

Supplementary Table S1: Summary of Supplementary Tables

Key to table

Species data are in Tables S2-S6. Data on UK cattle relevant to calculation of Hill's equation are in Supplementary Table S7. In Supplementary Table S8 further data are given on the ratio N_e/N_c .

For Tables S² to S6, each table is in three parts: (a) relates to calculation of $N_e(DF)$, (b) to $N_e(LD)$ and (c) to literature references.

Column headings for parts (a) and (b) are as follows:

Breed: name of breed

Country: Location of animals studied

Source: authority for census data. DAD-IS signifies data are from the FAO database <http://dad.fao.org/> accessed during December 2015 and January 2016

Year: year to which census data relate

brdg M, brdg F: numbers of breeding males and females according to the cited source

hbk F: number of registered, currently breeding females, when given by the cited source

"total": statement of total numbers, when given by the cited source

Ne by DF (in part (a)): $N_e(DF)$

Ref DF (in part (a)): literature citation (listed in part (c))

Ne by LD (in part (b)): $N_e(LD)$

Ref LD (in part (b)): literature citation (listed in part (c))

Reference year: period to which the calculated $N_e(DF)$ or $N_e(LD)$ applies

Adopted total: N_c used in current study

Supplementary Table S2: Cattle

Key to table: see Supplementary Table S1

Part (a) Breeds with $N_e(DF)$

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Ne by DF	Ref DF	Reference year	Adopted total
Aberdeen Angus	Brazil	(18) (71)	2013		26985			239.5	(19)	2008-2010	26985
Abondance	France	DAD-IS	2001	800	55000	15500		43.5	(36)	2002-2007	55000
Afrikaner	S Africa	DAD-IS	2011			6764		167.5	(50)	2015	6764
Alentejana	Portugal	DAD-IS	2010	291	25890		46922	23.3	(38)	2000-2003	46922
Alistana-Sanabresa	Spain	(2)	1995		279			36	(2)	1996	279
Asturiana de las Montanas	Spain	(2)	1995		4629			35	(2)	1996	4629
Asturiana de los Valles	Spain	(2)	1995		7863			89	(2)	1996	7863
Aubrac	France	DAD-IS	2001	1560	92000	33000		285.3	(36)	2002-2007	92000
Avilena-Negra Iberica	Spain	(2)	1995		2535			40	(2)	1996	2535
Ayrshire	Canada	(11)	2006	255	11636			54	(17)	2003-2007	11636
Ayrshire	S Africa	DAD-IS	1998	270	8775			148	(12)	2002	8775
Ayrshire	USA	DAD-IS	2000				6046	161	(30) (32)	2001	6046
Ayrshire	UK	(72) (73)	2011	405	3053	11264		94	(72)	2007	11264
Bazadaise	France	DAD-IS	2001	54	2800	2500		100.3	(36)	2002-2007	2800
Blonde d'Aquitaine	France	DAD-IS	2001	11988	400000	32000		142	(36)	2002-2007	400000
Brangus	S Africa	(8)	2008				18000	166.7	(8)	2008	18000
Brangus	Argentina	(74)	2004	210	5415		5625	274	(74)	2004	5625
Braunvieh	Austria	DAD-IS	1994	1000	69092			109	(27)	1993	69092
Braunvieh	Switzerland	DAD-IS	2002	1175	300892		425000	113.8	(49)	2005	425000
British White	UK	(72) (73)	2011	100	398	1485		36	(72)	2007	1485
Brown Swiss	Canada	(11)	2006	193	3224			47	(17)	2003-2007	3224
Brown Swiss	USA	DAD-IS	2000				10648	61	(30) (32)	2001	10648
Brown-Swiss	France	DAD-IS	2001	29	31000	12000		79.5	(36)	2002-2007	31000
Bruna dels Pireneus	Spain	(2)	1995		2809			95	(2)	1996	2809
Canadienne	Canada	(11)	2006		408			40	(17)	2003-2007	408

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Ne by DF	Ref DF	Reference year	Adopted total
Carinthian Blond	Austria	DAD-IS	2001	30	566	566	2200	76	(3)	1997-2002	566
Charolais	Denmark	(22)	2015			6500		558	(16)	2009	6500
Charolais	Ireland	DAD-IS	2006	8055	22268	22268		244	(16)	2009	22268
Charolais	France	(10)	2014				1575986	493	(16)	2008	1575896
Charolais	France	DAD-IS	2001	52500	1600000	105000		500.5	(36)	2002-2007	1600000
Chianina	Italy	DAD-IS	2002	463	13971	13971		138	(31)	2000	13971
Criollo	Argentina	(4)						25	(4)	1993-1997	
Dairy Shorthorn	UK	(72) (73)	2011				9009	500	(72)	2007	9009
Dairy Swiss (Brown Swiss)	S Africa	(7)	2013			1135	1135	89	(7)	2008	1135
Danish Red	Denmark	DAD-IS	1997	100	96000	59000		47	(32)	2000-2005	96000
Devon	Brazil	(18) (71)	2009		5883			110	(19)	2008-2010	5883
Eringer	Switzerland	DAD-IS	2009	286	8000		8350	321	(37)	2009	8350
Ferrandaisex	France	DAD-IS	2001	34	600	506		54.5	(36)	2002-2007	600
Flamandex	France	DAD-IS	2001	40	140	140		63.5	(36)	2002-2007	140
French Red Pied	France	DAD-IS	2001	15	25000	4000		170	(36)	2002-2007	25000
French Simmental	France	DAD-IS	2001	60	35000	6000		140	(36)	2002-2007	35000
Gasconne	France	DAD-IS	2001	950	25000	11000		256.3	(36)	2002-2007	25000
German Holstein	Germany	DAD-IS	1998	7583	1514413		1521996	52	(39)	1996-1999	1521996
German Red	Germany	DAD-IS	2008	69	918		987	47	(48)	2008	987
Gir	Brazil	(1)	2009					130	(13)	2002-2010	3000000
Gir	Brazil	DAD-IS	1992	2250	90000		130000	45	(29)	1998	130000
Girolando	Brazil	(23)	2000				200000	188	(23)	2008	200000
Grauvieh	Austria	DAD-IS	1993	40	3389			73	(27)	1993	3389
Guernsey	Canada	(11)	2006	43	438			46	(17)	2003-2007	438
Guernsey	USA	DAD-IS	2000				6151	65	(30) (32)	2001	6151
Guernsey	S Africa	DAD-IS	1998	52	1863			165	(12)	2002	1863
Guernsey	UK	(72) (73)	2011	99	971	4116		105	(72)	2007	4116
Guzerat	Brazil	(6)	2008				92000	98	(14)	2008	92000
Guzerat	Brazil	DAD-IS	1992	1500	54600		84000	101	(29)	1998	84000
Hanwoo	Korea	DAD-IS	2003					84	(40)	2006-2008	1239380
Hereford	Brazil	(18) (71)	2009		8064			157	(19)	2008-2010	8064
Hereford	Ireland	DAD-IS	2006	350	3500			64	(33)	2000-2005	3500
Hereford	USA	DAD-IS	2001				98444	85	(32)	2000-2005	98444

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Ne by DF	Ref DF	Reference year	Adopted total
Highland	UK	(72) (73)	2009	358	1793	6081		118	(72)	2007	6081
Hinterwald	Germany	DAD-IS	2013	98	521	521		127.2	(41)	2011	521
Holstein	USA	DAD-IS	2000				317567	39	(30) (32)	2001	317567
Holstein	Denmark	DAD-IS	1997	3000	542000	396000	600000	49	(32)	2000-2005	600000
Holstein	Ireland	DAD-IS	2006	2246	257342	257342		75	(33)	2000-2005	257342
Holstein	S Africa	DAD-IS	1998	2092	132113	132113		137	(12)	2002	132113
Holstein	France	DAD-IS	2001		3100000	1889000		74.3	(36)	2002-2007	3100000
Icelandic	Iceland	DAD-IS	2004	78	30353		64639	125	(34)	2003-2005	64639
Indubrasil	Brazil	DAD-IS	1991		80000		200000	41	(15)	1998	200000
Japanese Black	Japan	(26)	1999		530000			17	(26)	2001	530000
Jersey	USA	DAD-IS	2000				67776	30	(30) (32)	2001	67776
Jersey	Denmark	DAD-IS	1997		100000	74500		53	(32)	2000-2005	100000
Jersey	S Africa							108	(12)	2002	
Lidia	Spain	DAD-IS	2008	5448	115068		269582	35.7	(42)	2004-2012	269582
Lidia (Domecq)	Spain							26.9	(28)	2006	
Limousin	Denmark	(25)	2015					1667	(16)	2009	20000
Limousin	Ireland	DAD-IS	2006	6021	18011			345	(16)	2009	18011
Limousin	France	DAD-IS	2001	16000	825000	50000		376.3	(36)	2002-2007	825000
Limousin	France	(16)	2008					2459	(16)	2008	
Limpurg	Germany	DAD-IS	2013	26	135	135		39.3	(41)	2011	135
Lincoln Red	UK	(72) (73)	2011	155	810	2499		82	(72)		2499
Longhorn	UK	(72) (73)	2009	309	1613	5766		82	(72)		5766
Luing	UK	(72) (73)	2011	227	1894	7194		112	(72)		7194
Maine-Anjou	France	DAD-IS	2001	1600	85000	8000		211.5	(36)	2002-2007	85000
Marchigiana	Italy	DAD-IS	2002	320	19350		41930	122	(31)	2000	41930
Maremmiana	Italy	DAD-IS	2002	103	3116	3116		111	(32)	2000-2005	3116
Mertolenga	Portugal	DAD-IS	2013	217	31209		56415	25	(32)	2000-2005	56415
Milking Shorthorn	Canada	(11)	2006		390			66	(17)	2003-2007	390
Montbéliarde	France	DAD-IS	2001	435	692000	168341		56.8	(36)	2002-2007	168341
Morucha	Spain	(2)	1995		1547			27	(2)	1996	1547
Mucca Pisana	Italy	DAD-IS	2002	8	154			20	(32)	2000-2005	154
Nelore	Brazil	DAD-IS	1991		2500000			68	(29)	1998	2500000
Nguni	S Africa	(24)	2006	697	11611		12308	168	(24)	2012	12308
Normande	France	DAD-IS	2001	14	810000	190000		64.3	(36)	2002-2007	810000
Norwegian Red	Norway	DAD-IS	2011	130	195000		200000	173	(43)	2007-2009	200000

