

Table Appendix S8: Phylogenetic α -diversity output statistics. Table summarizes: the number of taxa (N taxa), the observed phylogenetic diversity (obs), the mean phylogenetic diversity from the phylogeny shuffle randomization (rand mean), the standard deviation of phylogenetic diversity from the phylogeny shuffle randomization (rand sd), the rank of the observed metric compared to the metric calculated after the phylogeny shuffle randomization (obs rank), the z-score or standardized effect size (SES) of the observed metric compared to the phylogeny shuffle randomization (obs z), the P -value (quantile) of observed metric compared to the phylogeny shuffle randomization (obs p = obs rank / runs; runs = 10,000), if the P -value was significant (sig), the phylogenetic diversity metric calculated (metric), the clade the metric was calculated for (clade), and the species pool considered (species pool; All Alpine = species collected above treeline, Talus = only species collected on the talus slopes, Meadow = only species collected in alpine meadows).

summit	N taxa	obs	rand mean	rand sd	obs rank	obs z	P -value	sig	metric	clade	species pool
Summit	N taxa	obs	rand mean	rand sd	obs.rank	obs.z	obs.p	sig	metric	clade	Species Pool
Braxton Peak	26	89.3779	136.5775	32.5507	630	-1.4500	0.0630	0	MNTD	Tracheophyta	All Alpine
Castle Peak	53	114.5959	95.3984	16.9686	8580	1.1314	0.8579	0	MNTD	Tracheophyta	All Alpine
D.O. Lee Peak	51	73.0399	97.5590	17.5086	863	-1.4004	0.0863	0	MNTD	Tracheophyta	All Alpine
Horstmann Peak	35	112.1795	118.8406	25.2802	4149	-0.2635	0.4149	0	MNTD	Tracheophyta	All Alpine
Hyndman Peak	72	63.0396	78.9784	11.8366	943	-1.3466	0.0943	0	MNTD	Tracheophyta	All Alpine
Mount Cramer	37	110.2914	115.3402	23.9894	4368	-0.2105	0.4368	0	MNTD	Tracheophyta	All Alpine
Salzburger Spitzl	63	105.7344	86.1402	13.8716	9149	1.4125	0.9148	0	MNTD	Tracheophyta	All Alpine
Snowyside Peak	35	128.1712	118.8494	25.2884	6411	0.3686	0.6410	0	MNTD	Tracheophyta	All Alpine
Thompson Peak	45	77.1166	104.0580	19.9201	921	-1.3525	0.0921	0	MNTD	Tracheophyta	All Alpine
Braxton Peak	7	40.8640	49.6899	16.9383	3178	-0.5211	0.3178	0	MNTD	Asterales	All Alpine
Castle Peak	17	22.1824	28.2572	6.7988	1948	-0.8935	0.1948	0	MNTD	Asterales	All Alpine
D.O. Lee Peak	10	36.3680	39.9922	12.1452	3933	-0.2984	0.3933	0	MNTD	Asterales	All Alpine
Horstmann Peak	7	55.0830	49.5895	17.1291	6313.5	0.3207	0.6313	0	MNTD	Asterales	All Alpine
Hyndman Peak	19	22.9034	26.1052	5.9286	2972	-0.5401	0.2972	0	MNTD	Asterales	All Alpine
Mount Cramer	10	25.7797	39.9039	12.1888	1304	-1.1588	0.1304	0	MNTD	Asterales	All Alpine
Salzburger Spitzl	14	32.2669	32.1369	8.4271	5100	0.0154	0.5099	0	MNTD	Asterales	All Alpine
Snowyside Peak	11	14.0646	37.7263	11.0318	115	-2.1449	0.0115	1	MNTD	Asterales	All Alpine
Thompson Peak	9	30.5281	42.5440	13.4830	2003	-0.8912	0.2003	0	MNTD	Asterales	All Alpine
Braxton Peak	5	71.7160	74.1883	20.5021	4980.5	-0.1206	0.4980	0	MNTD	Caryophyllales	All Alpine
Castle Peak	5	74.3753	74.0911	20.3489	5424.5	0.0140	0.5424	0	MNTD	Caryophyllales	All Alpine
D.O. Lee Peak	9	52.9309	50.2240	11.0123	5933	0.2458	0.5932	0	MNTD	Caryophyllales	All Alpine
Horstmann Peak	4	38.2158	87.0519	24.9079	369.5	-1.9607	0.0369	1	MNTD	Caryophyllales	All Alpine
Hyndman Peak	11	41.1182	43.9117	8.7269	3692	-0.3201	0.3692	0	MNTD	Caryophyllales	All Alpine
Mount Cramer	4	106.1159	86.1643	25.0035	7677	0.7980	0.7676	0	MNTD	Caryophyllales	All Alpine
Salzburger Spitzl	8	55.6063	54.2422	12.6123	5389	0.1082	0.5388	0	MNTD	Caryophyllales	All Alpine
