

Supporting Information

Figure S1. Map of South Georgia showing the locations from which 246 individual Antarctic fur seals were tissue-sampled.

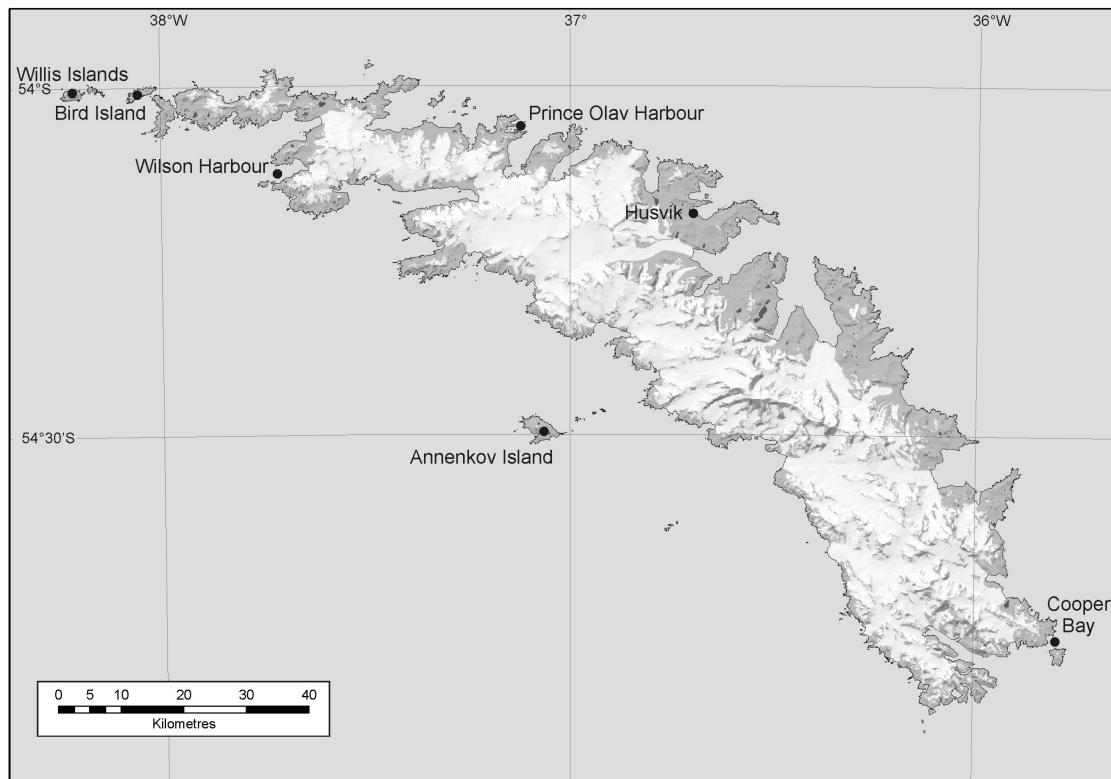


Figure S2. Results of the STRUCTURE (Pritchard et al. 2000) analysis, showing mean \pm SE $\ln P(D)$ values based on five replicates for each value of K , the hypothesised number of groups in the data.