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Ne by DF	Ref DF	Reference year	Adopted total
Original Braunvieh	Switzerland	DAD-IS	2000	500	9000		10250	73	(49)	2005	10250
Original Pinzgau	Austria	(3) (70)	9706					76	(3)	1997-2002	9706
Original Swiss Brown	Switzerland	DAD-IS	2007	320	6200		6560	70	(44)	2007	6560
Pajuna	Spain	(5)					797	17	(5)	2011	797
Parthenaise	France	DAD-IS	2001	533	15000	7000		212	(36)	2002-2007	15000
Pinzgauer	Austria	(27)	1998			12232	53875	232	(27)	1993	53875
Pinzgauer Austrian beef	Austria	(20)	2012		3143			107	(20)	2012	3143
Pinzgauer Austrian dairy	Austria	(20)	2012		7479			122	(20)	2012	7479
Pinzgauer Slovak beef	Slovakia	(20)	2012				637	809	(20)	2012	637
Pinzgauer Slovak dairy	Slovakia	(20)	2012				1183	189	(20)	2012	1183
Pirenaica	Spain	(2)	1995		13117			123	(2)	1996	13117
Polled Nelore	Brazil		1991		10000		17500	124	(15)	1998	17500
Red Angus	USA	DAD-IS	2000				51413	445	(35)	2005	51413
Red Poll	UK	(72) (73)	2011	159	868	3242		65	(72)	2007	3242
Romagnola	Italy	DAD-IS	2006	3480	13294	13294		124	(31)	2000	13294
Salers	France	DAD-IS	2000	5000	185000	28000		148	(36)	2002-2007	185000
Sayaguesa	Spain	(2)	1995		114			21	(2)	1996	114
Shorthorn	Brazil	(18) (71)	2009		336			210.5	(19)	2008-2010	336
Simmental	Ireland	DAD-IS	2006	1689	5970			127	(33)	2000-2005	5970
Simmental	Austria	DAD-IS	1998	1519	230181			258	(27)	1993	230181
Sindi	Brazil	(9)	2006		669			9	(15)	1998	669
Slovak Holstein	Slovakia	DAD-IS	2013			54623	162085	145.5	(45)	2011	54623
Slovak Pinzgauer	Slovakia	DAD-IS	2013			1430	12716	195	(45)	2011	12716
Slovak Spotted	Slovakia	DAD-IS	2013			29715	172361	434.5	(45)	2011	172361
South Devon	UK	(72) (73)	2011	527	3322	11750		97	(72)	2007	11750
Spanish Holstein	Spain	DAD-IS	2013	749	490486		744245	79.4	(46)	2012	744245
Tabapuã	Brazil	DAD-IS	1991		2200		4000	54	(15)	1998	4000
Tarentaise	France	DAD-IS	2001	140	14000	11300		53	(36)	2002-2007	14000
Tudanca	Spain	DAD-IS	2008	231	6967		10059	24	(47)	2011	10059

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Ne by DF	Ref DF	Reference year	Adopted total
Tux-Zillertal	Austria	DAD-IS	2001	46	521	521	1000	43	(3)	1997-2002	1000
Tyrol Grey	Austria	DAD-IS	2013	34	3773		17728	102	(70)	2013	17728
Vorderwald	Germany	DAD-IS	2013	238	6439	6439		124.2	(41)	2011	6439
Vosgienne	France	DAD-IS	2001	56	4000	864		59.8	(36)	2002-2007	4000
Wagyu	USA	(21) (71)	2011				1386	17	(21)	2011	1386
Welsh Black	UK	(72) (73)	2010	345	2131	7884		500	(72)	2007	7884
Whitebred Shorthorn	UK	(72) (73)	2011	28	90	154		97	(72)	2007	154

Part (b) Breeds with $N_e(LD)$

Breed	country	source	year	brdg M	brdg F	"total"	"global"	Ne by LD/SNP	Ref LD	Reference year	Adopted total
Afrikaner	S Africa	DAD-IS	2011			6764		41	(52)	2013	6764
Anatolian Black	Turkey							183.7	(53)	1990-1999	
Angus	USA&NZ	(1)	2009				10000000	136	(1)	2007-2009	10000000
Beefmaster	USA	(1)	2009				1000000	106	(1)	2007-2009	1000000
Belgian Blue	Belgium	DAD-IS	1994	3500	529129	1500000		68.36	(53)	1990-1999	1500000
Bonsmara	S Africa	DAD-IS	2011			50399		77	(52)	2013	50399
Brahman	USA&Aus	(1)	2009				4000000	115	(1)	2007-2009	4000000
Braunvieh	Germany	DAD-IS	1997	1172	176121	177293		84.45	(53)	1990-1999	177293
Brown Swiss	USA	(1)	2009				7000000	61	(1)	2007-2009	7000000
Canadian Angus	Canada	(63)	2014			1500000		207	(65)	2010	1500000
Canadian Charolais	Canada	(64)	2015			21498		285	(65)	2010	21498
Charolais	USA	(1)	2009				1200000	110	(1)	2007-2009	1200000
Chinese Holstein	China	(57)	2011			11520000		45	(67)	2010	11520000
Chinese Simmental	China	(60)	2010			30000		73	(68)	2011	30000
Cinisara	Italy	DAD-IS	2014	363	2825	4553		19		1999-2010	4553
Dairy Gir	Brazil	(61)	2002			58260		39	(69)	2008	58260
Danish Red	Denmark	(58)	2003			50000		74	(54)	2009	50000
Drakensberger	S Africa	DAD-IS	2011			6255		87	(52)	2013	6255
East African Shorthorned Zebu								100	(66)	2012	
Eringer	Switzerland	DAD-IS	2009	286	8000	8350		118	(37)	2009	8350
Finnish Ayrshire	Finland	DAD-IS	2009		182169	200000		73	(54)	2009	200000
Franken Gelbvieh	Germany	DAD-IS	1997	38	8552	8590		109.95	(53)	1990-1999	8590
Galloway	Germany	DAD-IS	1997	1327	9513	10840		110.74	(53)	1990-1999	10840
German Fleckvieh	Germany	DAD-IS	1997	2714	693422	696136		126.53	(53)	1990-1999	696136

Breed	country	source	year	brdg M	brdg F	"total"	"global"	Ne by LD/SNP	Ref LD	Reference year	Adopted total
Gir	Brazil	(1)	2009				3000000	133	(1)	2002-2010	3000000
Guernsey	USA&UK	(1)	2009				75000	76	(1)	2007-2009	75000
Hanwoo	Korea	DAD-IS	2003			1239380		84	(40)	2006-2008	1239380
Hereford	USA&NZ	(1)	2009				5000000	97	(1)	2007-2009	5000000
Holstein	USA&NZ	(1)	2009				65000000	99	(1)	2007-2009	65000000
Holstein	Korea	DAD-IS	2012	19	258754	420113		122	(55)	2011	420113
Illyrian Mountain Busa	Albania							149.76	(53)	1990-1999	
Istrian	Croatia	(62)	2013	40	721			12.3	(62)	2012	721
Jersey	USA&NZ	(1)	2009				2500000	73	(1)	2007-2009	2500000
Kermani	Iran	n/a						23	(51)	2013	
Kurdi	Iran		1998			200000		29	(51)	2013	200000
Limousin	USA&FR	(1)	2009				4000000	174	(1)	2007-2009	4000000
Mazandarani	Iran							107	(51)	2013	
Modicana	Italy	DAD-IS	2006	298	3203	3501		12		1999-2010	3501
Murnau-Werdenfelser	Germany	DAD-IS	1997	6	152	158		52.64	(53)	1990-1999	158
Najdi	Iran	(59)	2013			380000		22	(51)	2013	380000
N'Dama	Guinea	(1)	2009				7000000	228	(1)	2007-2009	7000000
Nelore	Brazil	(1) (71)	2009		755977		10000000	86	(1)	2007-2009	10000000
Nguni	S Africa	DAD-IS	2011			9462		95	(52)	2013	9462
Norwegian Red	Norway	DAD-IS	2011	130	195000	200000		194	(56)	2007-2009	200000
Original Braunvieh	Switzerland	DAD-IS	1997	10	157	167		92.31	(53)	1990-1999	167
Original Swiss Brown	Switzerland	DAD-IS	2007	320	6200	6560		44	(44)	2007	6560
Pars	Iran							45	(51)	2013	
Piedmontese	Italy	DAD-IS	2013	2327	124406	262935	400000	167	(1)	2007-2009	262935
Red Angus	USA&Can	(1)	2009				300000	85	(1)	2007-2009	300000
Red Holstein	Germany	DAD-IS	1997	2006	210523	212529		111.48	(53)	1990-1999	212259
Romagnola	Italy	DAD-IS	2007	3257	13237	16494	30000	92	(1)	2007-2009	16494