Snowyside Peak	4	76.6994	86.9738	24.8415	3445.5	-0.4136	0.3445	0	MNTD	Caryophyllales	All Alpine
Thompson Peak	6	53.3127	65.3245	17.0438	2336	-0.7048	0.2336	0	MNTD	Caryophyllales	All Alpine
Braxton Peak	5	92.0851	115.0876	35.1084	2681.5	-0.6552	0.2681	0	MNTD	Poales	All Alpine
Castle Peak	7	74.1700	86.7589	22.3736	2779.5	-0.5627	0.2779	0	MNTD	Poales	All Alpine
D.O. Lee Peak	7	102.0781	86.7149	22.2303	7467	0.6911	0.7466	0	MNTD	Poales	All Alpine
Horstmann Peak	6	131.3819	98.8513	27.6845	8631.5	1.1750	0.8631	0	MNTD	Poales	All Alpine
Hyndman Peak	12	56.4683	54.4196	8.5025	5769	0.2409	0.5768	0	MNTD	Poales	All Alpine

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summit	N taxa	obs	rand mean	rand sd	obs rank	obs z	P-value	metric	sig	clade	species pool
Mount Cramer	6	81.7166	99.1719	27.5571	2512.5	-0.6334	0.2512	0	MNTD	Poales	All Alpine
Salzburger Spitzl	9	77.8023	69.6869	14.9941	6894	0.5412	0.6893	0	MNTD	Poales	All Alpine
Snowyside Peak	5	110.7906	114.7125	35.2844	3906.5	-0.1112	0.3906	0	MNTD	Poales	All Alpine
Thompson Peak	8	79.5126	77.4276	18.2364	5218.5	0.1143	0.5218	0	MNTD	Poales	All Alpine
Braxton Peak	2	27.3270	64.8363	23.5725	944.5	-1.5912	0.0944	0	MNTD	Lamiales	All Alpine
Castle Peak	3	46.0146	53.6315	17.6642	4379	-0.4312	0.4379	0	MNTD	Lamiales	All Alpine
D.O. Lee Peak	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	All Alpine
Horstmann Peak	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	All Alpine
Hyndman Peak	4	58.2130	45.3287	13.3879	8451.5	0.9624	0.8451	0	MNTD	Lamiales	All Alpine
Mount Cramer	3	28.5633	53.5661	17.6071	976.5	-1.4200	0.0976	0	MNTD	Lamiales	All Alpine
Salzburger Spitzl	6	37.0270	34.6959	8.6687	5491.5	0.2689	0.5491	0	MNTD	Lamiales	All Alpine
Snowyside Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	All Alpine
Thompson Peak	2	74.9335	65.3875	23.4935	3872.5	0.4063	0.3872	0	MNTD	Lamiales	All Alpine
Braxton Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Brassicales	All Alpine
Castle Peak	5	6.8700	16.1856	4.4808	454	-2.0790	0.0454	1	MNTD	Brassicales	All Alpine
D.O. Lee Peak	4	22.4763	18.5564	5.9810	7908	0.6554	0.7907	0	MNTD	Brassicales	All Alpine
Horstmann Peak	2	40.8734	29.9076	14.4183	6458	0.7606	0.6457	0	MNTD	Brassicales	All Alpine
Hyndman Peak	5	20.0737	16.1252	4.5244	7633	0.8727	0.7632	0	MNTD	Brassicales	All Alpine
Mount Cramer	2	26.0531	29.7091	14.5076	3365	-0.2520	0.3365	0	MNTD	Brassicales	All Alpine
Salzburger Spitzl	3	37.3539	22.7391	8.9096	9134	1.6403	0.9133	0	MNTD	Brassicales	All Alpine
Snowyside Peak	3	37.3539	22.9042	9.0033	9082.5	1.6049	0.9082	0	MNTD	Brassicales	All Alpine
Thompson Peak	3	14.1084	22.7698	8.8733	1348.5	-0.9761	0.1348	0	MNTD	Brassicales	All Alpine
Braxton Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Ericales	All Alpine
Castle Peak	2	60.7213	129.0351	56.3919	2524	-1.2114	0.2524	0	MNTD	Ericales	All Alpine
D.O. Lee Peak	5	96.8332	66.8543	21.8421	9461.5	1.3725	0.9461	0	MNTD	Ericales	All Alpine
Horstmann Peak	2	165.6447	129.2357	56.4174	5340.5	0.6454	0.5340	0	MNTD	Ericales	All Alpine
Hyndman Peak	6	51.8334	58.3211	15.3555	3208	-0.4225	0.3208	0	MNTD	Ericales	All Alpine
Mount Cramer	3	23.4240	101.1867	38.4455	85	-2.0227	0.0085	1	MNTD	Ericales	All Alpine
Salzburger Spitzl	4	114.3768	80.7064	27.6733	9153	1.2167	0.9152	0	MNTD	Ericales	All Alpine
Snowyside Peak	3	84.3417	100.0933	38.3413	2826	-0.4108	0.2826	0	MNTD	Ericales	All Alpine
Thompson Peak	5	38.3429	66.9372	21.5914	1404.5	-1.3243	0.1404	0	MNTD	Ericales	All Alpine
Braxton Peak	26	334.7769	319.2831	53.6715	6352	0.2887	0.6351	0	MPD	Tracheophyta	All Alpine
Castle Peak	53	327.0381	319.5218	33.1867	5917	0.2265	0.5916	0	MPD	Tracheophyta	All Alpine