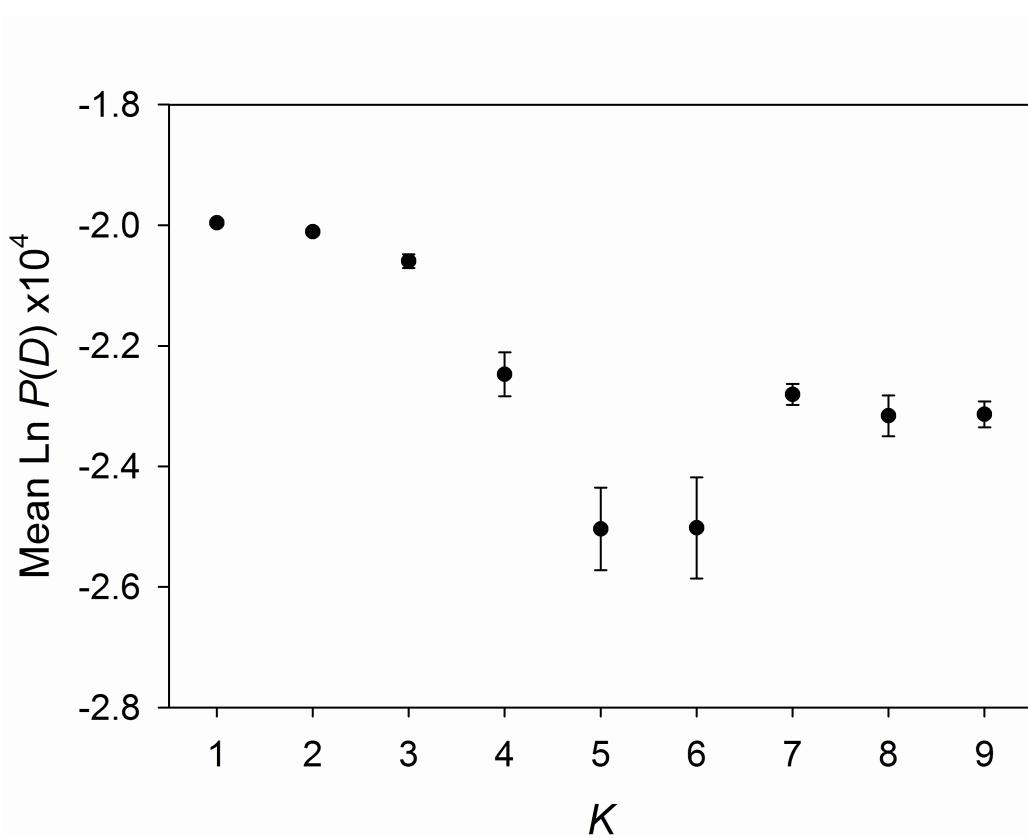


Figure S3. A median joining network illustrating phylogenetic relationships among 39 mitochondrial HVR1 haplotypes observed in 371 Antarctic fur seals. Each line joining two circles corresponds to a single nucleotide substitution, with black circles representing hypothetical haplotypes that were not observed in the sample. Circle size reflects the relative frequency of each of the observed haplotypes. Regions are as defined by Wynen *et al.* (2000). Western region = South Georgia, the South Shetlands, Bouvetøya and Marion Island; Intermediate region = Iles Crozet and Heard Island; Eastern region = Iles Kerguelen.