Breed	country	source	year	brdg M	brdg F	"total"	"global"	Ne by LD/SNP	Ref LD	Reference year	Adopted total
Santa Gertrudis	USA	(1)	2009				5000000	107	(1)	2007-2009	5000000
Sarabi	Iran	(59)				750000		13	(51)	2013	750000
Sheko	Ethiopia	(1)	2009		5000		5000	145	(1)	2007-2009	5000
Sistani	Iran	n/a						17	(51)	2013	
Spanish Holstein	Spain	DAD-IS	2013	749	490486	744245		74.4	(46)	2012	744245
Swedish Red & White	Sweden	DAD-IS	2011		113237	385298		84	(54)	2009	385298
Taleshi	Iran	DAD-IS	1997			1000-10000		22	(51)	2013	5000
Tyrol Grey	Austria	DAD-IS	2013	34	3773	17728	17728	80	(70)	2013	17728

Part (c) Reference list (cattle)

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Supplementary Table S3: Sheep references

Key to table: see Supplementary Table S1

Part (a) Breeds with $N_e(\Delta F)$

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	N_e by DF	Ref DF	Reference year	Adopted total
Avranchin	France	DAD-IS	2001	39	537	180	537	48	(6)	2007	537
Basco-bearnaise	France	DAD-IS	2001	1805	76000	21076	76000	48	(6)	2007	76000
Basco-bearnaise	France	(2)	2009		24000		24000	112	(2)	2009	24000
Berrichon	France	(1)	2000	2970	141000	3300	141000	120	(1) (23)	2007	141000
Berrichon de l'Indre	France	DAD-IS	1994	30	1500	180	1500	35	(6)	2007	1500
Berrichon du Cher	France	DAD-IS	2001	2970	141000	3300	141000	50	(6)	2007	141000
Bizet	France	DAD-IS	2001	76	7000	5336	7000	257	(6)	2007	7000
Black Welsh Mountain	UK	(28) (29)	2007				1159	135	(28)	2007	1159
Blanc du Massif Central	France	DAD-IS	2001	7840	400000	35684	400000	108	(6)	2007	400000
Bleu du Maine	France	DAD-IS	2001	970	3000	1703	3000	293	(6)	2007	3000
Bleu du Maine	France	(1)	2000	970	3000	1703	14300	231	(1) (23)	2007	14300
Border Leicester	UK	(28) (29)	2007				1082	100	(28)	2007	1082
Boreray	UK	(28) (29)	2011	31	109		204	25	(28)	2007	204
Boulonnais	France	DAD-IS	2001	80	3000	2313	3000	80	(6)	2007	3000
Cambridge	UK	(28) (29)	2007				302	44	(28)	2007	302
Castlemilk Moorit	UK	(28) (29)	2011	54	216		538	61	(28)	2007	538
Causse du lot	France	DAD-IS	2001	1170	150000	32281	150000	101	(6)	2007	150000
Charmoise	France	DAD-IS	2001	1176	20000	3800	20000	77	(6)	2007	20000
Charmoise	France	(1)	2000	1176	20000	3800	23900	182	(1) (23)	2007	23900

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	N_e by DF	Ref DF	Reference year	Adopted total
Charollais	France	DAD-IS	2001	1576	374000	10000	374000	85	(6)	2007	374000
Clun Forest	UK	(28) (29)	2007				2971	156	(28)	2007	2971
Clun forest	France	DAD-IS	2001		300	75	300	85	(6)	2007	300
Corse	France	DAD-IS	2001	3360	90000	18303	90000	375	(6)	2007	90000
Cotentin	France	DAD-IS	2001	200	2000	224	2000	38	(6)	2007	2000
Cotentin	France	(1)	2000	200	2000	224	6000	108	(1) (23)	2007	6000
Cotswold	UK	(28) (29)	2007				914	61	(28)	2007	914
Devon Closewool	UK	(28) (29)	2007	85	3279		3364	152	(28)	2007	3364
Dorset	France	DAD-IS	2001	40	2000	142	2000	21	(6)	2007	2000
Dorset Down	UK	(28) (29)	2007	56	1327		811	227	(28)	2007	811
Est à laine merinos	France	DAD-IS	2001	960	50000	4386	50000	86	(6)	2007	50000
Finnish	France	DAD-IS	2001	100	255	255	255	96	(6)	2007	255
Finnsheep	Finland	DAD-IS	2011		43841		43841	120	(8)	2012	43841
Grivette	France	DAD-IS	2001	72	15000	7141	15000	112	(6)	2007	15000
Hampshire	France	DAD-IS	2001	80	4000	685	4000	68	(6)	2007	4000
Hampshire Down	UK	(28) (29)	2007				3139	86	(28)	2007	3139
Hebridean	UK	(28) (29)	2007	217	1586		4483	443	(28)	2007	4483
Herdwick	UK	(28) (29)	2007				8000	500	(28)	2007	8000
Ile de France	France	DAD-IS	2001	7920	260000	17355	260000	55	(6)	2007	260000
Kerry Hill	UK	(28) (29)	2007				3079	500	(28)	2007	3079
Kres (Creska ovca)	Croatia	(3)	2009				15000	123	(10)	2007	15000
Krk Island	Croatia	(3)	2009				15000	26	(10)	2007	15000
Lacaune dairy	France	DAD-IS	2001	6000	840000	165986	840000	66	(6)	2007	840000

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	N_e by DF	Ref DF	Reference year	Adopted total
Lacaune Viande	France	DAD-IS	2001	3900	443500	36122	443500	73	(6)	2007	443500
Leicester Longwool	UK	(28) (29)	2011	41	200		470	47	(28)	2007	470
Limousin	France	(1)	2000	117	150000	17450	150000	360	(1) (23)	2007	150000
Lincoln Longwool	UK	(28) (29)	2011	72	278		991	122	(28)	2007	991
Manech tête noire	France	DAD-IS	2001	2925	122000	18216	122000	38	(6)	2007	122000
Manech tête noire	France	(2)	2009		13000		13000	89	(2)	2009	13000
Manech tête rousse	France	DAD-IS	2001	4512	214000	73597	214000	77	(6)	2007	214000
Manech tête rousse	France	(2)	2009		76000		76000	174	(2)	2009	76000
Manx Loaghtan	UK	(28) (29)	2011	79	335		869	38	(28)	2007	869
Merino de Grazalema	Spain	(9)	2011				4912	24	(9)	2011	4912
Merinos d'Arles	France	DAD-IS	2001	4450	250000	23000	250000	182	(6)	2007	250000
Milk Lacaune	France	(2)	2009		170000		170000	143	(2)	2009	170000
Navajo Churro	USA	DADIS	2010	46	314		314	92	(7)	2004	314
Noir du Velay	France	DAD-IS	2001	490	25000	13480	25000	192	(6)	2007	25000
Norfolk Horn	UK	(28) (29)	2011	94	390		1025	90	(28)	2007	1025
North Ronaldsay	UK	(28) (29)	2011	42	150		394	124	(28)	2007	394
Oxford Down	UK	(28) (29)	2011	100	410		1006	83	(28)	2007	1006
Portland	UK	(28) (29)	2011	45	373		802	96	(28)	2007	802
Prealpes	France	DAD-IS	2001	4750	263000	12258	263000	55	(6)	2007	263000
Rava	France	DAD-IS	2001	95	40000	10500	40000	76	(6)	2007	40000
Romane	France	DAD-IS	2001	475	44500	13000	44500	101	(6)	2007	44500
Romanov	France	DAD-IS	2001	136	5000	3866	5000	43	(6)	2007	5000