D.O. Lee Peak	51	258.2889	319.1821	33.8738	318	-1.7977	0.0318	1	MPD	Tracheophyta	All Alpine
Horstmann Peak	35	414.1554	319.6092	44.6160	9770	2.1191	0.9769	1	MPD	Tracheophyta	All Alpine
Hyndman Peak	72	279.1681	319.0366	25.6854	630	-1.5522	0.0630	0	MPD	Tracheophyta	All Alpine
Mount Cramer	37	323.0130	319.6096	42.5737	5502	0.0799	0.5501	0	MPD	Tracheophyta	All Alpine
Salzburger Spitzl	63	309.4804	318.6932	28.5608	3806	-0.3226	0.3806	0	MPD	Tracheophyta	All Alpine
Snowyside Peak	35	390.6137	319.0642	44.2550	9380	1.6168	0.9379	0	MPD	Tracheophyta	All Alpine
Thompson Peak	45	323.9410	318.1121	37.1511	5778	0.1569	0.5777	0	MPD	Tracheophyta	All Alpine
Braxton Peak	7	88.3251	90.4796	12.0288	4011.5	-0.1791	0.4011	0	MPD	Asterales	All Alpine
Castle Peak	17	86.8631	90.6804	5.8198	2545	-0.6559	0.2545	0	MPD	Asterales	All Alpine
D.O. Lee Peak	10	78.2037	90.5839	9.1491	763	-1.3532	0.0763	0	MPD	Asterales	All Alpine
Horstmann Peak	7	93.9886	90.4984	12.2444	6119.5	0.2850	0.6119	0	MPD	Asterales	All Alpine
Hyndman Peak	19	93.0169	90.6765	5.1963	6443	0.4504	0.6442	0	MPD	Asterales	All Alpine
Mount Cramer	10	84.8392	90.6215	9.1298	2325	-0.6333	0.2325	0	MPD	Asterales	All Alpine
Salzburger Spitzl	14	90.6494	90.6165	7.0028	4825	0.0047	0.4825	0	MPD	Asterales	All Alpine
Snowyside Peak	11	84.4583	90.7207	8.5025	2240	-0.7365	0.2240	0	MPD	Asterales	All Alpine
Thompson Peak	9	88.2301	90.6337	9.9380	3892	-0.2419	0.3892	0	MPD	Asterales	All Alpine
Braxton Peak	5	138.8168	133.4664	15.4481	5728.5	0.3463	0.5728	0	MPD	Caryophyllales	All Alpine
Castle Peak	5	139.4816	133.8713	15.0777	6216	0.3721	0.6215	0	MPD	Caryophyllales	All Alpine
D.O. Lee Peak	9	135.6947	133.8164	6.4162	5334	0.2927	0.5333	0	MPD	Caryophyllales	All Alpine

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summit	N taxa	obs	rand mean	rand sd	obs rank	obs z	P-value	metric	sig	clade	species pool
Horstmann Peak	4	72.8928	133.8902	20.4804	249.5	-2.9783	0.0249	1	MPD	Caryophyllales	All Alpine
Hyndman Peak	11	138.0937	133.8825	4.4956	8906.5	0.9367	0.8906	0	MPD	Caryophyllales	All Alpine
Mount Cramer	4	154.6532	133.9201	19.9940	9400.5	1.0370	0.9400	0	MPD	Caryophyllales	All Alpine
Salzburger Spitzl	8	139.8267	133.7098	7.6994	8168	0.7945	0.8167	0	MPD	Caryophyllales	All Alpine
Snowyside Peak	4	122.6751	133.7277	20.2071	2063	-0.5470	0.2063	0	MPD	Caryophyllales	All Alpine
Thompson Peak	6	138.6210	133.5849	11.8437	5512	0.4252	0.5511	0	MPD	Caryophyllales	All Alpine
Braxon Peak	5	247.3045	224.2358	34.3278	6860	0.6720	0.6859	0	MPD	Poales	All Alpine
Castle Peak	7	196.3248	223.7613	23.3038	1189	-1.1773	0.1189	0	MPD	Poales	All Alpine
D.O. Lee Peak	7	234.3407	223.8945	23.3022	5948.5	0.4483	0.5948	0	MPD	Poales	All Alpine
Horstmann Peak	6	249.3871	224.1711	27.1715	8849.5	0.9280	0.8849	0	MPD	Poales	All Alpine
Hyndman Peak	12	221.3833	223.8036	11.5386	3359	-0.2098	0.3359	0	MPD	Poales	All Alpine
Mount Cramer	6	222.9512	223.7975	27.9113	3904	-0.0303	0.3904	0	MPD	Poales	All Alpine
Salzburger Spitzl	9	211.1910	223.6943	17.2582	2068	-0.7245	0.2068	0	MPD	Poales	All Alpine
Snowyside Peak	5	183.4858	223.8038	33.9036	1318.5	-1.1892	0.1318	0	MPD	Poales	All Alpine
Thompson Peak	8	245.5831	223.9187	19.7162	9646.5	1.0988	0.9646	1	MPD	Poales	All Alpine
Braxon Peak	2	27.3270	65.0221	23.6750	933.5	-1.5922	0.0933	0	MPD	Lamiales	All Alpine
Castle Peak	3	63.5260	65.2758	13.1200	4552	-0.1334	0.4552	0	MPD	Lamiales	All Alpine
D.O. Lee Peak	1	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	All Alpine
Horstmann Peak	1	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	All Alpine
