

Swayne's hartebeest in Ethiopia: population estimate, genetic variability and competition with livestock

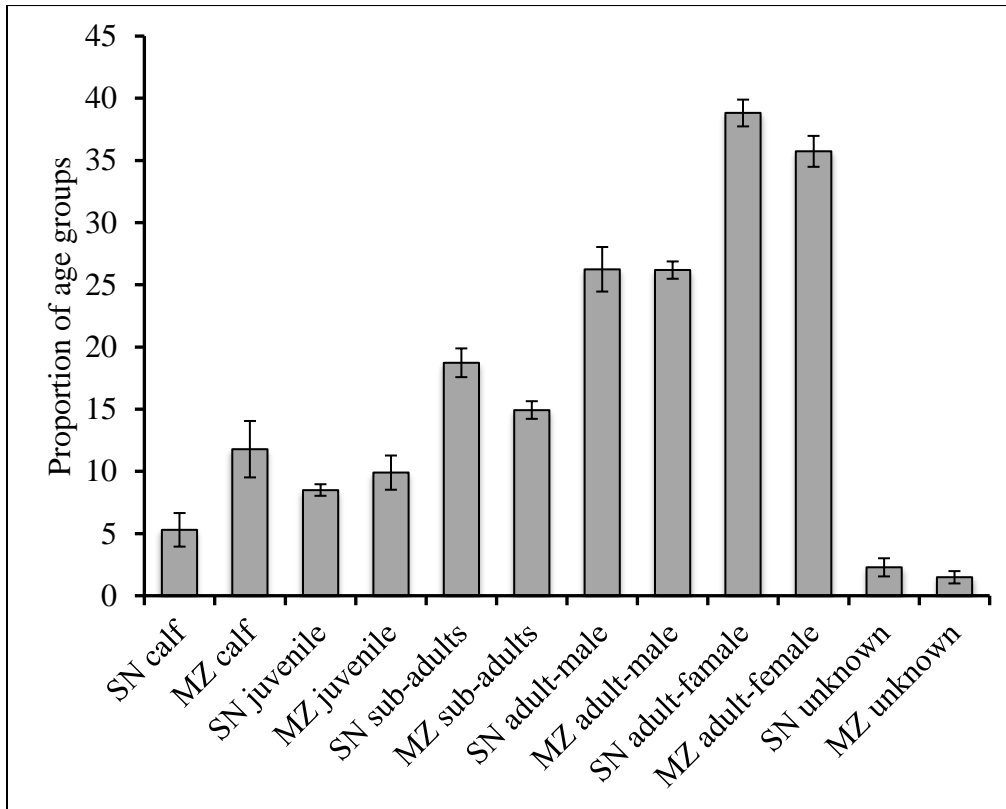
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SUPPLEMENTARY TABLE 1 List of D-loop sequences included in the genetic analysis (480 bp). Additional information can be found in Flagstad et al. 2000.