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	N_e by DF	Ref DF	Reference year	Adopted total
Romanov	France	(1)	2000	136	5000	3866	9100	78	(1) (23)	2007	9100
Romanov-INRA	France	(1)	2000				132	65	(1) (23)	2007	132
Rouge de l'Ouest	France	DAD-IS	1994	5000	240000	10481	240000	85	(6)	2007	240000
Roussin de la Hague	France	DAD-IS	2001	300	3000	1212	3000	163	(6)	2007	3000
Roussin de la Hague	France	(1)	2000	300	3000	1212	21500	172	(1) (23)	2007	21500
Ryeland	UK	(28) (29)	2007				2866	93	(28)	2007	2866
Santa Ines	Brazil	DAD-IS	1992	525	35000		35000	76	(5)	2008	35000
Soay	UK	(28) (29)	2011	156	535		1142	30	(28)	2007	1142
Solognote	France	DAD-IS	2001	80	2500	474	2500	72	(6)	2007	2500
Solognote	France	(1)	2000	80	2500	474	3100	154	(1) (23)	2007	3100
Southdown	France	DAD-IS	2001	26	2000	678	2000	42	(6)	2007	2000
Suffolk	UK	(28) (29)	2007				22255	420	(28)	2007	22255
Suffolk	France	DAD-IS	2001	28500	38000	6618	38000	69	(6)	2007	38000
Swaledale	UK	(28) (29)	2007				162900	420	(28)	2007	162900
Tarasconnaise	France	DAD-IS	2001	2200	120000	15000	120000	55	(6)	2007	120000
Teeswater	UK	(28) (29)	2007				655	-	(28)	2007	655
Texel	France	DAD-IS	2001	4800	17459	11454	17459	82	(6)	2007	17459
Vendéen	France	DAD-IS	2001	2475	225000	12150	225000	76	(6)	2007	225000
Wensleydale	UK	(28) (29)	2007				991	238	(28)	2007	991
Whitefaced Woodland	UK	(28) (29)	2007	43	216		494	98			494
Zandi	Iran	(4)	2005		450		450	66	(4)	2005	450

Part (b) Breeds with $N_e(LD)$

Breed	country	source	year	brdg M	brdg F	"total"	N_e by LD/SNP	Ref LD	Reference year	Adopted total
African Dorper	South Africa	DAD-IS	1992	60000	3900000		264	(11)	2012	3900000
Afshari	Iran	(21)					465	(11)	2012	2400000
Altamura	Italy	DAD-IS	2013	101	712		469	(11)	2012	712
Australian Industry Merino	Australia						853	(11)	2012	
Australian Merino	Australia						833	(11)	2012	
Australian Poll Dorset	Australia						318	(11)	2012	
Australian Poll Merino	Australia						918	(11)	2012	
Australian Suffolk	Australia	DAD-IS					569	(11)	2012	6295
Bangladeshi	Bangladesh						582	(11)	2012	
Bangladeshi Garole	Bangladesh						437	(11)	2012	
Barbados Black Belly	USA						374	(11)	2012	
Black Headed Mutton	Germany	DAD-IS	2013	357	8856	8856	247	(11)	2012	8856
Border Leicester	Australia	DAD-IS					140	(12)	2015	33142
Border Leicester	UK	DAD-IS	2012		1082	451	242	(11)	2012	1082
Brazilian Creole	Brazil						371	(11)	2012	
Bundner Oberlander	Switzerland	DAD-IS	2013	115	800	679	253	(11)	2012	800
Castellana	Spain	DAD-IS	2013	639	18661		546	(11)	2012	18661
Changthangi	India	DAD-IS	2003	21611	30754		684	(11)	2012	30754
Chinese Merino	China	DAD-IS	1983	200	30000		397	(11)	2012	30000
Chios	Greece	DAD-IS	2013	4140	78690	16789	334	(11)	2012	78690
Churra	Portugal						600	(11)	2012	
Comisana	Italy	DAD-IS	2013	2539	48104		589	(11)	2012	48104

Breed	country	source	year	brdg M	brdg F	"total"	N_e by LD/SNP	Ref LD	Reference year	Adopted total
Comisano	Italy	DAD-IS	2013	2539	48104		400	(13)	2014	48104
Cyprus Fat Tail	Cyprus	DAD-IS	2006	28	700		203	(11)	2012	700
Dairy Lacaune	France	(27)					192	(15)	2014	900000
Deccani	India						837	(11)	2012	
Dorper	Australia						67	(16)	2014	
Dorset Horn	Australia	DAD-IS	2012		938	391	134	(11)	2012	938
East Friesian Brown	Germany	DAD-IS	2011	16	143	143	186	(11)	2012	143
Engadine Red	Switzerland	DAD-IS	2013	280	3000	2897	482	(11)	2012	3000
Ethiopian Menz	Ethiopia	DAD-IS	1992				1260	(11)	2012	1692070
Finnsheep	Finland	DAD-IS	2011		43841		795	(11)	2012	43841
Galway	Ireland	DAD-IS	2012	50	1050	1050	322	(11)	2012	1050
Garut	India	(19)					337	(11)	2012	509436
German Mutton Merino	Germany						74	(16)	2014	
German Texel	Germany	DAD-IS	2013	255	3214	3214	448	(11)	2012	3214
Gulf Coast Native	USA	(24)			2000		611	(11)	2012	2000
Indian Garole	India	(18)					364	(11)	2012	206720
Irish Suffolk	Ireland	DAD-IS	2012	550	10000	10000	300	(11)	2012	10000
Leccese	Italy	DAD-IS	2013	13	610		556	(11)	2012	610
Meat Lacaune	France	DAD-IS	2001	3900	443500	36122	835	(11)	2012	443500
Merino	Australia	(17)	2003				348	(12)	2014	85000000
Merinolandschaf	Germany	DAD-IS	2013	486	14617	14617	407	(11)	2012	14617
Milk Lacaune	France	DAD-IS	2001	6000	840000	165986	714	(11)	2012	840000

Breed	country	source	year	brdg M	brdg F	"total"	N_e by LD/SNP	Ref LD	Reference year	Adopted total
Moghani	Iran	(20)	1999		5500000		825	(11)	2012	5500000
Morada Nova	Brazil	DAD-IS	1992	22500	405000		327	(11)	2012	405000
New Zealand Romney	New Zealand	na					405	(11)	2012	
New Zealand Texel	New Zealand	na					282	(11)	2012	
Norduz	Turkey	(22)					285	(11)	2012	200
Ojalada	Spain	DAD-IS	2013	192	9340	9340	588	(11)	2012	9340
Pinzirita	Italy	DAD-IS	2013	695	21839		685	(13)	2014	21839
Poll Dorset	Australia						152	(12)	2015	
Qezel (Red Karaman, Morkaraman)	Turkey	DAD-IS					1317	(11)	2012	8000000
Rambouillet	France						709	(11)	2012	
Rasa Aragonesa	Spain	DAD-IS	2013	13601	462613	462613	780	(11)	2012	462613
Red Maasai	Tanzania	DAD-IS	2008	4500	270000		1070	(11)	2012	270000
Sakiz	Turkey	DAD-IS	2013	100	1400	406	165	(11)	2012	1400
Santa Ines	Brazil	DAD-IS	1992	525	35000		520	(11)	2012	35000
Sardinian Ancestral Black (Sarda)	Italy	DAD-IS	2013	23236	466837		306	(11)	2012	466837
Scottish Blackface	UK	(26)					528	(11)	2012	2500000
Scottish Texel	UK						305	(11)	2012	
Soay	UK	DAD-IS	2012		1142	476	194	(11)	2012	1142
Spael White	Norway	DAD-IS	2013	1255	31200		339	(11)	2012	84561
Spanish Churra	Spain	DAD-IS	2013	2514	160016		128	(14)	2012	175359
Sumatran	Indonesia						336	(11)	2012	

Breed	country	source	year	brdg M	brdg F	"total"	N_e by LD/SNP	Ref LD	Reference year	Adopted total
Sunite	China	(25)	2015		1000000		207	(16)	2014	1000000
Swiss Black-Brown Mountain	Switzerland	DAD-IS	2013	630	14500	9101	333	(11)	2012	14500
Swiss Mirror	Switzerland	DAD-IS	2013	314	1700	1607	262	(11)	2012	1700
Swiss White Alpine	Switzerland	DAD-IS	2013	1703	33000	26826	374	(11)	2012	33000
Tibetan	China	DAD-IS					903	(11)	2012	2300000
Valais Black Nose	Switzerland	DAD-IS	2013	593	16000	15116	288	(11)	2012	16000
Valais Red	Switzerland	DAD-IS	2013	143	1050	930	173	(11)	2012	1050
Valle del Belice	Italy	DAD-IS	2013	7964	202876		369	(13)	2012	202876
Wiltshire	Australia	DAD-IS	2012		6528	2720	100	(11)	2012	6528

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Supplementary Table S4: Horse references

