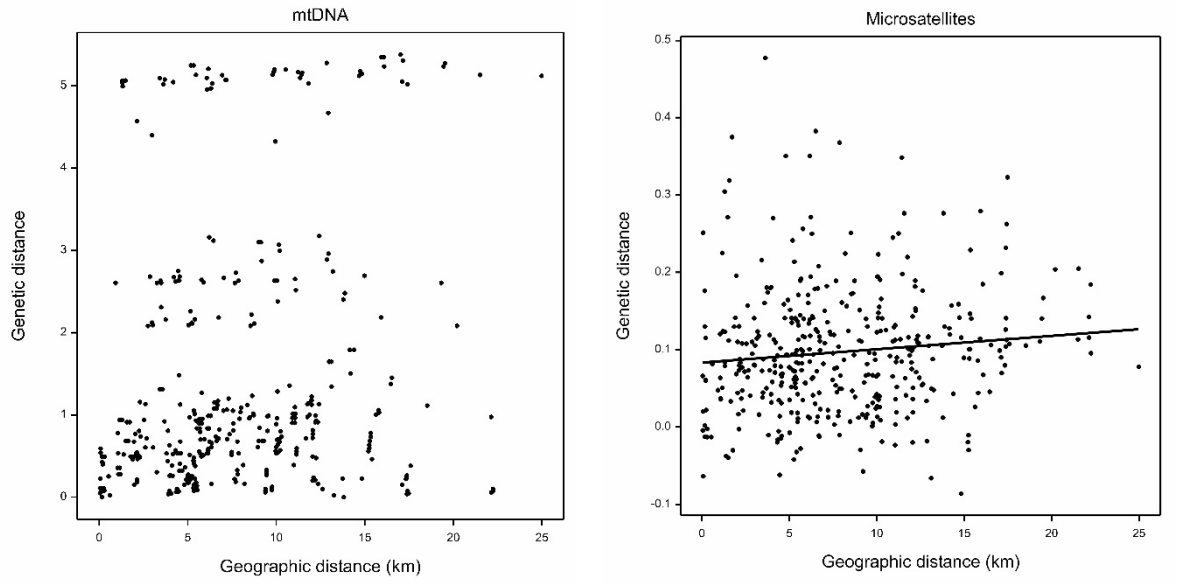

Fig. S1. Bivariate plots of genetic distance between warrens and geographic distances. Left: mtDNA-based genetic distance (mean percent nucleotide differences); Right: nuclear microsatellite-based genetic distance (mean F_{ST}). Both female and male genetic data are used for estimating genetic distance between warrens.