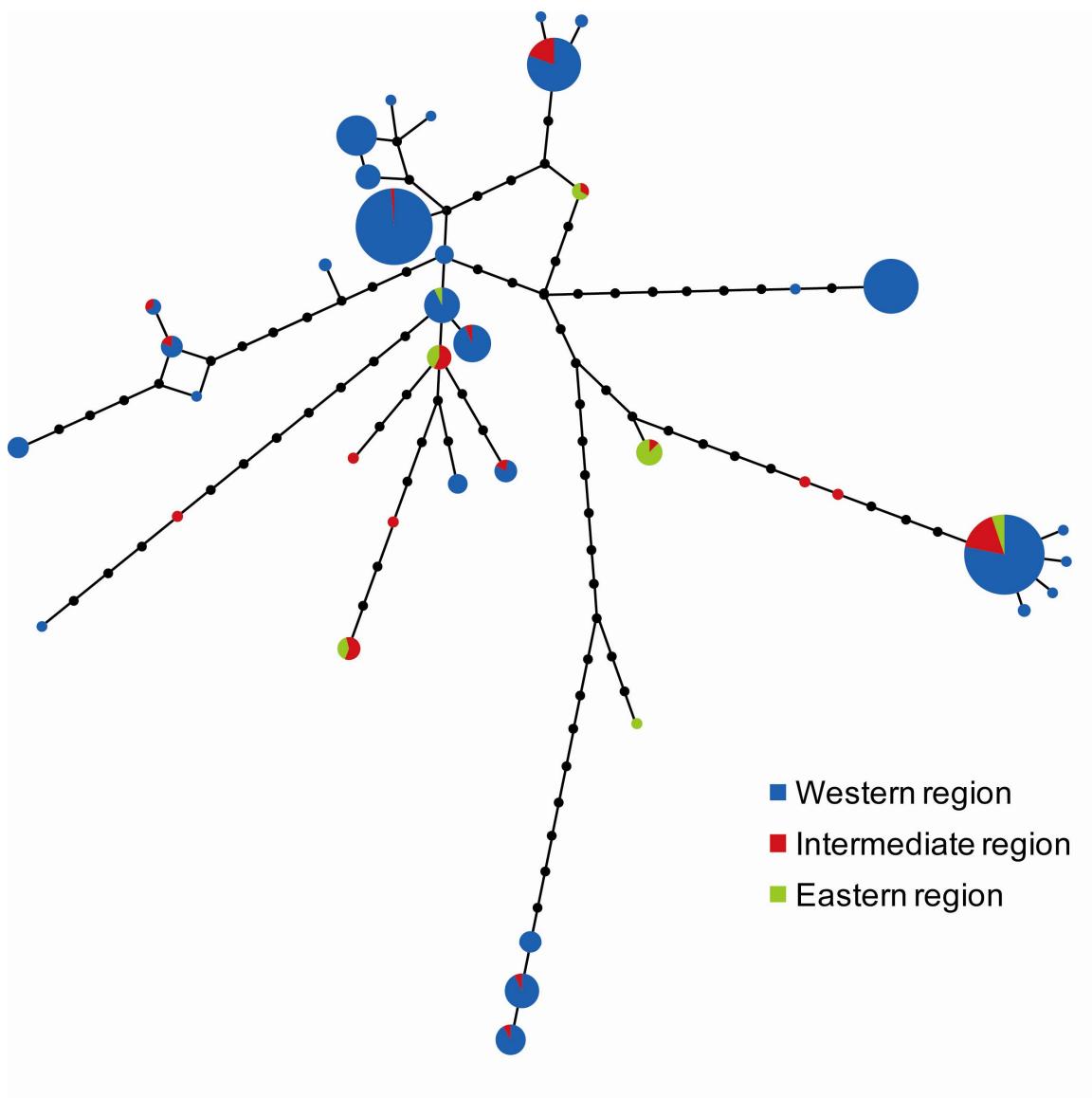


Table S1. Summary of sealing voyages to South Georgia including the names of ships and catches taken where known, together with literature sources.

Year	Number of voyages	Names of ships (if known)	Catch taken (if known)	Source
1778	1			Mill (1905)
1786	1	Lord Hawkesbury		Stackpole (1955)
1787	1	Lucas		Stackpole (1955)
1789	1			Bonner (1964)
1790	2			Bonner (1964)
1791	1			Bonner (1964)
1792	3	Ann, Nancy, Polly	50,000 (Ann)	Jones (1973), Headland (1989)
1793	8	Active, Ann, Fox, Kitty, Lively, Lord Hawkesbury, Mary, Minerva	5,000 (Mary)	Stackpole (1955), Headland (1989)
1795	2	Young William, Sally		Jones (1973)
1798	2	Sybil, Prince Edward		Jones (1973)
1799	9	Regulator, Aurora, Lively, Canada, Hercules, Earl Spencer, President, Sally, Prudence	14,000 (Regulator)	Jones (1973), Headland (1989)
1800	31	Columbia, Hero, Indian, Mars, Ranger, Minerva, Concord, President, Sally, Prudence, Aurora, Duke of Kent, Eliza, Earl Spencer, Morse, Apasia	57,000 (Apasia)	Jones (1973), Headland (1989), Fanning (1833), Bonner (1958)
1801	7	Earl Spencer, Sprightly, Duke of Kent, Dragon, Phiamingi, Princess Amelia, Favorite,		Jones (1973), Headland (1989)
1802	1	Union		Headland (1989)
1808	2	Swan, Otter		Headland (1989)
1814	3	Admiral Colpoys, Diana, Recovery		Jones (1973), Headland (1989)
1815	2	Admiral Colpoys, Diana		Headland (1989)
1816	2	Grand Sachem, Norfolk	5,000 (Norfolk)	Headland (1989)
1817	3	Admiral Colpoys, King George, Pickering		Bonner (1964)
1818	10	Norfolk, Echo, Indispensable, Arab, Grand Sachem, Ann, Mary Ann, King George, Dove, Anne		Jones (1973), Headland (1989)
1819	6	Recovery, Echo, Mary Ann, Arab, Indispensable, Gleaner		Jones (1973), Headland (1989)
1820	3	Francis Allen, Anne, Norfolk		Jones (1973), Headland (1989)