Sample ID	Sampling locality	Taxon	Haplotype
KF955546		<i>D. lunulatus</i>	out group
AF300899	Namibia	caama	1
same as AF300899	Namibia	caama	1
AF300900	Namibia	caama	2
AF300901	Namibia	caama	3
AF300906	Tanzania (8°40'S, 37°18'E)	lichtensteini	4
AF300905	Tanzania (8°38'S, 36°55'E)	lichtensteini	5
AF300904	Tanzania (8°30'S, 37°10'E)	lichtensteini	6
AF300902	Tanzania	lichtensteini	7
AF300903	Tanzania (8°42'S, 36°50'E)	lichtensteini	8
AF300931	Northern Africa	buselaphus	9
AF300927	Cameroon (8°40'N, 14°40'E)	major	10
AF300929	Cameroon	major	11
AF300926	Guinea (12°10'N, 13°58'W)	major	12
AF300924	w of L Tana (11°40'N, 36°30'E)	tora (rahatensis)	13
AF300921	w of L Tana (11°40'N, 36°30'E)	tora (rahatensis)	14
AF300923	w of L Tana (11°40'N, 36°30'E)	tora (rahatensis)	15
AF300908	Kenya (1°15'N, 37°00')	cokii	16
M001	Maze	swaynei	17
S012A	Senkele	swaynei	17
S023B	Senkele	swaynei	17
AF300886	Senkele (7°10'N, 38°20'E)	swaynei	17
AF300887	Senkele (7°10'N, 38°20'E)	swaynei	18
S031	Senkele	swaynei	19
AF300896	Aledeghi WR (9°30'N, 40°20'E)	swaynei	20
same as AF300896	Ethiopia	swaynei (noacki)	20
AF300890	Senkele (7°10'N, 38°20'E)	swaynei	21
AF300891	Senkele (7°10'N, 38°20'E)	swaynei	22
AF300894	Nechisar (6°0'N, 37°45'E)	swaynei	23
AF300889	Senkele (7°10'N, 38°20'E)	swaynei	24
M120A	Maze	swaynei	25
S005B	Senkele	swaynei	26
AF300888	Senkele (7°10'N, 38°20'E)	swaynei	26
AF300907	Kenya	cokii	27
AF300915	Kenya (0°50'N, 35°15'E)	lewel (jacksoni)	28
AF300919	Tchad (9°40'N, 19°15'E)	lewel (tchadensis)	29
AF300909	Kenya (0°35'N, 34°45'E)	lewel (jacksoni)	30

AF300897	Aledeghi WR (9°30'N, 40°20'E)	swaynei	31
AF300922	Sudan	tora	32
AF300917	Chad (10°45'N, 18°10'E)	lewel (tchadensis)	33
AF300928	Cameroon	major	34
AF300914	Chad (10°15'N, 19°08'E)	lewel (tchadensis)	35
AF300918	Chad (10°15'N, 19°08'E)	lewel (tchadensis)	36
AF300911	Chad (10°45'N, 18°10'E)	lewel (tchadensis)	37
AF300913	South Sudan (5°10'N, 31°30'E)	lelwel	38
AF300930	Guinea (12°10'N, 13°30'W)	major	39
AF300912	Sudan	lelwel	40
AF300916	Uganda (4°05'N, 32°20'E)	lewel (jacksoni)	41
AF300910	Uganda (2°15'N, 34°20'E)	lewel (jacksoni)	42
AF300925	Sudan (11°40'N, 36°30'E)	tora (rahatensis)	43
AF300920	unknown	neumannii	44
M033	Maze	swaynei	45
M020	Maze	swaynei	46
M120B	Maze	swaynei	46
MT3	Maze	swaynei	46
AF300881	Senkele (7°10'N, 38°20'E)	swaynei	47
S008	Senkele	swaynei	48
S012B	Senkele	swaynei	48
S013	Senkele	swaynei	48
S024B	Senkele	swaynei	48
S030	Senkele	swaynei	48
S034	Senkele	swaynei	48
ST1	Senkele	swaynei	48
M004	Maze	swaynei	49
M008	Maze	swaynei	49
M012	Maze	swaynei	49
MT2	Maze	swaynei	49
S032	Senkele	swaynei	49
AF300884	Senkele (7°10'N, 38°20'E)	swaynei	49
S029	Senkele	swaynei	50
M098	Maze	swaynei	51
S003	Senkele	swaynei	51
S010A	Senkele	swaynei	51
S020	Senkele	swaynei	51
S022B	Senkele	swaynei	51
S025	Senkele	swaynei	51
S240	Senkele	swaynei	51
AF300882	Senkele (7°10'N, 38°20'E)	swaynei	51
AF300883	Senkele (7°10'N, 38°20'E)	swaynei	52
AF300885	Ethiopia	swaynei	53
M007B	Maze	swaynei	54
S009	Senkele	swaynei	54
S021	Senkele	swaynei	54
S023A	Senkele	swaynei	54
S026	Senkele	swaynei	54
AF300898	Somalia	swaynei	55
M026	Maze	swaynei	56
M091	Maze	swaynei	56
S002	Senkele	swaynei	56