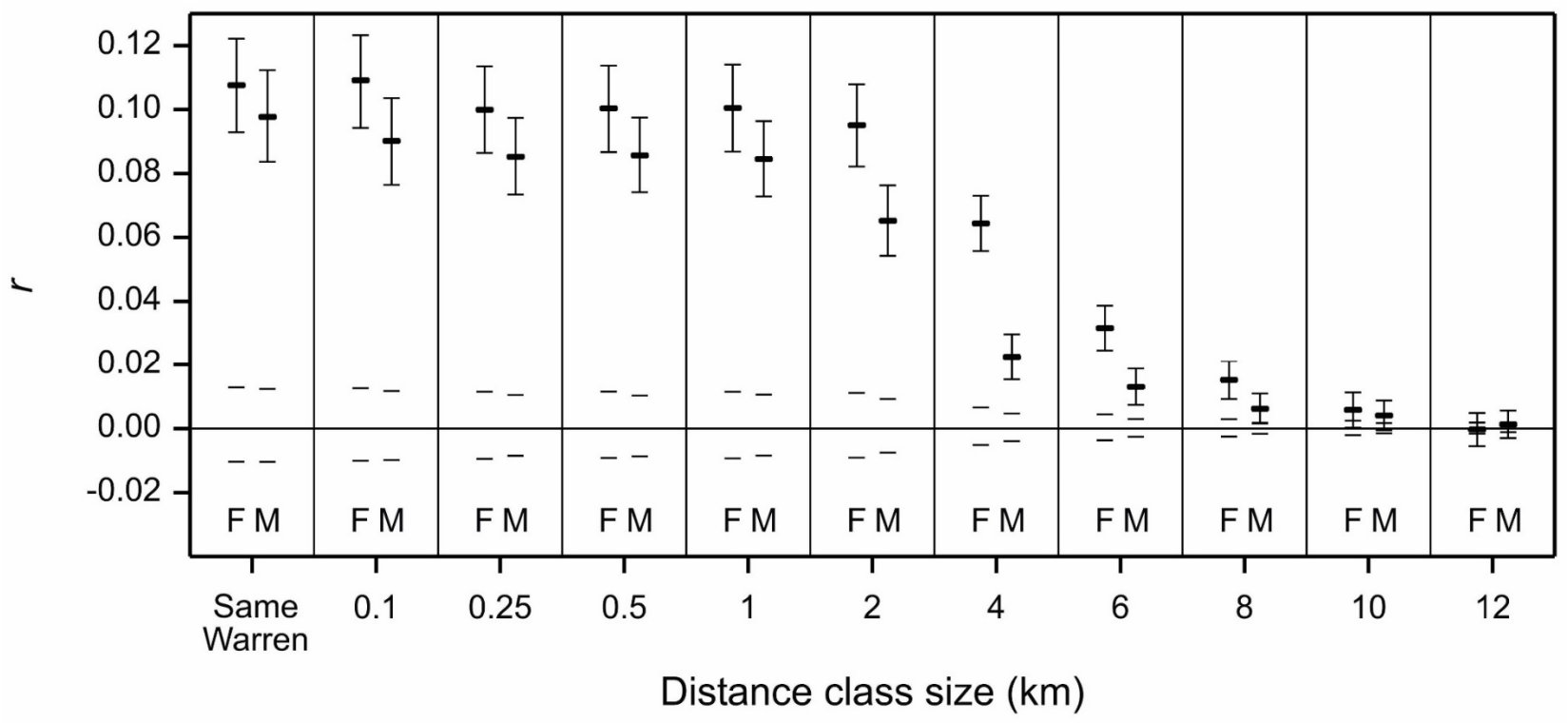

Fig. S2. Correlations (*r*) at various distance class sizes for each sex. The distance classes are labelled by the end point of their range; all begin at 0 km. Each correlation is shown with 95% bootstrap confidence interval bars, and the upper and lower 95% confidence intervals for $r = 0$ are shown as short horizontal lines. The first data point is for the correlation between individuals within the same warren. F = female; M= male.

Table S1. Monthly and total annual rainfall (mm) for Barrow Island just prior to and during the 2003 - 2005 study period and the means for all available records (1967 – 2015). Source: Australian Bureau of Meterology.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2000	40	8	211	12	1	0	15	2	0	0	0	1	289
2001	16	29	19	10	33	1	0	0	0	0	0	0	108
2002	0	0	8	1	11	106	1	0	0	0	0	0	127
2003	0	3	1	62	7	29	0	15	0	0	0	0	117
2004	14	4	156	0	17	0	17	0	0	0	0	0	207
2005	0	0	33	105	201	59	64	2	0	0	0	0	464
Mean	21	55	54	21	42	61	19	10	4	1	1	12	301

Table S2. Characteristics of 11 microsatellite markers. bp – base pairs; n_a – number of alleles; n_e – effective number of alleles; H_e – expected heterozygosity. Mean values ± standard deviation.

Locus	Reference	Source species	Size range (bp)	n_a	n_e	H_e
Y148	Pope *et al*. 1996	*Petrogale xanthopus*	170-176	3	1.8	0.43
Y151	Pope *et al*. 1996	*Petrogale xanthopus*	214-230	7	4.9	0.80
P13	Luikart *et al*. 1997	*Potorous longipes*	140-168	5	3.0	0.67
Y175	Zenger *et al*. 2002	*Petrogale xanthopus*	267-279	6	4.8	0.79
T17-2	Zenger and Cooper 2001	*Macropus eugenii*	100-112	4	1.4	0.29
Bt76	Pope *et al*. 2000	*Bettongia tropica*	206-236	7	3.1	0.68
Y105	Zenger *et al*. 2002	*Petrogale xanthopus*	236-240	3	2.0	0.50
Pa593	Spencer *et al.* 1995	*Petrogale assimilis*	107-123	5	3.1	0.68
Pa385	Spencer *et al.* 1995	*Petrogale assimilis*	143-145	2	2.0	0.50
Y170	Pope *et al*. 1996	*Petrogale xanthopus*	131-145	5	2.9	0.66
Pa597	Spencer *et al.* 1995	*Petrogale assimilis*	160-220	11	4.0	0.75
Mean				5.3 ± 2.49	3.0 ± 1.19	0.61 ± 0.162

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Table S3. Trapping results (number of individuals and captures) and sex ratio.