Key to table: see Supplementary Table S1

(a) Breeds with $N_e(DF)$

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Adopted total	Ne by DF	Ref DF	Ref year
Anglo-Arab	France	(17)	2013	116	1068			1184	83	(16)	2007
Arab	France	(17)	2013	711	2236			2947		(16)	2007
Ardennais	France	(17)	2013	185	1281			1466	151	(16)	2007
Auxois	France	(17)	2013	24	233			257	173	(16)	2007
Black-coated Asturcon pony	Spain	DAD-IS	2011	758	1320		2319	2319	18.5	(13)	2008
Boulonnais	France	(17)	2013	41	358			399	59	(16)	2007
Brasileiro de Hipismo	Brazil	(1)						20000	206	(2) (3)	2011
Breton	France	(17)	2013	633	5171			5804	131	(16)	2007
Camarguais	France	(17)	2013	159	885			1044	46	(16)	2007
Cob normand	France	(17)	2013	41	375			416	97	(16)	2007
Comtois	France	(17)	2013	867	6928			7795	257	(16)	2007
Crioula	Brazil	(25)	2015				300000	300000	98.94	(28)	2010
Dole	Norway	DAD-IS	1994	27	284		311	311	152	(15)	1999
Franches-Montagnes	Switzerland	(18)	2008				21000	21000	91	(18)	2008
Friesian	Netherlands	DADIS	2004	49	20000		20000	20000	27	(5)	2000
Haflinger	Italy	(40)	2004	1122	8665		9787	9787	1250	(40)	2004
Hanoverian	Germany	DADIS	2006	522	19492	19492		20014	372	(11)	2000
Highland	France	(17)	2013	10	27			37	118	(16)	2007
Hispano-Arab	Spain	DADIS	2009	392	2852			2464	16	(4)	2004

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Adopted total	N_e by _{DF}	ref	Ref year
Holstein	Germany	(21)	2010	225	7693			7918	55	(21)	2010
Hucul	Slovakia	DADIS	2009			119	250to500	375	48	(7) (8)	2007
Hucul	Poland	DAD-IS	2011	186	1415		2280	2280	32	(14)	2011
Icelandic horse	Iceland	DADIS	2009	1370	28948	28948		28948	113	(9)	2009
Konik (Polish Primitive)	Poland	DAD-IS	2011	156	973		1731	1731	37	(14)	2011
Landais	France	(17)	2013	25	65			90	33	(16)	2007
Lipizzan	Slovakia	DADIS	2009	13		105	140to180	160	117	(7)	2007
Lipizzan	Europe	(24)	2012				10766	10766	102	(26)	2001
Lusitano	Portugal	(22)	2009				5000	5000	28	(22)	2009
Merens	France	(17)	2013	75	484			559		(16)	2007
Nordland/Lyngen	Norway	DAD-IS	1994	27	154		181	181	42	(15)	1999
Norwegian Fjord Horse	USA								207.8	(23)	2009
Pantaneiro	Brazil	(19)	2003	500	2600			3100	125	(20)	2009
Percheron	France	(17)	2013	179	1879			2058	191	(16)	2007
Poitevin	France	(17)	2013	33	163			196	156	(16)	2007
Pottock	France	(17)	2013	122	1170			1292	67	(16)	2007
Selle français	France	(17)	2013	467	9140			9607	134	(16)	2007
Shagya Arab	Slovakia	DADIS	2006	17		102	150to200	175	110	(7)	2007
Shetland	France	(17)	2013	384	1217			1601	132	(16)	2007
Slovak Sport Pony	Slovakia	DADIS	2006	7		60	60to120	90	81	(7)	2007
Sorraia	Portugal	DAD-IS	2014	143	146		420	420	11.6	(12)	2010
Spanish Anglo-Arab	Spain	DADIS	2009	3059	3388	3388		6447	62	(6)	2008

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Adopted total	N_e by _{DF}	ref	Ref year
Spanish Anglo-Arab	Spain	DADIS	2009	3059	3388	3388		6447	65	(4)	2004
Spanish Arab	Spain	DADIS	2009	392	2852	2852		3244	38	(6)	2008
Spanish Purebred (Andalusian)	Spain	DADIS	2009	34923	52558		168244	168244	51	(6)	2008
Spanish Purebred (Carthusian strain)	Spain							5600	22	(6)	2008
Spanish-Sport Horse (Caballo de Deporte)	Spain	DADIS	2009	4101	5752	5752		9853	47	(4)	2004
Thoroughbred	Hungary	(24)	2015	37	185			224	159	(27)	2008
Trait du Nord	France	(17)	2013	13	197			210	189	(16)	2007
Trakehner	Germany	DADIS	2009	190	3363	3363		3553	157	(10)	2005
Trotteur français	France	(17)	2013	512	15580			16092	181	(16)	2007
Welsh Pony	France	(17)	2013	218	405			623	51	(16)	2007

(b) Breeds with $N_e(LD)$

Breed	country	source	year	brdg M	brdg F	"total"	Adopted total	N_e by LD/SNP	Ref LD	Reference year
Akhal Teke	US & Russia	(29)	2013			3500	3500	302	(29)	2013
Andalusian	US	(29)	2013			185000	185000	329	(29)	2013
Arabian	US	(29)	2013			1000000	1000000	346	(29)	2013
Belgian	US	(29)	2015			50000	50000	431	(29)	2013
Caspian	US	(29)	2013					351	(29)	2013
Clydesdale	US & UK	(29)	2013			5000	5000	194	(29)	2013
Exmoor	UK	(29)	2013			2000	2000	216	(29)	2013
Fell_Pony	UK	(29)	2013			6000	6000	289	(29)	2013
Finnhorse	Finland	(29)	2013			19800	19800	575	(29)	2013
Florida Cracker	US	(35)	2015			1260	1260	171	(29)	2013
Franches-Montagnes	Switzerland	(29)	2013			21000	21000	316	(29)	2013
Franches-Montagnes	Switzerland	(18)	2008			21000	21000	62	(18)	2008
French Trotter	France	(17)	2013	512	15580		16092	233	(29)	2013
Hanoverian	Germany	(29)	2013			20000	20000	269	(29)	2013
Icelandic	Sweden	(29)	2013			180000	180000	555	(29)	2013
Jeju	Korea	(32)	2014			2000	2000	41	(32)	2013
Lusitano	Portugal	(29)	2013			12000	12000	391	(29)	2013
Mangalarga Paulista	Brazil	(36)	2014				31920	155	(29)	2013
Maremmano	Italy	(29)	2013			7000	7000	341	(29)	2013
Miniature	US	(29)	2013			185000	185000	521	(29)	2013
Mongolian	Mongolia	(29)	2013			2000000	2000000	751	(29)	2013
Morgan	US	(29)	2013			100000	100000	448	(29)	2013

Breed	country	source	year	brdg M	brdg F	"total"	Adopted total	N_e by LD/SNP	Ref LD	Reference year
New Forest Pony	UK	(29)	2013			15000	15000	474	(29)	2013
North Swedish Horse	Sweden	(29)	2013			10000	10000	369	(29)	2013
Norwegian Fjord	Norway	DAD-IS	2013	33	203	236		335	(29)	2013
Paint	USA	(29)	2013			1000000	1000000	399	(29)	2013
Percheron	USA	(29)	2013			20000	20000	451	(29)	2013
Peruvian_Paso	USA	(29)	2013			25000	25000	433	(29)	2013
Puerto Rican Paso Fino	Puerto Rico	(29)	2013			250000	250000	321	(29)	2013
Quarter Horse	USA	(38)	2011			2640000	2640000	426	(29)	2013
Saddlebred	USA	(29)	2013			75000	75000	297	(29)	2013
Shetland	Sweden	(29)	2013	207	828	27000	27000	365	(29)	2013
Shire	USA	(29)	2013			7000	7000	357	(29)	2013
Standardbred	global	(29)	2013					290	(29)	(29)
Standardbred Norway	Norway	(29)	2013					232	(29)	2013
Standardbred US	USA	(29)	2013					179	(29)	2013
Swiss_Warmblood	Switzerland	(29)	2013			15000	15000	271	(29)	2013
Tennessee Walking Horse	USA	(29)	2013			500000	500000	230	(29)	(29)
Thoroughbred	UK	(30)	2015	181	8284		8465	100	(33)	2010
Thoroughbred	Korea	(31)		76	2006		2082	79	(34)	2014
Thoroughbred	global	(29)	2013					190	(29)	2013
Thoroughbred UK Ireland	UK&Ireland	(29)	2013			8465	8465	143	(29)	2013
Thoroughbred US	US	(37)	1993				250000	163	(29)	2013
Tuva	Russia	(29)	2013			30000	30000	533	(29)	2013

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Supplementary Table S5: pig breeds

Key to table: see Supplementary Table S1

Part (a) Breeds with $N_e(DF)$

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	N_e by DF	Ref DF	Reference year	Adopted total
Alentejana	Portugal	DAD-IS	2013	363	5254		31398	26.76	(16)	2003-2010	31398
Angler Sattelschwein	Germany	DAD-IS	2010	15	58		73	73	(4)	2008	73
Belgian Landrace	Belgium	(3)	2004	62	797		859	88	(3)	2004	859
Berkshire	USA	DAD-IS	2007				44624	77	(2)	2007	44624
Berkshire	UK	(27) (28)	2012	36	48	680	716	47	(27)	2012	716
Black Slavonian	Croatia	(11)	2014	163	1064		1227	92	(11)	2014	1227
Blonde Mangalitsa	Hungary	DAD-IS	2011	142	3768		3910	58	(18)	2011	3910
British Landrace	UK	(27) (28)	2011	12	13	693	705	39	(27)	2010	705
Bunte Bentheimer	Germany	DAD-IS	2010	66	249		315	48	(4)	2008	315
Bunte Bentheimer	Germany	(9)	2003	24	95		119	24	(9)	2003	119
Cinta Senese	Italy	(8)	2007	252	1487		1739	267	(8)	2007	1739
Czech Landrace	Czech Republic							76	(1)	2013	
Czech Large White dam line	Czech Republic	DAD-IS	2013	345	4030	2327	7500	74	(1)	2013	7500
Czech Large White sire line	Czech Republic	DAD-IS	2013	210	300	272	2500	50	(1)	2013	2500
Duroc	Czech Republic	DAD-IS	2013			236	1100	35	(1)	2013	1100
Duroc	USA	DAD-IS	2007				83621	113	(2)	2007	83621
Duroc	Canada	(14)	2007-2008		40263		40263	72	(15)	2008	40263
Edelschwein	Germany	DAD-IS	2010	261	4972		5233	297	(4)	2008	5233

