

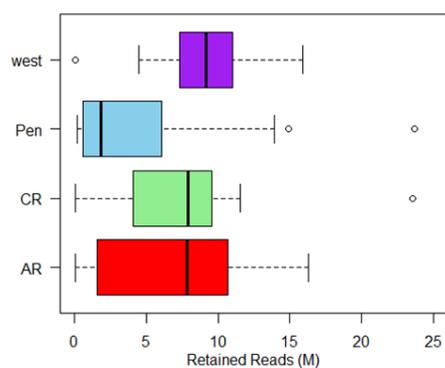
**Table S1.** Genbank accession numbers for *Moggridgea rainbowi* sequences and RAD-seq tags (SNP). Mitochondrial cytochrome *c* oxidase subunit 1 (*COI*); ribosomal Internal Transcribed Spacer gene (*ITS*).

Sample name	Location	COI	ITS	SNP
Mig003	American River	OQ921426	OQ921431	SAMN34372283
Mig003A	American River	OQ921427	OQ921458	SAMN34372284
Mig008	American River	OQ921428	OQ921432	SAMN34372285
SAMA28428	American River			SAMN34372286
SAMA28257	American River	MF169531.1	MF169535.1	SAMN34372287
SAMA28345	American River	MF169532.1	MF169536.1	SAMN34372288
SAMA28346.1	American River	MF169533.1	MF169537.1	
SAMA28429	American River	OQ921425	OQ921433	SAMN34372289
jrm0153	American River			SAMN34372290
jrm0154	American River			SAMN34372291
jm0107A	Baudin Conservation Park	OQ921404	OQ921434	SAMN34372292
jm0107B	Baudin Conservation Park	OQ921405	OQ921435	
jm0107C	Baudin Conservation Park	OQ921406	OQ921436	
jm0107D	Baudin Conservation Park	OQ921407	OQ921437	
jm0107E	Baudin Conservation Park	OQ921408	OQ921438	
jm0107F	Baudin Conservation Park	OQ921409	OQ921439	SAMN34372293
jm0107G	Baudin Conservation Park	OQ921410	OQ921440	SAMN34372294
Mig002	Baudin Conservation Park	OQ921412	OQ921441	SAMN34372295
Mig009.1	Baudin Conservation Park	OQ921411	OQ921442	SAMN34372296
jm0115	Cape Cassini	OQ921413	OQ921452	SAMN34372297
jm0109	Cape Forbin		OQ921448	SAMN34372298
jm0110	Cape Forbin		OQ921449	SAMN34372299
jm0111	Cape Forbin		OQ921451	SAMN34372300
Mig004	Chapman River	OQ921416	OQ921443	SAMN34372301
Mig006	Chapman River	OQ921415	OQ921444	SAMN34372302
Mig006A	Chapman River	OQ921414	OQ921445	SAMN34372303
Mig007A	Chapman River	OQ921417	OQ921447	SAMN34372304
Mig007	Chapman River	OQ921418	OQ921446	SAMN34372305

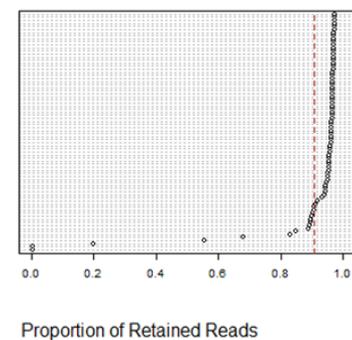
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jm0108	Cape Torrens Wilderness Protection Area	OQ921419	OQ921453	SAMN34372306
jm0112	Cape Torrens Wilderness Protection Area	OQ921420	OQ921450	SAMN34372307
Mig005	Penneshaw	OQ921422	OQ921457	SAMN34372308
jm0099	Penneshaw	OQ921421	OQ921454	
jm0151	Penneshaw	OQ921423	OQ921455	SAMN34372309
jm0152	Penneshaw	OQ921424	OQ921456	SAMN34372310