Warren	Latitude (South)	Longitude (East)	Female		Male		Sex Ratio
			Individuals	Captures	Individuals	Captures	
B1	-20.8433	115.3863	2	5	3	7	1.50
B2	-20.8488	115.3532	6	6	2	2	0.33
B5	-20.8220	115.4143	0	0	3	6	
B6	-20.8673	115.3324	2	6	3	5	1.50
B7	-20.8522	115.3750	1	1	0	0	0
B12	-20.8293	115.4336	17	87	22	115	1.29
B13	-20.8282	115.4320	4	15	5	27	1.25
B14	-20.8278	115.4338	5	32	11	30	2.20
B15	-20.8274	115.4339	4	20	7	58	1.75
B18	-20.8286	115.4463	3	3	5	5	1.67
B19	-20.7963	115.3993	0	0	2	5	
B23	-20.8663	115.4010	10	37	5	11	0.50
B25	-20.8666	115.4015	8	19	7	15	0.88

B26	-20.8650	115.3991	4	12	7	21	1.75
B29	-20.7816	115.4567	0	0	1	3	
B33	-20.7761	115.4652	13	48	17	94	1.31
B35	-20.8102	115.4407	39	108	35	98	0.90
B37	-20.7254	115.4727	12	39	7	35	0.58
B38	-20.7413	115.4629	5	13	5	7	1.00
B39	-20.7421	115.4627	4	8	6	10	1.50
B40	-20.7830	115.4563	0	0	1	1	
B41	-20.7803	115.4559	3	13	5	17	1.67
B44	-20.7768	115.4653	7	35	13	55	1.86
B47	-20.7249	115.3922	3	4	3	4	1.00
B49	-20.6721	115.4509	0	0	1	1	
B53	-20.7963	115.4512	2	11	2	2	1.00
B54	-20.7956	115.4514	1	3	4	12	4.00
B103	-20.8366	115.3915	2	6	2	2	1.00
GC	-20.7912	115.4494	1	2	3	19	3.00
Total			135	539	152	670	1.13

Table S4. Regression predicted mean body mass (g) and standard error for each sample period.

Sample date	Body mass ± s.e.
March 2004	688.2 ± 11.24
April 2005	746.5 ± 9.85
May 2004	738.7 ± 6.70
August 2003	750.0 ± 12.62
October 2003	760.4 ± 7.57
October 2004	774.3 ± 6.94

Table S5. Individuals captured, estimated (italic) and number of days on which individuals were captured (in parenthesis) by sample period and warren.

	August 2003			October 2003			March 2004	May 2004			October 2004			April 2005			TOTAL		
B01														5	*5*	(5)	5	*5*	(5)
B02														8	*8*	(5)	8	*8*	(5)
B05											1		(1)	3	*3*	(4)	3	*4*	(5)
B06														*5*	*5*	(4)	5	*5*	(4)
B07														1		(1)	1		(1)
B12	18	*24*	(4)	16	*16*	(4)		20	*22*	(4)	17	*25*	(4)	23	*29*	(4)	37	*47*	(20)
B13	1		(1)	5	*13*	(3)		6	*6*	(4)	4	*4*	(4)	4	*4*	(4)	9	*9*	(18)
				2		(2)													
B14	1		(1)	5	*5*	(4)		7	*20*	(4)	6	*7*	(4)	9	*10*	(4)	20	*45*	(19)
				7		(2)													
B15	6		(2)	6	*6*	(4)		7	*7*	(4)	4	*4*	(4)	7	*8*	(4)	11	*15*	(19)
				2		(1)													
B18														7		(2)	7	*7*	(2)
B19				1		(1)								2	*2*	(3)	2	*2*	(4)

B23				5	5	(3)				9	*12*	(3)	12	*13*	(4)		15	*21*	(10)
B25				5		(2)				9	*12*	(4)	9	*15*	(4)		15	*15*	(10)
B26				5	*9*	(4)				6		(2)	8	*10*	(4)		11	*17*	(10)
B29				1	*1*	(3)											1	*1*	(3)
B33	7	*8*	(4)	18	*28*	(4)	17	*19*	(4)	18	*29*	(4)	17	*18*	(4)		30	*47*	(20)
B35				26	*52*	(4)				46	*114*	(4)	36	*52*	(4)		74	*134*	(15)
										33	*49*	(3)							
B37	3		(2)	13	*15*	(4)				8	*8*	(4)	11	*17*	(4)		19	*20*	(14)
B38	1		(2)	8	*9*	(4)							2		(2)		10	*12*	(8)
B39										10	*11*	(4)	1		(1)		10	*11*	(5)
B40							1		(1)								1	*1*	(1)
B41	1		(1)	3		(4)	5	*9*	(4)	2	*2*	(4)	5	*6*	(3)		8	*16*	(16)
B44				13	*15*	(4)	13	*21*	(4)	11	*14*	(4)	4	*4*	(3)		20	*23*	(15)
B47	6		(2)														6	*10*	(2)
B49													1		(1)		1		(1)
B53				1		(1)	2	*2*	(4)	3	*3*	(4)	1		(1)		4	*6*	(10)
B54							4	*6*	(3)	1		(2)	2	*2*	(3)		5	*5*	(8)

B103										4	*4*	(4)		4	*4*	(4)
GC		2	*2*	(3)		2	*2*	(4)		3	*3*	(4)		4	*4*	(11)