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	N_e by DF	Ref DF	Reference year	Adopted total
German Landrace	Germany	DAD-IS	2010	283	13091		13375	291	(4)	2008	13375
Guadyerbass	Spain	(6)	2000	14	42		56	23	(6)	1999	56
Hampshire	USA	DAD-IS	2007				45078	109	(2)	2007	45078
Hampshire	Canada	(13)	2007-2008		50		50	14	(15)	2008	50
Lacombe	Canada	(13)	2007-2008		2647		2647	36	(15)	2008	2647
Landrace	USA	DAD-IS	2007				34229	74	(2)	2007	34229
Landrace	Austria	DAD-IS	2002	255	3066		5000	415	(17)	2001	5000
Landrace	Canada	(13)	2007-2008		66140		66140	125	(15)	2008	66140
Large Black	UK	(27) (28)	2011	58	84	362	420	49	(27)	2010	420
Large White	Austria	DAD-IS	2002	457	5260		10000	181	(17)	2001	10000
Large White	UK	(27) (28)	2011	69	119	619	688	86	(27)	2009	688
Malhado de Alcobaça	Portugal	(7)	2004			160	160	25	(7)	2004	160
Middle White	UK	(27) (28)	2011	47	75	391	438	36	(27)	2011	438
Moura	Brazil	(12)	2014	10	20		30	30	(12)	2014	30
Piau	Brazil	(10)	2014	5	20		25	44	(10)	2011	25
Pietrain	Czech Republic	DAD-IS	2013	91			900	83	(1)	2013	900
Pietrain	Germany	DAD-IS	2010	2434	3365		5799	281	(4)	2008	5799
Pietrain	Austria	DAD-IS	2002	263	1154		5000	415	(17)	2001	5000
Pietrain	Germany	DAD-IS	2005	4710	4970		6680	315	(5)	2005	6680

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	N_e by DF	Ref DF	Reference year	Adopted total
Pietrain	Belgium	(3)	2004	605	1759		2364	125	(3)	2004	2364
Red Mangalitsa	Hungary	DAD-IS	2011	71	1525		1596	27.8	(18)	2011	1596
Rote Husumer	Germany	DAD-IS	2010	9	22		31	31	(4)	2008	31
Schwabisch Hallische	Germany	DAD-IS	2010	15	204		219	43	(4)	2008	219
Swallow-Bellied Mangalitsa	Hungary	DAD-IS	2011	55	1038		1093	55	(18)	2011	1093
Welsh	UK	(27) (28)	2011	75	157	793	868	38	(27)	2009	868
Yorkshire	USA	DAD-IS	2007				128093	113	(2)	2007	128093

Part (b) Breeds with $N_e(LD)$

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Ne by LD/SNP	Ref LD/SNP	Ref. year	Adopted total
Bisaro	Portugal	DAD-IS	2013	385	3737		28078	74	(24)	2013	28078
Chato Murciano	Spain	DAD-IS	2012	12	150		162	59	(24)	2013	162
Finnish Landrace	Finland	(19)	2009		2000		2000	80	(19)	2009	2000
Finnish Yorkshire	Finland	(19)	2009		2000		2000	55	(19)	2009	2000
Guadyerbas	Spain	(25)	2000	14	42		56	36	(25)	2014	56
Guinea	USA	(21)	2014				3178	431	(23) (26)	2015	3178
Korean Native	Korea	(20)	2003				68006	33	(20)	2014	68006
Landrace	Korea	DAD-IS						27	(20)	2014	
Manchado de Jabugo	Spain	DAD-IS	2013	10	20		30	46	(24)	2013	30
Mulefoot	USA	(22)	2006				200	145	(23) (26)	2015	200
Negro Iberian	Spain	DAD-IS	2013	518	6035		31923	95	(24)	2013	31923
Ossabaw Island	USA							191	(23) (26)	2015	
Red Wattle	USA	(14)	2014	71	119		190	381	(23) (26)	2015	190
Retinto	Spain	DAD-IS	2013	1745	50391		112619	88	(24)	2013	112619
Saddleback	USA							57	(23) (26)	2015	
Tamworth	USA							477	(23) (26)	2015	

Part (c) Reference list (pigs)

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Supplementary Table S6: goat breeds

Key to table: see Supplementary Table S1

Part (a) Breeds with $N_e(DF)$

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Adopted total	N_e by DF	Ref	Ref year
Alpine	France	(05)	2012				125797	125797	143	(05)	2006-2009
Angora	France	(05)	2012				1271	1271	76	(06)	2009
Boer	Brazil	(07) (12)	2015				426.9	426.9	173.5	(07)	2012
Chevre des Fosses	France	(13)	2006	170	515		685	685	43.9	(03)	2005
Dutch Landrace	Netherlands	DAD-IS	2009	344	2131		2475	2475	192	(08)	2005
Icelandic	Iceland	DADIS	2009	70	585	585	700	700	5.1	(02)	2012
Payoya	Spain	(04)	2011						18.1	(04)	2011
Poitevine	France	(13)	2006	200	2600		2800	2800	77.5	(03)	2004
Provencale	France	(13)	2006	65	900		965	965	455	(03)	2005
Saanen	France	(05)	2012				183611	183611	120	(05)	2006-2009
White Shorthaired goat	Slovakia	DAD-IS	2013		774		7199	7199	182	(09)	2011

Part (b) Breeds with $N_e(LD)$

Breed	country	source	year	brdg M	brdg F	hbk F	"total"	Adopted total	N_e by LD/SNP	Ref	Ref year
Alpine	Canada	(10) (12)	1999		1105		5746	5746	149	(01)	1995
Boer	Canada	(10) (12)	2009		1064		5533	5532.8	77	(01)	1995
Boer	Australia								46	(01)	1995
Cashmere	Australia								41	(01)	1995
La Mancha	Canada	(10) (12)	1999		264		1373	1372.8	62	(01)	1995
Nubian	Canada	(10) (12)	1999		826		4295	4295.2	61	(01)	1995
Rangeland	Australia								104	(01)	1995
Saanen	Canada	(10) (12)	1999		483		2512	2511.6	113	(01)	1995
Toggenburg	Canada	(10) (12)	1999		363		1888	1887.6	38	(01)	1995

Part (c) Reference list (goats)

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Supplementary Table S7 Variation among UK cattle breeds in values of the input variables for Hill's equation

Breeds are classified according to the female/male ratio (F/M) in calf registrations during the year. (regs: registrations; dau: daughter; GL: generation length; s-m sire-son, s-f sire-daughter; d-m dam-son; d-f dam-daughter)

(a) Breeds with low F/M ratio

Breed	year	Total sires	M calf regs	F calf regs	Ratio F/M calves	Ratio dams/sire	Total dams	Mean sons/sire	Variance sons/sire	Mean dau. / sire	Variance dau. / sire	covariance sire	GL s-m	GL s-f	GL d-m	GL d-f	variance son/dam	variance dau./dam	covariance dam
Whitebred Shorthorn	2011	28	48	49	1	3.2	90	1.71	4.8	1.75	3.6	1.852	5.7	5.8	6.1	6	1.456	0.146	-0.0297
Poll Hereford	2011	544	1747	2227	1.3	7.3	3974	3.2	14.45	4.12	18.2	9.644	4.1	8.2			41.668	2.486	-0.0187
Hereford	2011	302	957	1369	1.4	7.7	2326	3.18	12.65	4.53	17.8	9.767	5.3	5.6			17.739	0.822	-0.0144
Aberdeen Angus (orig.)	2011	16	20	37	1.9	3.6	57	1.19	2.3	2.38	8.25	1.592	5.5	7.2			1.226	0.096	-0.0331
Beef Shorthorn	2008	370	956	1784	1.9	7.4	2740	2.58	12.86	4.82	25.5	9.947	5.1	5.4			31.37	1.301	-0.0176
Hereford (trad.)	2011	60	155	301	1.9	7.6	456	2.58	18.76	5.02	26.2	13.35	8.7	9.1			3.005	0.069	-0.0099
Irish Moiled	2011	68	33	136	4.1	2.4	157	0.5	0.75	2.06	4.19	0.631	5.3	5.2	5.4	5.4	9.344	0.856	-0.0687
Shetland	2011	63	33	147	4.5	2.9	180	0.52	0.74	2.33	4.68	0.449					7.003	0.5	-0.0476
British White	2011	100	70	343	4.9	4.0	398	0.7	1.34	3.43	6.89	0.292	5	5.2	5.6	5.4	14.85	0.866	-0.0433
Mean for F/M <5									7.627	3.38	12.8	5.28	Mean generation length 5.91 years				14.19	0.793	-0.0315