Hyndman Peak	4	69.2006	65.2603	8.6998	5524	0.4529	0.5523	0	MPD	Lamiales	All Alpine
Mount Cramer	3	54.8003	65.1912	12.9975	1331.5	-0.7995	0.1331	0	MPD	Lamiales	All Alpine
Salzburger Spitzl	6	56.8366	65.2470	4.9663	767.5	-1.6935	0.0767	0	MPD	Lamiales	All Alpine
Snowyside Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	All Alpine
Thompson Peak	2	74.9335	65.0570	23.5620	3956.5	0.4192	0.3956	0	MPD	Lamiales	All Alpine
Braxon Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Brassicales	All Alpine
Castle Peak	5	27.8110	29.8434	4.4632	2125	-0.4554	0.2125	0	MPD	Brassicales	All Alpine
D.O. Lee Peak	4	34.7411	29.7951	5.9847	7901	0.8264	0.7900	0	MPD	Brassicales	All Alpine
Horstmann Peak	2	40.8734	29.8637	14.3873	6537.5	0.7652	0.6537	0	MPD	Brassicales	All Alpine
Hyndman Peak	5	31.1119	29.7821	4.4594	6546.5	0.2982	0.6546	0	MPD	Brassicales	All Alpine
Mount Cramer	2	26.0531	29.8659	14.3998	3318.5	-0.2648	0.3318	0	MPD	Brassicales	All Alpine
Salzburger Spitzl	3	39.1137	29.5281	8.6490	9138.5	1.1083	0.9138	0	MPD	Brassicales	All Alpine
Snowyside Peak	3	39.1137	29.8793	8.5377	9071	1.0816	0.9070	0	MPD	Brassicales	All Alpine
Thompson Peak	3	24.8513	29.8800	8.4047	1360	-0.5983	0.1360	0	MPD	Brassicales	All Alpine
Braxon Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Ericales	All Alpine
Castle Peak	2	60.7213	129.3935	55.8233	2502	-1.2302	0.2502	0	MPD	Ericales	All Alpine
D.O. Lee Peak	5	134.3746	129.4853	13.4470	6224.5	0.3636	0.6224	0	MPD	Ericales	All Alpine
Horstmann Peak	2	165.6447	128.8895	56.4298	5371	0.6513	0.5370	0	MPD	Ericales	All Alpine
Hyndman Peak	6	133.8226	129.4535	9.0957	4241	0.4803	0.4241	0	MPD	Ericales	All Alpine
Mount Cramer	3	40.6143	129.7441	30.1696	90.5	-2.9543	0.0090	1	MPD	Ericales	All Alpine
Salzburger Spitzl	4	150.5450	129.3310	19.7239	9181.5	1.0756	0.9181	0	MPD	Ericales	All Alpine
Snowyside Peak	3	124.9932	130.0217	29.5441	2716	-0.1702	0.2716	0	MPD	Ericales	All Alpine
Thompson Peak	5	117.6432	129.3528	13.4940	2180	-0.8678	0.2180	0	MPD	Ericales	All Alpine
Braxon Peak	26	89.3779	139.4800	33.1599	605	-1.5109	0.0605	0	MNTD	Tracheophyta	Talus
Castle Peak	53	114.5959	92.3731	15.9598	9122	1.3924	0.9121	0	MNTD	Tracheophyta	Talus
D.O. Lee Peak	31	88.1213	127.7565	28.4275	829	-1.3943	0.0829	0	MNTD	Tracheophyta	Talus
Horstmann Peak	35	112.1795	119.6700	25.1204	3934	-0.2982	0.3934	0	MNTD	Tracheophyta	Talus
Hyndman Peak	43	62.4178	105.9881	20.2707	102	-2.1494	0.0102	1	MNTD	Tracheophyta	Talus
Mount Cramer	37	110.2914	116.0462	24.0128	4199	-0.2397	0.4199	0	MNTD	Tracheophyta	Talus
Salzburger Spitzl	43	133.0273	105.6331	20.4734	9000	1.3380	0.8999	0	MNTD	Tracheophyta	Talus
Snowyside Peak	35	128.1712	119.5346	25.0051	6251	0.3454	0.6250	0	MNTD	Tracheophyta	Talus
Thompson Peak	17	98.2424	168.2524	46.0683	440	-1.5197	0.0440	1	MNTD	Tracheophyta	Talus
Braxon Peak	7	40.8640	44.4575	14.6887	4103	-0.2446	0.4103	0	MNTD	Asterales	Talus

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summit	N taxa	obs	rand mean	rand sd	obs rank	obs z	P-value	metric	sig	clade	species pool
Castle Peak	17	22.1824	24.7711	5.1185	3038	-0.5058	0.3038	0	MNTD	Asterales	Talus
D.O. Lee Peak	6	39.5276	49.0854	17.3386	2882.5	-0.5512	0.2882	0	MNTD	Asterales	Talus
Horstmann Peak	7	55.0830	44.9175	14.6587	7546.5	0.6935	0.7546	0	MNTD	Asterales	Talus
Hyndman Peak	12	41.9305	31.3310	8.1706	8979	1.2973	0.8978	0	MNTD	Asterales	Talus
Mount Cramer	10	25.7797	35.5391	10.0993	1790	-0.9663	0.1790	0	MNTD	Asterales	Talus
Salzburger Spitzl	10	56.7324	35.7840	10.0428	9868	2.0859	0.9867	1	MNTD	Asterales	Talus