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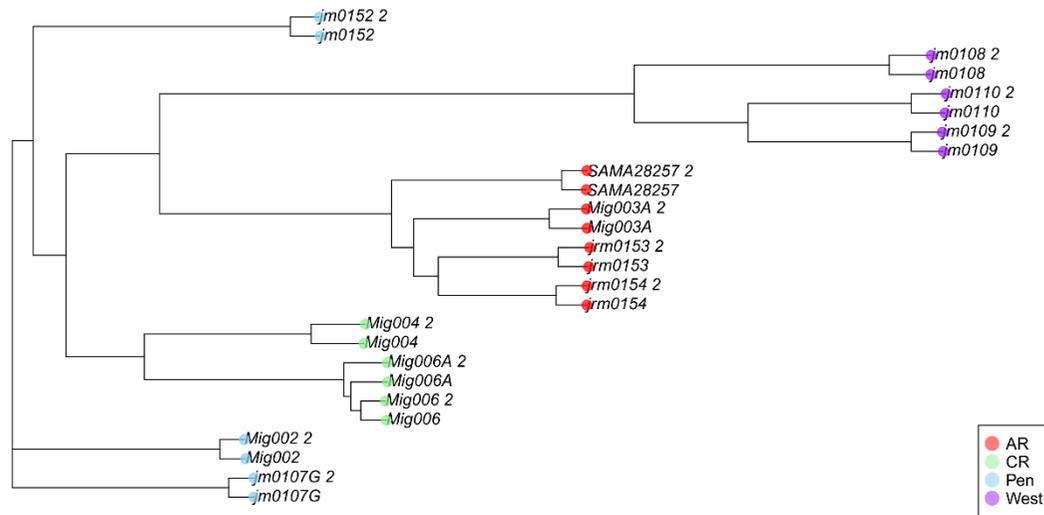


(a)

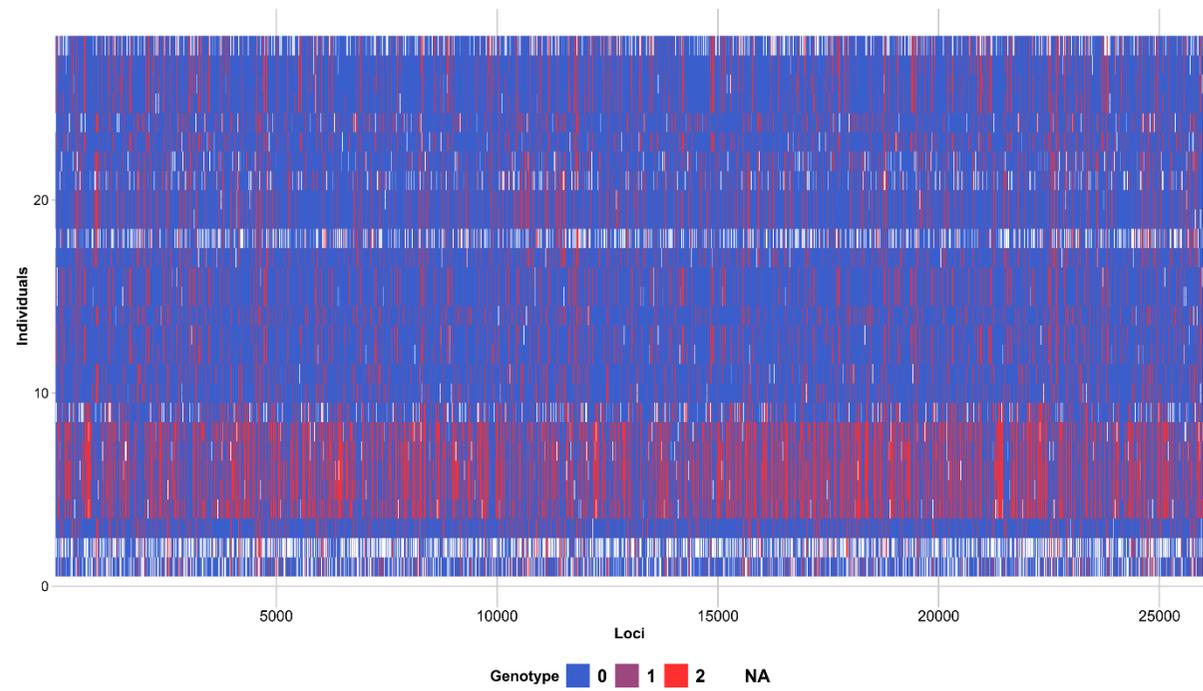


(b)

