

Table S1: Inbreeding coefficients calculated from SNP data, whole genome sequencing (WGS), and pedigree analysis of entire reference pedigrees, 10-generation pedigrees, and 5-generation pedigrees. Percent identity to the Boxer reference is the mean of all SNP-genotyped dogs of each breed.

Breed	Abbr.	SNP	WGS	PED _{all}	PED _{10-gen}	PED _{5-gen}
Afghan Hound	AFGH	0.332				
Airedale Terrier	AIRT		0.467			
Akita	AKIT	0.347				
Alaskan Malamute	AMAL	0.313	0.199			
American Cocker Spaniel	ACKR	0.378	0.378			
American Rat Terrier	ARTR		0.383			
Australian Cattle Dog	ACD		0.185	0.067	0.064	0.038
Australian Shepherd	AUSS	0.207				
Australian Terrier	AUST	0.260				
Basenji	BSJI	0.536	0.571	0.221	0.118	0.059
Basset Hound	BASS	0.357				
Beagle	BEAG	0.244	0.084			
Bearded Collie	BRDC		0.261			
Belgian Malinois	BMAL		0.265			
Belgian Shepherd	BELS	0.301	0.286	0.193	0.126	0.064
Belgian Tervuren	TERV	0.264	0.357			
Bernese Mountain Dog	BMD	0.350	0.314	0.197	0.061	0.022
Black Russian Terrier	BRTR		0.263			
Bloodhound	BLDH	0.431	0.316			
Border Collie	BORD	0.210	0.254			
Border Terrier	BORT		0.379			
Borzoi	BORZ	0.311	0.265	0.128	0.086	0.054
Boston Terrier	BOST	0.225	0.316			
Bouvier des Flandres	BOUV		0.314			
Boxer	BOX	0.357				
Briard	BRIA	0.298				
Brittany	BRIT	0.263	0.331			
Bull Mastiff	BULM	0.345				
Bull Terrier	BULT	0.579				
Bulldog	BULD	0.373	0.454			
Cairn Terrier	CAIR	0.193				
Cardigan Welsh Corgi	CARD	0.250				
Cavalier King Charles Spaniel	CKCS	0.421				
Chihuahua	CHIH	0.113	0.099			
Chinese Crested	CRES		0.374			
Chinese Shar Pei	SHAR	0.236				
Chow Chow	CHOW	0.370	0.374			
Clumber Spaniel	CLSP		0.475			
Collie	COLL	0.481				
Dachshund	DACH	0.203	0.422			
Doberman Pinscher	DOBP	0.431	0.385			

English Cocker Spaniel*	ECKR	0.390	0.494			
English Springer Spaniel	ESSP	0.312	0.352			
Eurasier	EURA		0.254			
Flat Coated Retriever	FCR	0.354	0.324			
French Bulldog	FBUL	0.281	0.287			
German Shepherd Dog	GSD	0.373	0.479			
German Shorthaired Pointer	GSHP	0.176				
German Wirehaired Pointer	GWHP		0.223			
Giant Schnauzer	GSNZ	0.252				
Glen of Imaal Terrier*	GLEN	0.277				
Golden Retriever	GOLD	0.284	0.218	0.160	0.079	0.027
Great Dane	DANE	0.272	0.377			
Great Pyrenees	GPYR	0.350	0.381			
Greater Swiss Mountain Dog	GSMD		0.420			
Greyhound	GREY	0.300	0.314			
Havanese	HAVA	0.178				
Ibizan Hound	IBIZ	0.289				
Irish Setter	ISET		0.319			
Irish Terrier	IRTR		0.322			
Irish Water Spaniel	IWSP	0.267	0.323			
Irish Wolfhound	IWOF	0.426	0.399			
Italian Greyhound	ITGY	0.292	0.338			
Jack Russell Terrier	JRT		0.117			
Kerry Blue Terrier	KERY		0.425			
Komondor	KOMO		0.316			
Kromforlander	KROM		0.468			
Kuvasz	KUVZ	0.171				
Labrador Retriever	LAB	0.217	0.211	0.082	0.073	0.026
Lagotto Romagnolo	LAGO		0.378			
Leonberger	LEON	0.316				
Mastiff	MAST	0.335	0.270			
Miniature Bull Terrier	MBLT	0.507				
Miniature Pinscher	MPIN	0.307				
Miniature Poodle	MPOO	0.237	0.255			
Miniature Schnauzer	MSNZ	0.452	0.564			
Newfoundland	NEWF	0.288				
Norwegian Lundehund	NLUN		0.868			
Norwich Terrier	NOWT	0.408		0.267	0.167	0.057
Nova Scotia Duck Tolling Retriever	NSDT		0.205	0.266	0.251	0.034
Old English Sheepdog	OES	0.276				
Papillon	PAPI	0.179		0.059	0.051	0.031
Pekingese	PEKE	0.356	0.379			