Snowyside Peak	11	14.0646	33.3778	9.1416	163	-2.1127	0.0163	1	MNTD	Asterales	Talus
Thompson Peak	4	64.8555	61.8315	24.7649	6572.5	0.1221	0.6572	0	MNTD	Asterales	Talus
Braxton Peak	5	71.7160	74.5295	17.7609	4718	-0.1584	0.4718	0	MNTD	Caryophyllales	Talus
Castle Peak	5	74.3753	74.6016	17.8022	5278.5	-0.0127	0.5278	0	MNTD	Caryophyllales	Talus
D.O. Lee Peak	6	74.4494	67.0578	14.0046	7241.5	0.5278	0.7241	0	MNTD	Caryophyllales	Talus
Horstmann Peak	4	38.2158	86.2764	23.5102	425.5	-2.0442	0.0425	1	MNTD	Caryophyllales	Talus
Hyndman Peak	6	74.4494	66.8484	14.1044	7099	0.5389	0.7098	0	MNTD	Caryophyllales	Talus
Mount Cramer	4	106.1159	86.5064	23.5464	7864.5	0.8328	0.7864	0	MNTD	Caryophyllales	Talus
Salzburger Spitzl	7	73.0015	61.6295	11.2827	8282.5	1.0079	0.8282	0	MNTD	Caryophyllales	Talus
Snowyside Peak	4	76.6994	86.3302	23.6358	3312	-0.4075	0.3312	0	MNTD	Caryophyllales	Talus
Thompson Peak	3	72.1888	104.7045	32.2287	2041.5	-1.0089	0.2041	0	MNTD	Caryophyllales	Talus
Braxton Peak	5	92.0851	118.9156	34.7100	2320	-0.7730	0.2320	0	MNTD	Poales	Talus
Castle Peak	7	74.1700	84.4152	21.3187	2898	-0.4806	0.2898	0	MNTD	Poales	Talus
D.O. Lee Peak	4	166.3436	144.8279	47.1692	5836.5	0.4561	0.5836	0	MNTD	Poales	Talus
Horstmann Peak	6	131.3819	98.9544	27.1215	8725	1.1956	0.8724	0	MNTD	Poales	Talus
Hyndman Peak	9	74.0314	64.6776	13.0470	7793	0.7169	0.7792	0	MNTD	Poales	Talus
Mount Cramer	6	81.7166	99.1713	26.5365	2376	-0.6578	0.2376	0	MNTD	Poales	Talus
Salzburger Spitzl	7	97.6953	84.7694	21.3320	7121	0.6059	0.7120	0	MNTD	Poales	Talus
Snowyside Peak	5	110.7906	118.3214	34.2294	3627	-0.2200	0.3627	0	MNTD	Poales	Talus
Thompson Peak	5	93.8207	118.8097	34.7334	2319.5	-0.7195	0.2319	0	MNTD	Poales	Talus
Braxton Peak	2	27.3270	56.3486	29.2047	2312	-0.9937	0.2312	0	MNTD	Lamiales	Talus
Castle Peak	3	46.0146	39.1228	9.2740	8813.5	0.7431	0.8813	0	MNTD	Lamiales	Talus
D.O. Lee Peak	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	Talus
Horstmann Peak	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	Talus
Hyndman Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	Talus
Mount Cramer	3	28.5633	39.0438	9.3568	1937.5	-1.1201	0.1937	0	MNTD	Lamiales	Talus
Salzburger Spitzl	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	Talus
Snowyside Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	Talus
Thompson Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	Talus
Braxton Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Brassicales	Talus
Castle Peak	5	6.8700	16.1123	4.4953	502.5	-2.0560	0.0502	0	MNTD	Brassicales	Talus
D.O. Lee Peak	4	22.4763	18.6580	5.9192	7912	0.6451	0.7911	0	MNTD	Brassicales	Talus
Horstmann Peak	2	40.8734	29.7303	14.4248	6573.5	0.7725	0.6573	0	MNTD	Brassicales	Talus
Hyndman Peak	5	20.0737	16.1299	4.4749	7714	0.8813	0.7713	0	MNTD	Brassicales	Talus
Mount Cramer	2	26.0531	29.8913	14.3862	3318.5	-0.2668	0.3318	0	MNTD	Brassicales	Talus
Salzburger Spitzl	3	37.3539	22.7571	8.9650	9111	1.6282	0.9110	0	MNTD	Brassicales	Talus
Snowyside Peak	3	37.3539	22.8909	8.9324	9103	1.6192	0.9102	0	MNTD	Brassicales	Talus
Thompson Peak	2	35.5941	30.1331	14.2794	3930	0.3824	0.3930	0	MNTD	Brassicales	Talus
Braxton Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Ericales	Talus
Castle Peak	2	60.7213	130.7439	55.5292	2417.5	-1.2610	0.2417	0	MNTD	Ericales	Talus
D.O. Lee Peak	3	85.9334	100.6240	38.7236	3145	-0.3794	0.3145	0	MNTD	Ericales	Talus
Horstmann Peak	2	165.6447	128.9956	56.2567	5382	0.6515	0.5381	0	MNTD	Ericales	Talus
Hyndman Peak	4	74.6333	80.0801	27.7506	4518.5	-0.1963	0.4518	0	MNTD	Ericales	Talus
Mount Cramer	3	23.4240	100.7031	38.1644	84.5	-2.0249	0.0084	1	MNTD	Ericales	Talus