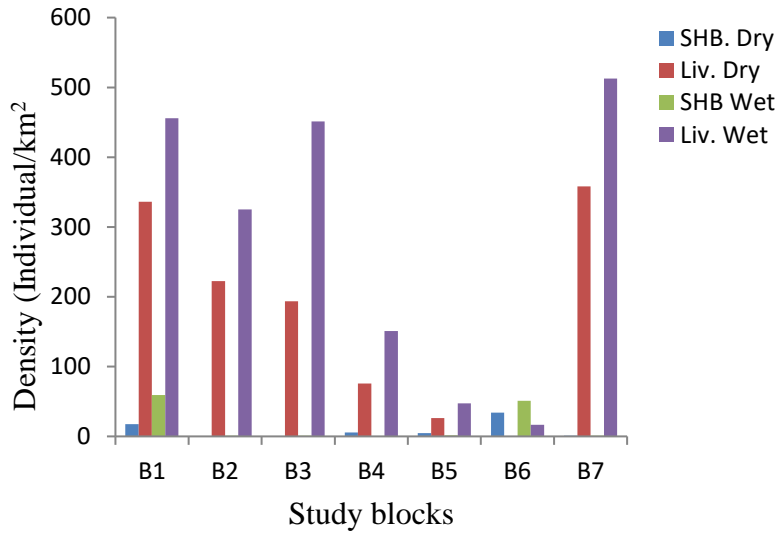
S006	Senkele	swaynei	56
S007	Senkele	swaynei	56
S010B	Senkele	swaynei	56
S016	Senkele	swaynei	56
S017	Senkele	swaynei	56
AF300893	Nechisar (6°0'N, 37°45'E)	swaynei	57
AF300892	Senkele (7°10'N, 38°20'E)	swaynei	58
S001	Senkele	swaynei	59
M016	Maze	swaynei	60
M024	Maze	swaynei	60
M140	Maze	swaynei	60
M014	Maze	swaynei	61
M180	Maze	swaynei	62
AF300895	Maze (6°25'N, 36°50'E)	swaynei	63
M009	Maze	swaynei	64
M006	Maze	swaynei	65
S015	Senkele	swaynei	66
S022A	Senkele	swaynei	66
S024A	Senkele	swaynei	66
Mago	Mago NP	swaynei	67
M003	Maze	swaynei	67
M005	Maze	swaynei	67
M007A	Maze	swaynei	67
M011	Maze	swaynei	67
M013	Maze	swaynei	67
M015	Maze	swaynei	67
M018	Maze	swaynei	67
M019	Maze	swaynei	67
M023	Maze	swaynei	67
M025	Maze	swaynei	67
M027	Maze	swaynei	67
M029	Maze	swaynei	67
M030	Maze	swaynei	67
M031	Maze	swaynei	67
M034	Maze	swaynei	67
M035	Maze	swaynei	67
M620	Maze	swaynei	67
S005A	Senkele	swaynei	67
M010	Maze	swaynei	68



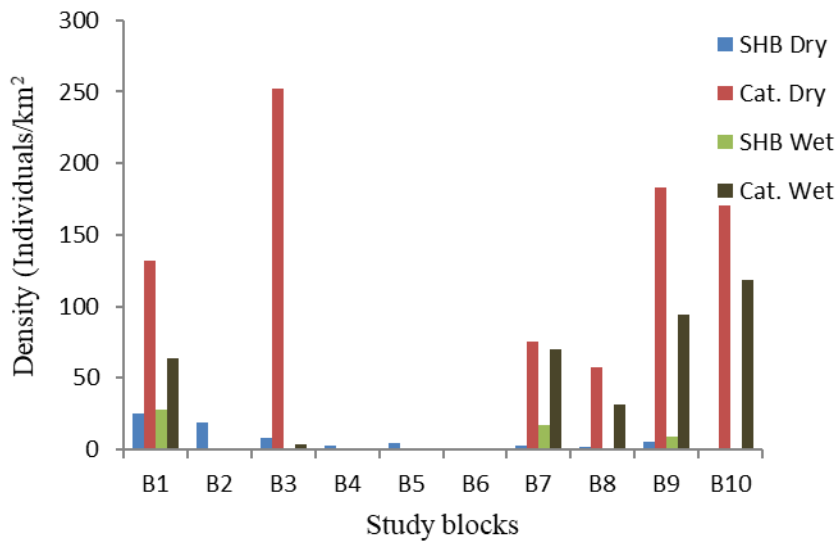
SUPPLEMENTARY FIG. 1 Monthly proportion of calves, juveniles, subadults and adult males and females of Swayne's hartebeest populations in Senkele Swayne's Hartebeest Sanctuary (SN) and Maze National Park (MZ).