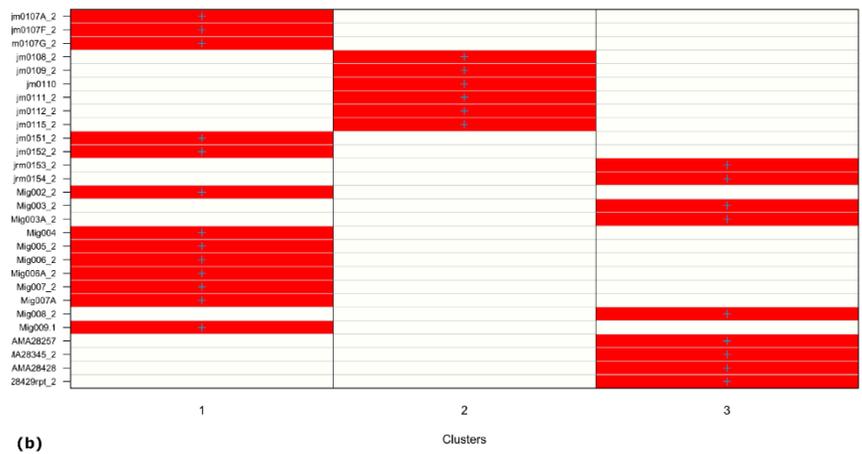
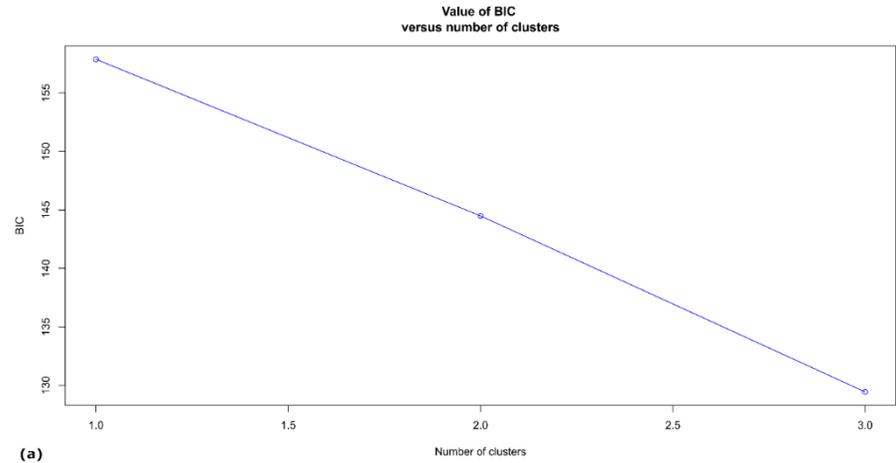
**Figure S1.** Number of reads per sample after cleaning in Stacks: (a) Spread of number of retained reads coloured by location; east: Pen (Baudin Conservation Park and Penneshaw) in blue; CR (Chapman River) in green; and AR (American River) in red; west: (Cape Forbin, Cape Cassini and Cape Torrens Wilderness Protection Area) in purple. (b) Proportion of retained reads for each sample. The mean value for all the samples is shown as a red dotted line.