Salzburger Spitzl	3	97.2874	101.3072	38.8753	7433.5	-0.1034	0.7433	0	MNTD	Ericales	Talus
Snowyside Peak	3	84.3417	101.2782	38.4066	2710.5	-0.4410	0.2710	0	MNTD	Ericales	Talus

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Table Appendix S8 – continued from previous page

summit	N taxa	obs	rand mean	rand sd	obs rank	obs z	P-value	metric	sig	clade	species pool
Thompson Peak	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Ericales	Talus
Braxon Peak	26	334.7769	335.5757	56.7011	5088	-0.0141	0.5087	0	MPD	Tracheophyta	Talus
Castle Peak	53	327.0381	334.1109	33.5197	4186	-0.2110	0.4186	0	MPD	Tracheophyta	Talus
D.O. Lee Peak	31	256.6040	334.9705	51.1121	590	-1.5332	0.0590	0	MPD	Tracheophyta	Talus
Horstmann Peak	35	414.1554	334.2162	46.3496	9541	1.7247	0.9540	1	MPD	Tracheophyta	Talus
Hyndman Peak	43	267.1958	334.3362	40.2760	445	-1.6670	0.0445	1	MPD	Tracheophyta	Talus
Mount Cramer	37	323.0130	335.2621	45.2811	4110	-0.2705	0.4110	0	MPD	Tracheophyta	Talus
Salzburger Spitzl	43	340.1210	335.0125	39.8981	5510	0.1280	0.5509	0	MPD	Tracheophyta	Talus
Snowyside Peak	35	390.6137	335.2212	46.8184	8739	1.1831	0.8738	0	MPD	Tracheophyta	Talus
Thompson Peak	17	289.3413	334.9210	73.8529	3131	-0.6172	0.3131	0	MPD	Tracheophyta	Talus
Braxon Peak	7	88.3251	84.3207	10.1093	5792	0.3961	0.5791	0	MPD	Asterales	Talus
Castle Peak	17	86.8631	84.4207	4.3199	6664	0.5654	0.6663	0	MPD	Asterales	Talus
D.O. Lee Peak	6	86.2835	84.3990	11.0492	5146.5	0.1706	0.5146	0	MPD	Asterales	Talus
Horstmann Peak	7	93.9886	84.3736	9.9423	8637.5	0.9671	0.8637	0	MPD	Asterales	Talus
Hyndman Peak	12	80.6159	84.4047	6.1718	2524.5	-0.6139	0.2524	0	MPD	Asterales	Talus
Mount Cramer	10	84.8392	84.3776	7.2550	4252	0.0636	0.4252	0	MPD	Asterales	Talus
Salzburger Spitzl	10	95.6231	84.4795	7.2640	9948.5	1.5341	0.9948	1	MPD	Asterales	Talus
Snowyside Peak	11	84.4583	84.4825	6.6481	4472	-0.0036	0.4472	0	MPD	Asterales	Talus
Thompson Peak	4	91.7021	84.6144	16.4236	6544	0.4316	0.6543	0	MPD	Asterales	Talus
Braxon Peak	5	138.8168	133.9420	15.9365	5064.5	0.3059	0.5064	0	MPD	Caryophyllales	Talus
Castle Peak	5	139.4816	133.6677	16.3231	5725.5	0.3562	0.5725	0	MPD	Caryophyllales	Talus
D.O. Lee Peak	6	143.4662	133.7951	12.5940	8197	0.7679	0.8196	0	MPD	Caryophyllales	Talus
Horstmann Peak	4	72.8928	133.5570	21.9655	319	-2.7618	0.0319	1	MPD	Caryophyllales	Talus
Hyndman Peak	6	143.4662	133.6874	12.7650	8021	0.7661	0.8020	0	MPD	Caryophyllales	Talus
Mount Cramer	4	154.6532	133.7670	21.4556	9301	0.9735	0.9300	0	MPD	Caryophyllales	Talus
Salzburger Spitzl	7	144.0913	133.6444	10.3328	9483.5	1.0110	0.9483	0	MPD	Caryophyllales	Talus
Snowyside Peak	4	122.6751	133.5895	21.5850	2006.5	-0.5056	0.2006	0	MPD	Caryophyllales	Talus
Thompson Peak	3	125.5553	134.1278	30.8419	2920	-0.2779	0.2920	0	MPD	Caryophyllales	Talus
Braxon Peak	5	247.3045	232.8260	25.9884	5856.5	0.5571	0.5856	0	MPD	Poales	Talus
Castle Peak	7	196.3248	232.4233	15.2458	226	-2.3678	0.0226	1	MPD	Poales	Talus
D.O. Lee Peak	4	213.9805	232.4278	36.1694	2948.5	-0.5100	0.2948	0	MPD	Poales	Talus
Horstmann Peak	6	249.3871	232.8414	19.4613	8385	0.8502	0.8384	0	MPD	Poales	Talus
Hyndman Peak	9	225.6087	232.3754	9.8822	1905.5	-0.6847	0.1905	0	MPD	Poales	Talus
Mount Cramer	6	222.9512	232.3125	19.8301	2493	-0.4721	0.2493	0	MPD	Poales	Talus
Salzburger Spitzl	7	233.6102	232.5917	15.5138	4007.5	0.0657	0.4007	0	MPD	Poales	Talus
Snowyside Peak	5	183.4858	232.7689	25.9336	484	-1.9004	0.0484	1	MPD	Poales	Talus
Thompson Peak	5	247.7384	232.1579	26.9212	6930	0.5787	0.6929	0	MPD	Poales	Talus