SUPPLEMENTARY TABLE 2 Population estimate of livestock in Senkele Swayne's Hartebeest Sanctuary (SSHS) and Maze National Park (MNP) during the dry and wet seasons.

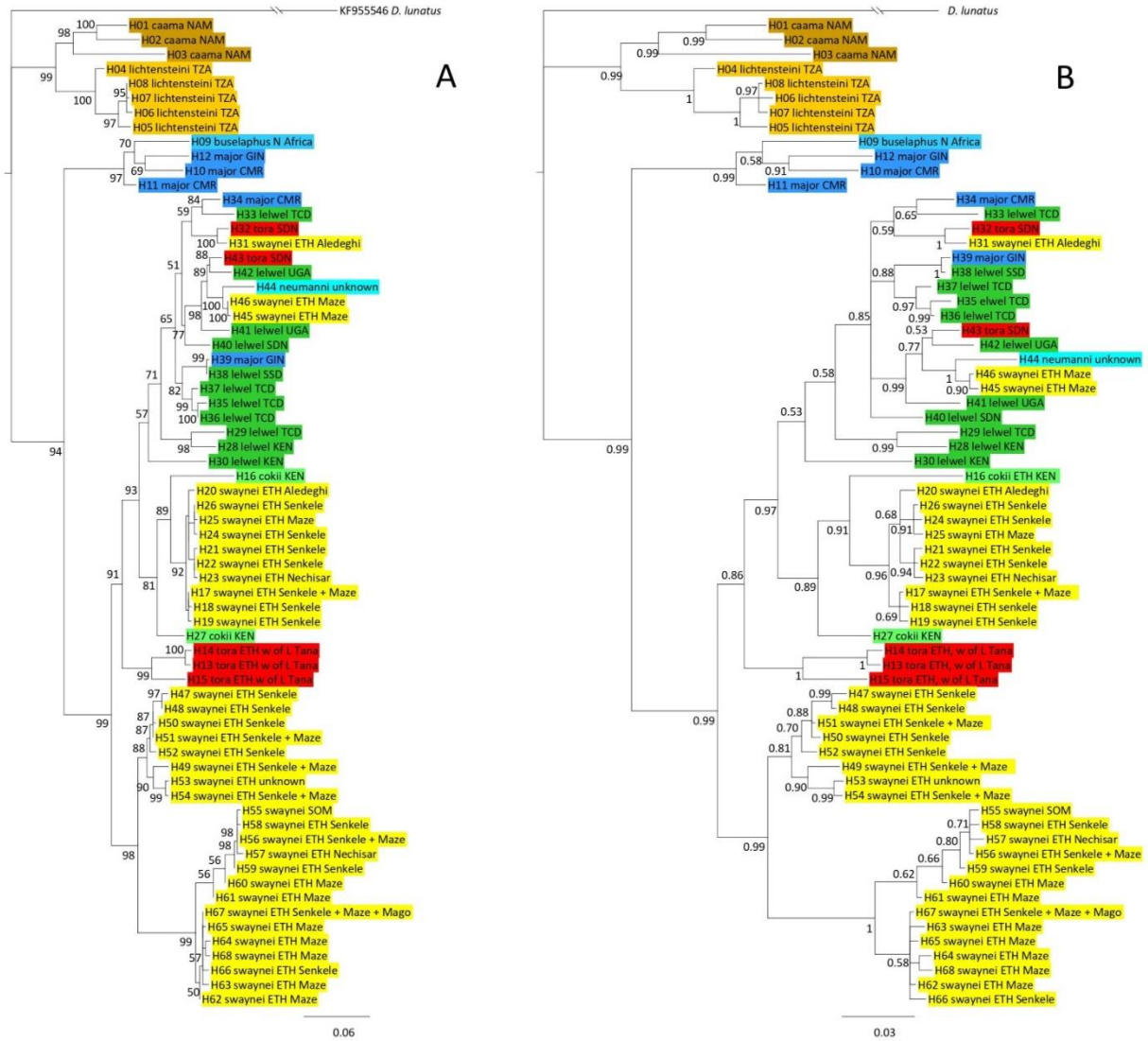
Site	Block	Cattle		Donkey		Horse		Goat		Sheep	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
SSHS	A1	2429±161	3295±42	74±18	80±7	13±3	17±6	117±20	333±14	98±14	176±31
	A2	2348±115	3429±119	121±27	114±12	27±19	39±7	221±20	423±16	125±12	332.5±26
	A3	1360±274	3173±213	50±25	143±16	6±5	24±10	144±15	217±5	158±18	229±23
	A4	743±309	1483±44	25±14	90±11	1±1	16±4	29±7	47±6	50±25	109±17
	A5	133±85	239±103	3±3	21±6	2±1	4±1	102±26	280±92	185±5	145±14
	A6	7±7	152±14	1±1	9±4	1±1	2.5±1	0	28±6	5±5	23±3
	A7	2264±97	3241±163	131±4	178±77	24±4	52±16	283±16	369±62	144±191	376±48
	Total	9,284	15,012	405	637	74	155	896	1,697	765	1,391
MNP	B1	2028.5±655	984±217.0	3.75±2	1.3±1	0	0	11.5±2	3.7±1	2.75±4	2.3±1
	B2	0	0	0.5±1	0	0	0	0	0	0	0
	B3	3028.25±363	39±67.5	7.5±6	0	0	0	48.25±61	0	0.5±1	0
	B4	0	0	0	0	0	0	0	0	0	0
	B5	0	0	0	0	0	0	0	0	0	0
	B6	0	0	0	0	0	0	0	0	0	0
	B7	1418±486	1310±248.2	6.5±3	5.7±1.5	0	0	7.5±6	7.3±3.2	3.5±6	2.3±0.6
	B8	1234.5±285	681.7±201.2	0	0	0	0	3.5±3	12.7±4.5	1.25±3	0