Pembroke Welsh Corgi	PEMB	0.301	0.329			
Petit Basset Griffon Vendeen	PBGV	0.236				
Pointer	PNTR		0.255			
Pomeranian	POM	0.180				
Portuguese Podengo	POPO		0.166			
Portuguese Water Dog	PTWD	0.270	0.118	0.176	0.162	0.052
Pug	PUG	0.442	0.383			
Rhodesian Ridgeback	RHOD		0.331			
Rottweiler	ROTT	0.337	0.280			
Saint Bernard	STBD	0.296	0.214			
Saluki	SALU	0.234	0.159			
Samoyed	SAMO	0.301	0.281			
Scottish Deerhound	DEER	0.459	0.420			
Scottish Terrier	SCOT	0.346	0.322			
Shetland Sheepdog	SSHP	0.386	0.354			
Shih Tzu	SHIH	0.325				
Siberian Husky	HUSK	0.327	0.100			
Sloughi	SLOU		0.065			
Soft Coated Wheaten Terrier	SCWT		0.474			
Spanish Water Dog	SPWD		0.117			
Staffordshire Bull Terrier	STAF	0.299				
Standard Poodle	SPOO	0.181	0.249			
Standard Schnauzer	SSNZ	0.255	0.283			
Tibetan Mastiff	TIBM		0.118			
Tibetan Terrier	TIBT		0.140			
Toy Poodle	TPOO	0.182	0.117			
West Highland White Terrier	WHWT	0.357	0.419			
Whippet	WHIP	0.324				
Yorkshire Terrier	YORK	0.254	0.147			

* SNP F-values for ECKR and GLEN were calculated from 9 individuals instead of 1

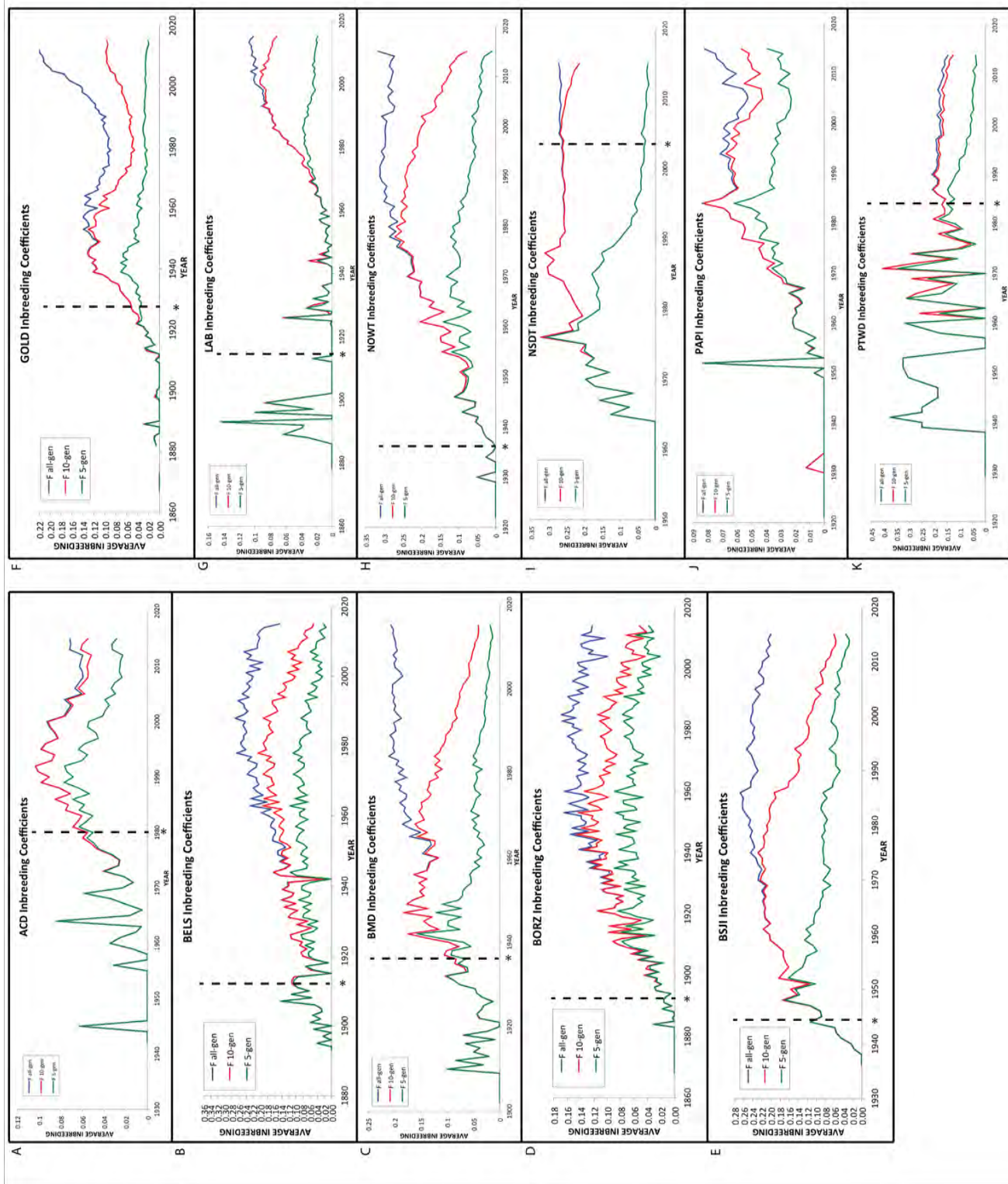


Figure S1: Inbreeding coefficients over time for 11 pedigree breeds. Calculations of F completed using the entire reference pedigree, or the most recent 10 or 5 generations.

* indicate the year at which the breed was recognized by the AKC. Australian Cattle Dog (ACD) = 1980, Belgian Sheepdog (BELS) = 1912, Bernese Mountain Dog (BMD) = 1937, Borzoi (BORZ) = 1891, Basenji (BSJI) = 1944, Golden Retriever (GOLD) = 1920, Labrador Retriever (LAB) = 1917, Norwich Terrier (NOWT) = 1936, Nova Scotia Duck Tolling Retriever (NSDT) = 2003, Papillon (PAPI) = 1915, Portuguese Water Dog (PTWD) = 1983.

Figure S2: Single breed graphs displaying the decrease in shared LnH with SNP chip data from an additional same-breed dog.