Braxon Peak	2	27.3270	55.5536	29.3957	2451	-0.9602	0.2451	0	MPD	Lamiales	Talus
Castle Peak	3	63.5260	56.0643	13.6185	8875.5	0.5479	0.8875	0	MPD	Lamiales	Talus
D.O. Lee Peak	1	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	Talus
Horstmann Peak	1	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	Talus
Hyndman Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	Talus
Mount Cramer	3	54.8003	56.1556	13.5635	1984	-0.0999	0.1984	0	MPD	Lamiales	Talus
Salzburger Spitzl	1	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	Talus
Snowyside Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	Talus
Thompson Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	Talus
Braxon Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Brassicales	Talus
Castle Peak	5	27.8110	29.8401	4.4516	2111.5	-0.4558	0.2111	0	MPD	Brassicales	Talus
D.O. Lee Peak	4	34.7411	29.8205	5.9358	7901.5	0.8290	0.7901	0	MPD	Brassicales	Talus
Horstmann Peak	2	40.8734	29.6689	14.4357	6585	0.7762	0.6584	0	MPD	Brassicales	Talus
Hyndman Peak	5	31.1119	29.7982	4.4412	6576.5	0.2958	0.6576	0	MPD	Brassicales	Talus
Mount Cramer	2	26.0531	29.5524	14.5125	3417.5	-0.2411	0.3417	0	MPD	Brassicales	Talus

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Table Appendix S8 – continued from previous page

summit	N taxa	obs	rand mean	rand sd	obs rank	obs z	P-value	metric	sig	clade	species pool
Salzburger Spitzl	3	39.1137	29.8002	8.5295	9092	1.0919	0.9091	0	MPD	Brassicales	Talus
Snowyside Peak	3	39.1137	29.8099	8.5520	9087.5	1.0879	0.9087	0	MPD	Brassicales	Talus
Thompson Peak	2	35.5941	29.7947	14.4133	4029.5	0.4024	0.4029	0	MPD	Brassicales	Talus
Braxon Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Ericales	Talus
Castle Peak	2	60.7213	129.1515	56.2081	2521	-1.2174	0.2521	0	MPD	Ericales	Talus
D.O. Lee Peak	3	128.1766	129.0260	30.2395	3117	-0.0281	0.3117	0	MPD	Ericales	Talus
Horstmann Peak	2	165.6447	129.9447	55.9301	5307	0.6383	0.5306	0	MPD	Ericales	Talus
Hyndman Peak	4	111.0663	128.9527	19.7166	2827.5	-0.9072	0.2827	0	MPD	Ericales	Talus
Mount Cramer	3	40.6143	129.1787	30.3082	87.5	-2.9221	0.0087	1	MPD	Ericales	Talus
Salzburger Spitzl	3	133.8536	129.6214	30.0342	7471	0.1409	0.7470	0	MPD	Ericales	Talus
Snowyside Peak	3	124.9932	129.1292	30.4399	2795.5	-0.1359	0.2795	0	MPD	Ericales	Talus
Thompson Peak	1	NA	NA	NA	NA	NA	NA	NA	MPD	Ericales	Talus
D.O. Lee Peak	26	95.7234	132.8126	26.5271	766	-1.3982	0.0766	0	MNTD	Tracheophyta	Meadow
Hyndman Peak	29	108.6574	127.0153	24.3212	2348	-0.7548	0.2348	0	MNTD	Tracheophyta	Meadow
Salzburger Spitzl	23	111.9261	139.9836	29.7610	1769	-0.9428	0.1769	0	MNTD	Tracheophyta	Meadow
Thompson Peak	31	110.8617	123.1186	22.6365	3039	-0.5415	0.3039	0	MNTD	Tracheophyta	Meadow
D.O. Lee Peak	7	45.4294	51.9285	17.6281	3655	-0.3687	0.3655	0	MNTD	Asterales	Meadow
Hyndman Peak	7	50.3156	51.9759	17.6091	4636	-0.0943	0.4636	0	MNTD	Asterales	Meadow
Salzburger Spitzl	4	62.4845	70.2909	27.2710	4874	-0.2863	0.4874	0	MNTD	Asterales	Meadow
Thompson Peak	5	59.2631	62.8365	23.4681	4132.5	-0.1523	0.4132	0	MNTD	Asterales	Meadow
D.O. Lee Peak	4	13.1377	94.1417	24.7199	77	-3.2769	0.0077	1	MNTD	Caryophyllales	Meadow
Hyndman Peak	5	65.1537	82.1531	21.9533	2394.5	-0.7743	0.2394	0	MNTD	Caryophyllales	Meadow
Salzburger Spitzl	2	178.9219	136.5272	49.0382	5671.5	0.8645	0.5671	0	MNTD	Caryophyllales	Meadow
Thompson Peak	4	70.5579	94.3648	24.5053	1698	-0.9715	0.1698	0	MNTD	Caryophyllales	Meadow
D.O. Lee Peak	4	199.7534	137.7344	47.3942	9445.5	1.3086	0.9445	0	MNTD	Poales	Meadow
Hyndman Peak	3	136.5909	176.2363	71.3663	3683	-0.5555	0.3683	0	MNTD	Poales	Meadow
