

Table S2. Proportion of assignment to each of K=29 clusters as determined in Structure. The largest proportion of assignment for each population is outlined and shown in bold; those with 30-50% assignment are shown in italic. The top row notes the breed(s) with > 50% of assignment to each of the 29 clusters. This analysis was performed without removal of outlier individuals.

		Population with > 50% assignment to the Cluster																													
Population	Structure Cluster (K=29)	Icelandic	Akhal Teke	Exmoor	Percheron	Franches-Montagnes	Standardbred	Andalusian, Lusitano	Mongolian, Tuva	Clydesdale, Shire	Norwegian Fjord	Peruvian Paso	Puerto Rican Paso Fino	Hanoverian, Swiss Warmblood, Thoroughbred	Saddlebred	Mangalarga Paulista	Tennessee Walking Horse	Arabian	French Trotter	Miniature, Shetland	Fell Pony	Belgian	Finnhorse	New Forest Pony	North Swedish Horse	Maremmano	Florida Cracker	Caspian	Paint, Quarter Horse	Morgan	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		
	Akhal Teke	0.001	0.867	0.001	0.001	0.001	0.001	0.004	0.001	0	0.001	0.002	0.001	0.060	0.001	0.001	0.002	0.036	0.001	0.001	0.001	0.001	0.001	0.008	0.001	0.001	0.001	0.001	0.003	0.003	0.001
	Andalusian	0.001	0.003	0.002	0.001	0.002	0.004	0.915	0.010	0.001	0.002	0.004	0.006	0.002	0.005	0.003	0.001	0.016	0.002	0	0.001	0.001	0.003	0.001	0.004	0.001	0.001	0.001	0.004	0.001	0.004
	Arabian	0.001	0.005	0.001	0.001	0.001	0.003	0.002	0.004	0.001	0.001	0.004	0.001	0.023	0.001	0.002	0.002	0.930	0.002	0.001	0.001	0	0.001	0.002	0	0.002	0.001	0.002	0.002	0.004	0.002
	Belgian	0.003	0.001	0.002	0.014	0.005	0.001	0.001	0.008	0.010	0.005	0.001	0.001	0.001	0.001	0.001	0.003	0.001	0.001	0.001	0.002	0.917	0.009	0.003	0.001	0.001	0.003	0.002	0.001	0.001	
	Caspian	0.003	0.011	0.001	0.001	0.004	0.001	0.003	0.068	0.002	0.002	0.015	0.001	0.006	0.019	0.002	0.001	0.068	0.001	0.001	0.004	0.003	0.002	0.024	0.001	0.003	0.003	0.737	0.007	0.003	
	Clydesdale	0	0	0	0.002	0.001	0.001	0	0	0.976	0.001	0	0	0	0	0	0	0	0	0	0.002	0.001	0	0.010	0	0	0	0	0	0.001	
	Exmoor	0.001	0	0.941	0.002	0.003	0	0.001	0.014	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0	0.001	0.001	0.005	0.002	0.001	0.001	0.012	0	0.001	0.001	0.001	0.002	0.001	
	Fell Pony	0.002	0.001	0.002	0.002	0.006	0.001	0	0.002	0.103	0.001	0.001	0	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.851	0.001	0.003	0.009	0.004	0.001	0.001	0.001	0.001	0.001	
	Finnhorse	0.017	0.001	0.002	0.007	0.004	0.001	0.002	0.035	0.005	0.008	0.002	0.001	0.001	0.001	0.002	0.001	0.001	0.005	0.004	0.004	0.865	0.011	0.013	0.002	0.001	0.002	0.001	0.002	0.001	
	Florida Cracker	0.004	0.006	0.001	0.001	0.887	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.046	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.031	0.003	0.003	0.001	0.002	0.002	0.723	0.001	0.079	
	Franches-Montagnes	0.001	0.001	0.001	0.005	0.887	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.046	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.031	0.003	0.003	0.001	0.002	0.002	0.001	0.002	0.001	
	French Trotter	0.001	0.001	0.002	0.001	0.001	0.042	0.001	0.001	0.001	0	0.001	0.001	0.002	0.002	0.001	0.002	0.005	0.759	0.001	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.006	0.003	
	Hanoverian	0.001	0.008	0.001	0.005	0.023	0.004	0.004	0.012	0.003	0.002	0.005	0.002	0.161	0.015	0.003	0.001	0.024	0.025	0.001	0.003	0.001	0.002	0.194	0.002	0.040	0.002	0.011	0.078	0.014	
	Icelandic	0.937	0.001	0.001	0.002	0.001	0.001	0.001	0.003	0.001	0.004	0.001	0.001	0	0.001	0.001	0	0	0.001	0.028	0.001	0.002	0.003	0.001	0.005	0.001	0.001	0.001	0	0.001	
	Lusitano	0.004	0.002	0.001	0.001	0.002	0.001	0.808	0.005	0.002	0.001	0.049	0.006	0.008	0.004	0.002	0.001	0.072	0.002	0.001	0.001	0.001	0.003	0.003	0.001	0.004	0.002	0.007	0.003	0.002	