1821	6	Ann, George IV, Jane, Beaufoy, King George, Tartar	Jones (1973), Headland (1989)
1822	3	Jane, Beaufoy, Wasp	Bonner (1964), Headland (1989)
1823	1	King George	Headland (1989)
1828	1	Hope	Jones (1973)
1829	1	Pacific	250 Bonner (1964)
1830	1	Elizabeth Jane	600 Bonner (1964)
1838	1	Mary Jane	600 Bonner (1964)
1846	1	Esther	Headland (1989)
1869	1		Allen (1899)
1870	3	Flying Fish, Peru, Trinity	500 (Trinity) Bonner (1958), Headland (1989)
1871	1	Sarah W. Hunt	Bonner (1964)
1874	6	Franklin (reported 5 other vessels), Flying Fish, Golden West, Thomas Hunt	1,450 (Franklin) Headland (1989), Allen (1899)
1875	5	Flying Fish, Golden West, Lizzie P. Simmons	600 (taken by 5 vessels) Allen (1899)
1876	6	Golden West, Lizzie P. Simmons, Florence (reported 4 other vessels), Trinity, Flying Fish	110 (taken by 4 vessels) Allen (1899), Headland (1989)
1877	7	Eothen, Flying Fish, Trinity, Golden West, Franklin (reported 6 other vessels)	75 (Eothen) Bonner (1964), Headland (1989)
1878	2	Trinity, Golden West	Headland (1989)
1880	1	Wanderer	Headland (1989)
1882	2	Sarah W. Hunt, Thomas Hunt	Headland (1989)
1885	1	Express	Headland (1989)
1886	1	Express	Headland (1989)
1887	1	Francis Allyn	3 Headland (1989)
1889	1	Sarah W. Hunt	Headland (1989)
1892	1		Allen (1899)
1893	3	Jason, Castor, Hertha	Headland (1989)
1901	1	Beatrice L. Corkum	Headland (1989)
1905	2	Baden Powell, Edith R. Balcom	Headland (1989)
1908*	1	Daisy	170 Larsen (1920)

* This voyage is recorded by Larsen (1920) as being in 1906, but logbooks examined by R. Headland suggest that it took place in 1908.

Table S2. Summary of post-bottleneck population sizes for the Antarctic fur seal population at South Georgia. The very earliest observations were direct counts of individual adults sighted ashore, whereas subsequent population sizes are mostly estimates based on numbers of pups born (Shaughnessy & Goldsworthy 1990), mark-recapture analysis of tagged pups (Payne 1977) or analysis of adult female haul-out distribution data (Boyd 1993). In addition to the data shown below, annual rates of increase were recorded by Boyd (1993) as 16.8% for the late 1960's to early 1970's, 11.5% for the mid 1970's and 9.8% for the period 1976–1990.

Year	Direct count of individuals ashore	Pup production	Population estimate	Source
1911	30			Larsen (1920)
1915	1			Bonner (1964)
1919	5			Bonner (1964)
1927	2			Harrison-Matthews (1929)
1933	38		60	Rayner (1933) in Bonner (1964)
1936	59	12	100	Laws (1973)
1946	20			Rankin (1951)
1950			1,000–3,000	Laws (1973)
1956		3,250	8,000–10,000	Bonner (1964), Bonner (1976)
1957		5,350	15,000	Bonner (1958)
1958		6,800		Bonner (1964)
1959		8,300		Bonner (1964)
1960		9,400		Bonner (1964)
1961		9,900		Bonner (1964)
1963		11,500		Laws (1973)
1975		90,000	300,000	Bonner (1976)
1976		102,000		Croxall & Prince (1979)
1990		269,000	1,550,000	Boyd (1993)
1999			3,000,000	Antarctic Treaty Consultative Meeting XXIII

Table S3. Polymorphism characteristics of 21 microsatellite loci in 142 Antarctic fur seals from the study colony at Bird Island, South Georgia. H_E , and H_O denote expected and observed heterozygosity respectively.

Locus	Number of alleles	H_E	H_O	HWE <i>P</i> -value
Aa4	6	0.741	0.718	0.630
Ag10	7	0.766	0.759	0.596
Agaz1	12	0.871	0.821	0.311
Agaz2	10	0.786	0.803	0.340
Hg1.3	13	0.874	0.870	0.962
Hg6.3	13	0.878	0.848	0.090
Hg6.10	13	0.861	0.892	0.797
Hg8.10	4	0.499	0.525	0.737
Lw8	13	0.906	0.942	0.796
Lw10	15	0.909	0.901	0.646
Lw15	14	0.886	0.833	0.085
M11a	18	0.912	0.894	0.300
OrrFCB1	10	0.798	0.739	0.329
OrrFCB7	11	0.845	0.866	0.811
OrrFCB8	8	0.787	0.812	0.886
OrrFCB16	4	0.592	0.613	0.228
Pv9	10	0.742	0.750	0.709
PvcA	7	0.784	0.752	0.432
PvcE	14	0.879	0.908	0.765
Zcwb07	12	0.850	0.894	0.146
Zcwg04	16	0.894	0.899	0.508

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