

Conservation implications of limited genetic diversity and population structure in Tasmanian devils (*Sarcophilus harrisii*)

Conservation Genetics

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Electronic Supplementary Material

Table S1 Data per site including the latitude and longitude of each location, the number of samples collected per site, the year samples were collected, and the year of first detection of disease (or absence of disease)

| LOCATION ID | LOCATION | LATITUDE | LONGITUDE | # OF SAMPLES PER LOCATION | YEARS THE SAMPLES WERE COLLECTED | APPROXIMATE DATE OF DISEASE OUTBREAK |
|-------------|-------------------|----------|-----------|---------------------------|----------------------------------|--------------------------------------|
| 1 | Mt William | -40.886 | 148.190 | 2 | 2008 | <1996 |
| 2 | St Helens | -41.340 | 148.170 | 1 | 2006 | <1996 |
| 3 | St Marys | -41.544 | 148.117 | 2 | 2006 | <1996 |
| 4 | Blessington | -41.473 | 147.457 | 2 | 2005 | 2003 |
| 5 | Freycinet | -42.220 | 148.310 | 2 | 1999 | 2001 |
| 6 | Little Swanport | -42.290 | 147.910 | 1 | 1999 | 1999 |
| 7 | Buckland | -42.430 | 147.772 | 2 | 2006 | 1999 |
| 8 | Pawleena | -42.690 | 147.610 | 2 | 1999 | 2003 |
| 9 | Kellevie | -42.740 | 147.800 | 2 | 1998 | 2003 |
| 10 | Forestier | -42.897 | 147.906 | 2 | 2004 | 2006 |
| 11 | Bothwell | -42.330 | 147.000 | 2 | 2008 | 2004 |
| 12 | Elderslie | -42.526 | 147.042 | 2 | 2008 | 2004 |
| 13 | Fentonbury | -42.621 | 146.790 | 2 | 2004 | 2004 |
| 14 | Lonnvale | -42.928 | 146.792 | 1 | 2004 | 2004 |
| 15 | Glen Huon | -42.988 | 146.802 | 2 | 2008 | 2004 |
| 16 | Hastings Caves | -43.479 | 146.905 | 1 | 2005 | 2006 |
| 17 | Reedy Marsh | -42.750 | 146.287 | 2 | 2007 | 2004 |
| 18 | Bronte Park | -42.096 | 146.441 | 2 | 2004 | 2004 |
| 19 | Lake Rowallan | -41.766 | 146.166 | 2 | 2004 | 2004 |
| 20 | Wisedale | -41.294 | 146.671 | 2 | 2006 | 2004 |
| 21 | Harford | -41.260 | 146.590 | 1 | 2006 | 2003 |
| 22 | Narawntapu | -41.220 | 146.640 | 2 | 1999 | 2007 |
| 23 | Mt Housetop | -41.268 | 145.874 | 2 | 2007 | 2005 |
| 24 | West Pencil Pine | -41.517 | 145.767 | 2 | 2006 & 2007 | 2006 |
| 25 | Takone | -41.195 | 145.592 | 2 | 2007 | 2010 |
| 26 | Mt Hicks | -41.019 | 145.658 | 1 | 2007 | 2011 |
| 27 | Flowerdale | -41.107 | 145.499 | 2 | 2009 | 2012 |
| 28 | Peegra Dip Falls | -41.030 | 145.460 | 2 | 2009 | 2013 |
| 29 | Milkshake Hills | -41.109 | 145.188 | 2 | 2004 | 2013 |
| 30 | Woolnorth | -40.693 | 144.710 | 2 | 2006 | No disease |
| 31 | Arthur River | -40.992 | 144.672 | 2 | 2007 | No disease |
| 32 | Savage River | -41.651 | 145.079 | 2 | 2007 | No disease |
| 33 | Granville Harbour | -41.794 | 145.066 | 2 | 2004 | 2015 |
| 34 | Queenstown North | -41.941 | 145.459 | 2 | 2007 | 2014 |
| 35 | Mt Arrowsmith | -42.165 | 145.927 | 2 | 2004 & 2005 | 2005 |
| 36 | Queenstown South | -42.166 | 145.547 | 2 | 2007 | No disease |
| 37 | Strahan | -41.170 | 145.450 | 2 | 2008 | No disease |
| 38 | Macquarie Heads | -42.393 | 145.232 | 2 | 2006 | No disease |

Table S2 The number of SNPs discovered per chromosome

| Chromosome | # of SNPs |
|------------|-----------|
| 1 | 1419 |
| 2 | 1485 |
| 3 | 1228 |
| 4 | 924 |
| 5 | 636 |
| 6 | 666 |
| Unknown | 4 |

Table S3 The harvested results of STRUCTURE analyses. Using the Evanno method, K = 2 (in bold) was the optimal number of clusters

| K | Reps | Mean LnP(K) | Stdev LnP(K) | Ln'(K) | Ln''(K) | Delta K |
|----------|-----------|---------------------|---------------|---------------------|--------------------|--------------------|
| 1 | 20 | -234254.8500 | 13.6578 | NA | NA | NA |
| 2 | 20 | -220483.4000 | 4.6169 | 13771.450000 | 8820.500000 | 1910.479989 |
| 3 | 20 | -215532.4500 | 3.0266 | 4950.950000 | 2853.470000 | 942.785941 |
| 4 | 20 | -213434.9700 | 235.0678 | 2097.480000 | 15949.040000 | 67.848677 |
| 5 | 20 | -227286.5300 | 26674.4181 | -13851.560000 | 20719.135000 | 0.776742 |
| 6 | 20 | -220418.9550 | 23029.3639 | 6867.575000 | 3436.580000 | 0.149226 |
| 7 | 20 | -210114.8000 | 166.3816 | 10304.155000 | 9570.520000 | 57.521497 |
| 8 | 20 | -209381.1650 | 154.7725 | 733.635000 | 304.065000 | 1.964594 |
| 9 | 20 | -208951.5950 | 296.2365 | 429.570000 | 864.250000 | 2.917433 |
| 10 | 20 | -209386.2750 | 940.3062 | -434.680000 | NA | NA |

Figure S1 Genetic distance (Rousset's) across all SNPs vs. log10-transformed geographic distance, showing the Mantel test best-fit line. There was no significant relationship between geographic and genetic distance (Mantel $r = 0.002179$; $p = 0.48$)