(b) Breeds with medium F/M ratio

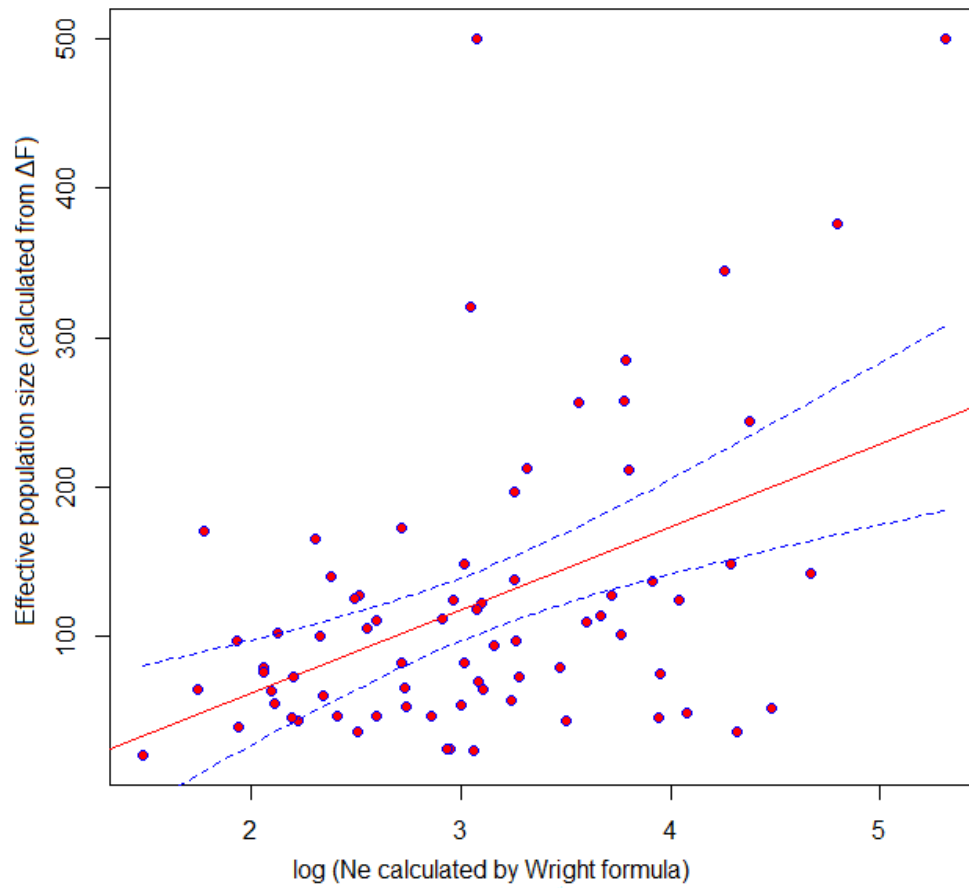
Breed	year	Total sires	M calf regs	F calf regs	Ratio F/M calves	Ratio dams/sire	Total dams	Mean sons/sire	Variance sons/sire	Mean dau. / sire	Variance dau. / sire	covariance sire	GL s-m	GL s-f	GL d-m	GL d-f	variance son/dam	variance dau./dam	covariance dam
Dairy Shorthorn	2008	136	87	684	7.9	5.7	2405	0.64	2.08	5.02	69.1	2.371	14.7	7.8			1.10	0.022	-0.0002
Gloucester	2011	32	8	66	8.3	2.2	70	0.25	0.26	2.07	4.83	-0.48	5.7	5.2	6	5.3	5.27	0.473	-0.0798
British Friesian	2011 2012	182	236	2352	9.96	15	2820	0.81	3.52	10.3	313	21.45	10.2	8			12.7	0.098	-0.0054
Lincoln Red	2011	155	74	771	10.4	5.2	810	0.4	1.04	4.97	18.8	0.961	5.4	4.9	5.3	5.1	28.1	1.129	-0.0364
Luing	2011	227	168	1795	10.7	8.5	1894	0.75	3.72	8.01	31.9	1.344	4.0	4.6	5.7	5.5	41.1	1.046	-0.0229
South Devon	2011	527	223	3099	13.9	6.3	3322	0.42	1.408	5.88	20.7	0.794	6.1	6			76.4	2.166	-0.0247
Dexter	2008	545	120	2215	18.5	4.3	2335	0.22	0.32	4.06	13.7	1.728	6.5	6.7			75.5	2.856	0.0341
Lincoln Red (orig.)	2008	33	9	171	19	5.5	180	0.27	0.33	5.18	20.2	-0.2	6.8	5.9			8.12	0.428	-0.0480
Red Poll	2011	159	46	901	19.6	5.6	868	0.31	0.052	5.97	35.2	-0.21	9.4	6	6.5	5.3	18.1	0.322	-0.0200
Mean for F/M 5-20									1.414	5.72	58.6	3.084	Mean generation length 6.49 years				29.6	0.949	-0.0226

(c) Breeds with high F/M ratio

Breed	year	Total sires	M calf regs	F calf regs	Ratio F/M calves	Ratio dams/sire	Total dams	Mean sons/sire	Variance sons/sire	Mean dau. / sire	Variance dau. / sire	covariance sire	GL s-m	GL s-f	GL d-m	GL d-f	variance son/dam	variance dau./dam	covariance dam
Longhorn	2009	309	72	1606	22.3	5.4	1613	0.23	0.38	5.2	23.4	0.204	5.92	5.6	5.9	5.6	54.71	1.88	-0.034
Welsh Black Dairy	2010	345	90	2041	22.7	6.2	2131	0.26	0.54	5.92	24.5	1.121	6.1	6.3			44.68	1.066	-0.022
Shorthorn grading	2008	146	51	1179	23.1	9.1	1325	0.3	0.71	6.97	82.3	1.769	6.7	6.7			17.25	0.318	-0.015
Ayrshire	2011	405	123	2930	23.8	7.5	3053	0.31	1.18	7.23	138	4.645					62.17	1.432	-0.021
Highland	2009	358	53	1708	32.2	4.9	1793	0.18	0.43	4.82	19.3	0.423	5.7	6.8			54.14	1.89	-0.032
Guernsey	2011	99	28	943	33.7	9.8	971	0.29	0.41	9.56	163	3.477	5.6	6.4			22.91	0.59	-0.024
Mean for F/M >20									0.61	6.62	75.2	1.94	Mean generation length 6.1 years				42.64	1.196	-0.025

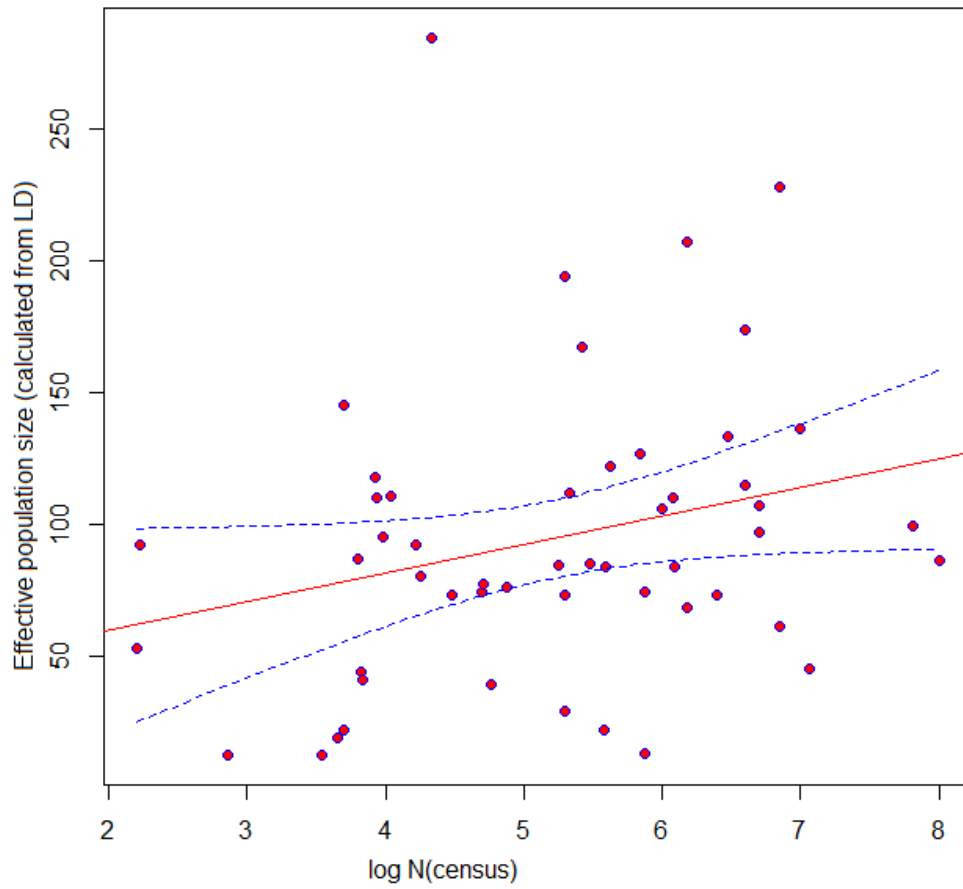
Supplementary Table S8 Ratios of effective to census population sizes (N_e/N_c) in descending order of median. Species classified according to the technique employed