	B9	2593.5±189	1340.7±295.6	10.75±6	9±5.3	0	0	30.25±21	8±3.6	9±6	3.7±2.1
	B10	5330±272	3707±537	0	0	0	0	0	0	0	0
	Total	15,634	16,919	31	17	0	0	102	32	18	8



SUPPLEMENTARY FIG. 2 Densities (individuals/km²) of Swayne's hartebeests and cattle in the survey blocks (B1 – B7) of Senkele Swayne's Hartebeest Sanctuary (SHB = Swayne's hartebeest, Cat. = Cattle) during the dry and wet seasons.



SUPPLEMENTARY FIG. 3 Density (individuals/km²) of Swayne's hartebeests and cattle in the survey blocks (B1 – B10) of Maze National Park (SHB = Swayne's hartebeest, Cat. = Cattle) during the dry and wet seasons.



SUPPLEMENTARY FIG. 4 Phylogenetic relationship among Swayne's Hartebeests based on mitochondrial D-loop sequences. A) maximum-likelihood tree, B) Bayesian inference tree. Scale indicates substitutions per site and node numbers refer to ML bootstrap values and Bayesian posterior probabilities, respectively. Subspecies are color-coded: yellow=swaynei, red=tora, light green=cokii, dark green=lelwel, light blue=neumanni, dark blue=major, light brown=lichtensteini, dark brown=caama, xx=buselaphus. For additional information see Table S2.