	Mangalarga Paulista	0.002	0.003	0	0.001	0.001	0.001	0.003	0.006	0	0.001	0.011	0.001	0.026	0.001	0.920	0.001	0.001	0.005	0	0	0.001	0.001	0.002	0.001	0.003	0.001	0.001	0.005	0.002	
	Maremmano	0.002	0.003	0.002	0.004	0.003	0.003	0.003	0.008	0.004	0.002	0.003	0.002	0.262	0.003	0.002	0.001	0.002	0.007	0.002	0.002	0.004	0.004	0.015	0.002	0.642	0.001	0.005	0.004	0.004	
	Miniature	0.112	0.001	0.002	0.001	0.003	0.003	0.004	0.068	0.002	0.003	0.001	0.001	0.005	0.001	0.001	0.001	0.003	0.549	0.005	0.002	0.022	0.197	0.002	0.005	0.002	0.001	0.001	0.001	0.001	
	Mongolian	0.029	0.001	0.001	0.002	0.004	0.001	0.001	0.855	0.001	0.011	0.001	0.003	0.020	0	0.001	0.001	0	0.001	0.014	0.004	0.006	0.019	0.007	0.006	0.002	0.003	0.005	0.001	0.001	
	Morgan	0.002	0.004	0.001	0.003	0.001	0.007	0.004	0.013	0.002	0.001	0.005	0.003	0.009	0.021	0.001	0.005	0.006	0.008	0.001	0.002	0.003	0.002	0.011	0.001	0.006	0.002	0.003	0.013	0.860	
	New Forest Pony	0.003	0.004	0.015	0.005	0.004	0.003	0.002	0.015	0.008	0.003	0.004	0.002	0.006	0.002	0.001	0.001	0.011	0.002	0.008	0.045	0.007	0.002	0.836	0.001	0.004	0.002	0.002	0.002	0.002	
	North Swedish Horse	0.005	0.001	0.002	0.003	0.003	0.001	0.001	0.011	0.001	0.020	0.002	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.009	0.001	0.004	0.015	0.002	0.010	0.001	0	0	0.001	
	Norwegian Fjord	0.019	0	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.924	0.001	0	0	0.001	0.001	0.001	0.001	0.001	0.001	0.009	0.001	0.004	0.015	0.002	0.010	0.001	0	0	0.001	
	Paint	0.002	0.005	0.001	0.002	0.004	0.007	0.003	0.017	0.002	0.002	0.014	0.002	0.340	0.013	0.001	0.014	0.005	0.009	0.002	0.002	0.004	0.004	0.015	0.002	0.003	0.003	0.003	0.007	0.508	
	Percheron	0.003	0.001	0.001	0.722	0.005	0.001	0.001	0.004	0.005	0.003	0.002	0.001	0.001	0.001	0.001	0.001	0	0.001	0.001	0.001	0.228	0.002	0.003	0.003	0.002	0.003	0.001	0.001	0.004	
	Peruvian Paso	0.001	0.005	0.001	0.001	0.001	0.001	0.039	0.002	0.001	0.002	0.881	0.016	0.006	0.001	0.006	0.001	0.004	0.002	0.002	0.001	0.001	0.001	0.002	0.002	0.008	0.003	0.003	0.004	0.003	
	Puerto Rican Paso Fino	0.001	0.003	0.004	0.002	0.001	0.002	0.029	0.051	0.001	0.002	0.042	0.802	0.002	0.001	0.008	0.001	0.008	0.002	0.003	0.001	0.003	0.003	0.009	0.002	0.004	0.004	0.004	0.003	0.002	
	Quarter Horse	0.001	0.002	0.001	0.004	0.002	0.001	0.005	0.003	0.001	0.001	0.006	0.001	0.301	0.006	0.001	0.004	0.008	0.003	0.002	0.001	0.002	0.002	0.006	0.001	0.002	0.004	0.004	0.616	0.007	
	Saddlebred	0.001	0.007	0.001	0.001	0.002	0.012	0.002	0.002	0.001	0.001	0.003	0.001	0.015	0.888	0.001	0.002	0.006	0.009	0.001	0.001	0.001	0.002	0.002	0.001	0.003	0.003	0.001	0.016	0.016	
	Shetland	0.019	0.001	0.002	0.002	0.001	0.001	0	0.003	0.001	0.003	0.001	0.001	0	0	0	0.001	0	0.954	0.001	0.001	0.003	0.003	0.001	0	0.001	0.001	0.001	0.001		
	Shire	0.001	0.001	0.001	0.030	0.003	0.001	0.001	0.008	0.640	0.003	0.001	0.001	0.048	0.003	0.001	0.002	0.020	0.001	0.001	0.060	0.077	0.003	0.068	0.003	0.005	0.001	0.004	0.012	0.001	
	Standardbred - Norway	0.001	0.001	0.001	0.001	0.001	0.853	0.001	0.003	0.001	0	0.001	0.001	0.009	0.008	0.001	0.003	0.003	0.100	0	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.003	0.001	
	Standardbred - US	0.001	0.001	0	0.001	0.001	0.776	0.002	0.006	0	0	0.001	0	0.025	0.012	0.001	0.026	0.002	0.025	0	0.003	0.001	0.003	0.014	0	0.002	0.001	0.001	0.079	0.015	
	Swiss Warmblood	0.001	0.013	0.003	0.015	0.046	0.002	0.004	0.009	0.001	0.001	0.002	0.005	0.515	0.010	0.001	0.012	0.028	0.095	0.001	0.001	0.006	0.003	0.100	0.002	0.028	0.005	0.005	0.073	0.012	
	Tennessee Walking Horse	0.001	0.004	0.001	0.001	0.004	0.013	0.002	0																						