Salzburger Spitzl	3	76.6195	175.3874	71.3763	828	-1.3838	0.0828	0	MNTD	Poales	Meadow
Thompson Peak	5	154.0251	111.9217	32.2394	8713	1.3060	0.8712	0	MNTD	Poales	Meadow
D.O. Lee Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Lamiales	Meadow
Hyndman Peak	4	58.2130	48.4787	12.9728	7582	0.7504	0.7581	0	MNTD	Lamiales	Meadow
Salzburger Spitzl	5	28.2249	43.5942	10.3413	828	-1.4862	0.0828	0	MNTD	Lamiales	Meadow
Thompson Peak	2	74.9335	65.7302	21.6123	4353	0.4258	0.4353	0	MNTD	Lamiales	Meadow
D.O. Lee Peak	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Brassicales	Meadow
Hyndman Peak	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Brassicales	Meadow
Salzburger Spitzl	0	NA	NA	NA	NA	NA	NA	NA	MNTD	Brassicales	Meadow
Thompson Peak	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Brassicales	Meadow
D.O. Lee Peak	2	165.6447	103.7485	64.6472	7482.5	0.9574	0.7482	0	MNTD	Ericales	Meadow
Hyndman Peak	2	6.2338	102.7996	64.9611	847.5	-1.4865	0.0847	0	MNTD	Ericales	Meadow
Salzburger Spitzl	1	NA	NA	NA	NA	NA	NA	NA	MNTD	Ericales	Meadow
Thompson Peak	4	58.9792	58.9792	0.0000	5001	NA	0.5000	0	MNTD	Ericales	Meadow
D.O. Lee Peak	26	258.7803	309.3301	39.2253	1067	-1.2887	0.1067	0	MPD	Tracheophyta	Meadow
Hyndman Peak	29	294.8667	309.3623	35.3079	3571	-0.4105	0.3571	0	MPD	Tracheophyta	Meadow
Salzburger Spitzl	23	251.2463	309.6145	42.3323	835	-1.3788	0.0835	0	MPD	Tracheophyta	Meadow
Thompson Peak	31	345.9956	309.8192	33.7490	8446	1.0719	0.8445	0	MPD	Tracheophyta	Meadow
D.O. Lee Peak	7	73.7418	95.6945	11.5687	426.5	-1.8976	0.0426	1	MPD	Asterales	Meadow
Hyndman Peak	7	112.5939	96.1323	11.4648	9814.5	1.4358	0.9814	1	MPD	Asterales	Meadow
Salzburger Spitzl	4	89.0636	95.5473	19.4916	4002	-0.3326	0.4002	0	MPD	Asterales	Meadow
Thompson Peak	5	87.9498	96.0284	15.5958	2655.5	-0.5180	0.2655	0	MPD	Asterales	Meadow
D.O. Lee Peak	4	123.6605	137.2007	15.8893	2071	-0.8522	0.2071	0	MPD	Caryophyllales	Meadow
Hyndman Peak	5	141.9416	137.1631	10.9875	6565.5	0.4349	0.6565	0	MPD	Caryophyllales	Meadow
Salzburger Spitzl	2	178.9219	136.2266	49.2323	5680	0.8672	0.5679	0	MPD	Caryophyllales	Meadow
Thompson Peak	4	104.8529	137.2589	16.1736	433	-2.0036	0.0433	1	MPD	Caryophyllales	Meadow

Continued on next page

Table Appendix S8 – continued from previous page

summit	N taxa	obs	rand mean	rand sd	obs rank	obs z	P-value	metric	sig	clade	species pool
D.O. Lee Peak	4	270.0956	229.7278	39.6043	9380	1.0193	0.9379	0	MPD	Poales	Meadow
Hyndman Peak	3	220.9289	229.8378	58.0437	4225.5	-0.1535	0.4225	0	MPD	Poales	Meadow
Salzburger Spitzl	3	100.9860	229.8534	58.7896	837	-2.1920	0.0837	0	MPD	Poales	Meadow
Thompson Peak	5	228.5204	229.4398	29.0460	4071.5	-0.0317	0.4071	0	MPD	Poales	Meadow
D.O. Lee Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Lamiales	Meadow
Hyndman Peak	4	69.2006	65.8337	8.9825	5514.5	0.3748	0.5514	0	MPD	Lamiales	Meadow
Salzburger Spitzl	5	44.7362	65.7973	6.5605	102	-3.2103	0.0102	1	MPD	Lamiales	Meadow
Thompson Peak	2	74.9335	65.4686	21.9739	4334.5	0.4307	0.4334	0	MPD	Lamiales	Meadow
D.O. Lee Peak	1	NA	NA	NA	NA	NA	NA	NA	MPD	Brassicales	Meadow
Hyndman Peak	0	NA	NA	NA	NA	NA	NA	NA	MPD	Brassicales	Meadow
Salzburger Spitzl	0	NA	NA	NA	NA	NA	NA	NA	MPD	Brassicales	Meadow
Thompson Peak	1	NA	NA	NA	NA	NA	NA	NA	MPD	Brassicales	Meadow
D.O. Lee Peak	2	165.6447	103.0724	64.6493	7510.5	0.9679	0.7510	0	MPD	Ericales	Meadow
Hyndman Peak	2	6.2338	103.0612	64.6350	819	-1.4981	0.0819	0	MPD	Ericales	Meadow
Salzburger Spitzl	1	NA	NA	NA	NA	NA	NA	NA	MPD	Ericales	Meadow
Thompson Peak	4	103.1295	103.1295	0.0000	5001	NA	0.5000	0	MPD	Ericales	Meadow