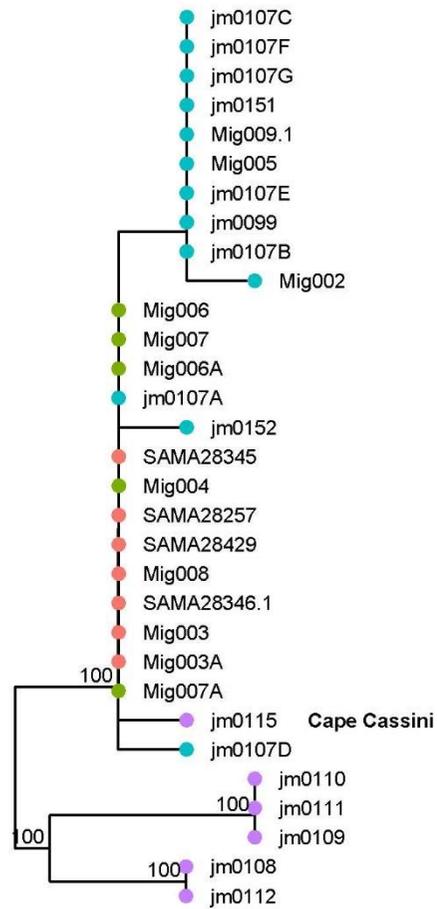
**Figure S2.** Unrooted Neighbour Joining tree of SNP data from the duplicate *Moggridgea rainbowi* samples that passed the read coverage filter. Coloured circles at the tips represent sample location: west (Cape Forbin, Cape Torrens Wilderness Protection Area) in purple, American River in red; Pen (Baudin Conservation Park and Penneshaw) in blue; and Chapman River in green. The number 2 after the sample name denotes the duplicate.



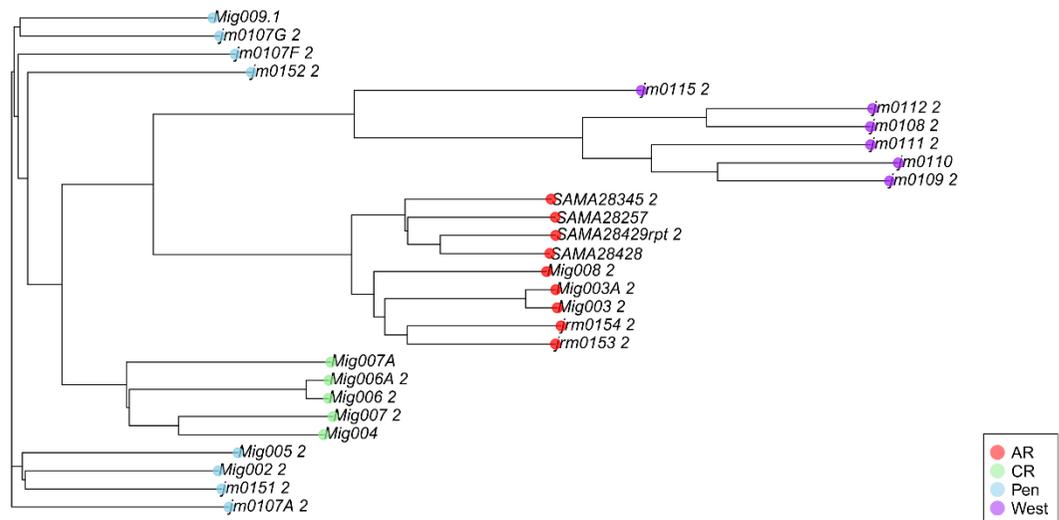
**Figure S3.** Smearplot of the genotypes of the *Moggridgea rainbowi* samples coded as 0 (homozygous reference state 1), 1 (heterozygous) and 2 (homozygous for the alternate state). Missing data are coloured white.



**Figure S4.** Discriminate Analysis of Principle Components (DAPC) for *Moggridgea rainbowi* samples (a) Value of Bayesian Information Criterion (BIC) vs number of clusters from the k-means clustering; (b) Plot of population membership before and after DAPC; colors represent membership probabilities (red=1, white=0) and blue crosses represent the prior cluster.



**Figure S5.** Maximum likelihood tree from the ribosomal Internal Transcribed Spacer gene (*ITS*) sequence dataset. Bootstrap proportions (> 75%) for each node are shown.



**Figure S6.** Unrooted Neighbour Joining tree of the *Moggridgea rainbowi* SNP dataset. Coloured circles at the tips represent sample location; west (Cape Forbin, Cape Torrens Wilderness Protection Area, Cape Cassini) in purple, American River in red; Pen (Baudin Conservation Park and Penneshaw) in blue; and Chapman River in green.