Species and technique	median	mean	variance	CV %	max	min	n
Pigs LD	0.0878	0.457	0.4134	140.8	2.01	0.00049	12
Pigs DF	0.0553	0.199	0.1377	186.6	1.75	0.00085	43
Goats DF	0.0437	0.114	0.0272	144.6	0.47	0.00065	10
Horse DF	0.0366	0.243	0.2882	220.8	3.19	0.00030	42
Goats LD	0.0230	0.027	0.0002	48.0	0.05	0.01392	6
Sheep DF	0.0166	0.059	0.0090	160.0	0.49	7.86E-05	84
Sheep LD	0.0151	0.130	0.0829	221.7	1.43	4.09E-06	56
Horse LD	0.0150	0.024	0.0009	124.8	0.14	0.00016	37
Cattle DF	0.0104	0.050	0.0215	292.8	1.27	2.4E-05	124
Cattle LD	0.0004	0.020	0.0075	436.0	0.55	8.6E-07	53

Supplementary Figure S1

Caption to Supplementary Figure S1

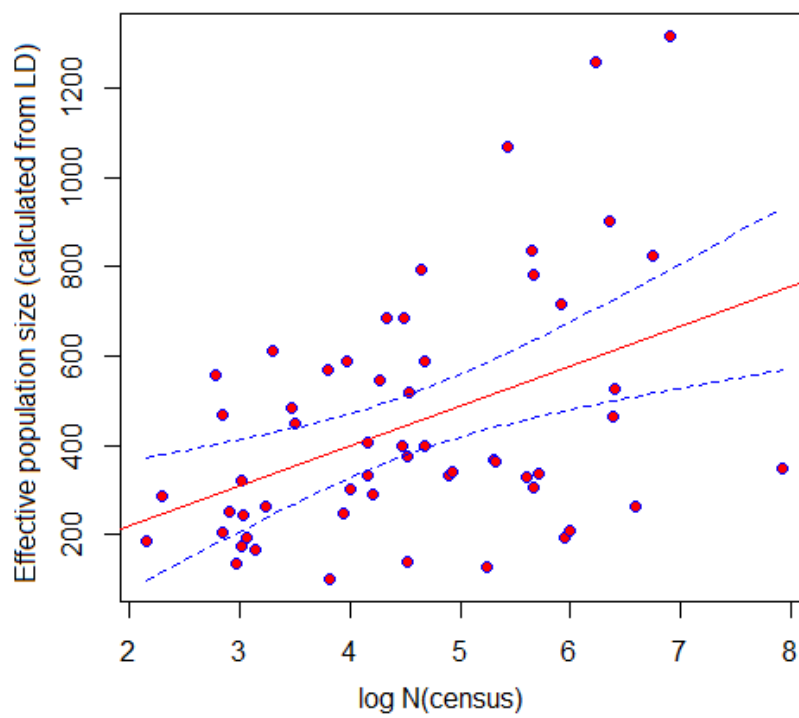
Cattle: scattergram from Table 3, with regression line and confidence limits ($P < 0.05$). y-axis: $N_e(\Delta F)$; x-axis: $\log_{10}N_e(\text{Wright})$

Supplementary Figure S2

Caption to Supplementary Figure S2

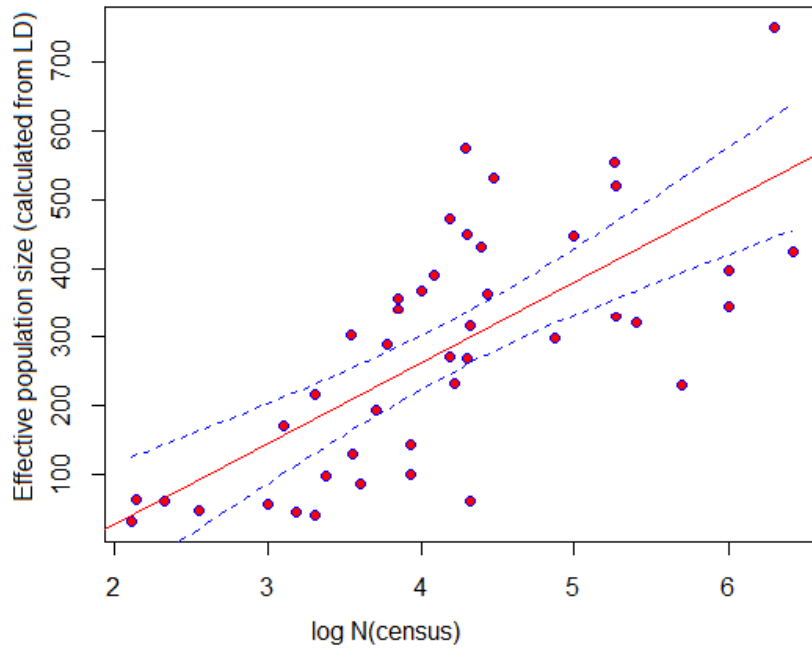
Cattle: scattergram from Table 3, with regression line and confidence limits ($P <$

0.05). y-axis: $N_e(LD)$; x-axis: $\log_{10} N_c$

Supplementary Figure S3

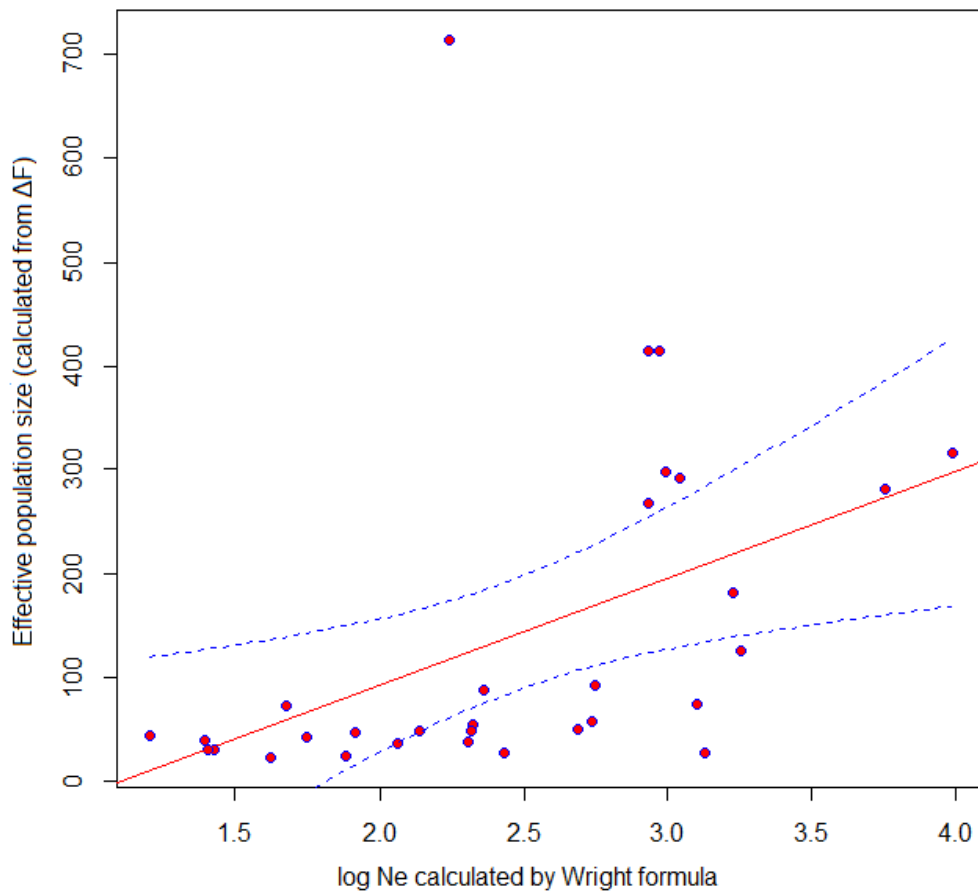
Caption to Supplementary Figure S3

Sheep: scattergram from Table 3, with regression line and confidence limits ($P < 0.05$). y-axis: $N_e(LD)$; x-axis: $\log_{10}N_c$

Supplementary Figure S4

Caption to Supplementary Figure S4

Horses: scattergram from Table 3, with regression line and confidence limits ($P < 0.05$). y-axis: $N_e(LD)$; x-axis: $\log_{10}N_c$

Supplementary Figure S5

Caption to Supplementary Figure S5

Figs: scattergram from Table 3, with regression line and confidence limits ($P < 0.05$).

y-axis: $N_e(LD)$; x-axis: $\log_{10} N_e$ (Wright)