A newly discovered wildlife migration in Namibia and Botswana is the longest in Africa

R. NAIDOO, M. J. CHASE, P. BEYTELL, P. DU PREEZ, K. LANDEN
G. STUART-HILL and R. TAYLOR

TABLE S1 Multi-model inference parameters (including Akaike weights) for all models included in four analyses of environmental factors affecting the migratory behaviour of zebra *Equus quagga* in Namibia and Botswana.

Variables*	Degrees of freedom	Log-likelihood	AICc	Delta AICc	Akaike weight
Cell counts during southward migration					
1,3–5	5	-455.4	923.1	0	0.1
1,2,4,5	5	-455.44	923.2	0.08	0.09
1,3	3	-457.67	923.5	0.37	0.08
1,3,4	4	-456.69	923.6	0.49	0.08
1,2,4	4	-456.71	923.7	0.52	0.07
1,2	3	-457.75	923.7	0.53	0.07
1,2,4–6	6	-454.95	924.3	1.2	0.05
1,3–6	6	-455.01	924.5	1.34	0.05
1,2,4,6	5	-456.13	924.6	1.47	0.05
1,3,4,6	5	-456.25	924.8	1.69	0.04
1,3,6	4	-457.38	925	1.87	0.04
1,2,6	4	-457.39	925	1.88	0.04
1–5	6	-455.4	925.2	2.11	0.03
1–3	4	-457.67	925.6	2.45	0.03
1,3,5	4	-457.67	925.6	2.45	0.03
1–4	5	-456.68	925.7	2.57	0.03
1,2,5	4	-457.75	925.7	2.6	0.03
1–6	7	-454.94	926.5	3.33	0.02
1–3,4,6	6	-456.13	926.7	3.58	0.02
1–3,6	5	-457.36	927.1	3.93	0.01
1,2,5,6	5	-457.37	927.1	3.94	0.01
1,3,5,6	5	-457.37	927.1	3.95	0.01
1–3,5	5	-457.67	927.7	4.54	0.01
1–3,5,6	6	-457.35	929.1	6.01	0
1	2	-462.51	931.1	7.99	0
1,4,5	4	-460.53	931.3	8.17	0
1,6	3	-461.62	931.4	8.26	0
1,4–6	5	-459.63	931.6	8.46	0
1,4	3	-462	932.2	9.02	0
1,4,6	4	-461.13	932.5	9.36	0
1,5	3	-462.46	933.1	9.95	0
1,5,6	4	-461.55	933.3	10.21	0
2–6	6	-478.82	972.1	48.94	0
2–4,6	5	-481.68	975.7	52.57	0

2,4–6	5	-481.85	976	52.91	0
2–5	5	-482.17	976.7	53.55	0
2,4,5	4	-484.05	978.3	55.2	0
3–6	5	-483.86	980.1	56.92	0
3–5	4	-485.27	980.8	57.65	0
2,4,6	4	-485.62	981.5	58.34	0
2–4	4	-485.65	981.5	58.4	0
2,3,6	4	-486.23	982.7	59.57	0
2,3,5,6	5	-485.95	984.2	61.11	0
2,4	3	-488.13	984.4	61.28	0
2,6	3	-488.99	986.1	63.01	0
3,4,6	4	-488.05	986.3	63.2	0
2,3	3	-489.23	986.6	63.49	0
3,4	3	-489.62	987.4	64.27	0
2	2	-491.01	988.1	64.98	0
2,5,6	4	-488.95	988.1	65.01	0
2,3,5	4	-489.17	988.6	65.44	0
3,6	3	-490.91	990	66.85	0
2,5	3	-491.01	990.2	67.05	0
3	2	-492.21	990.5	67.39	0
3,5,6	4	-490.91	992.1	68.93	0
3,5	3	-492.21	992.6	69.45	0
4–6	4	-495.84	1002	78.79	0
4,5	3	-498.07	1004	81.16	0
4,6	3	-501.55	1011	88.13	0
6	2	-502.81	1012	88.58	0
5,6	3	-502.43	1013	89.88	0
4	2	-504.12	1014	91.21	0
Intercept	1	-505.19	1014	91.3	0
5	2	-504.67	1015	92.31	0

Cell counts during northward migration

1,4–6	5	-688.64	1390	0	0.27
1,3–6	6	-687.8	1390	0.44	0.21
1,2,4–6	6	-687.83	1390	0.5	0.21
1,3–5	5	-689.63	1392	1.97	0.1
1,2,4,5	5	-689.66	1392	2.05	0.1
1–6	7	-687.77	1392	2.5	0.08
1–5	6	-689.61	1394	4.06	0.03
1,4,5	4	-693.07	1396	6.76	0.01
1,4,6	4	-697.12	1404	14.86	0
1,3,4,6	5	-696.11	1405	14.94	0
1,2,4,6	5	-696.12	1405	14.96	0
1–4,6	6	-696.11	1407	17.05	0
1,3,4	4	-698.25	1407	17.13	0
1,2,4	4	-698.26	1407	17.15	0
1–4	5	-698.25	1409	19.23	0

1,4	3	-702.41	1413	23.37	0
3–5	4	-710.54	1431	41.71	0
2,4,5	4	-710.6	1431	41.82	0
3–6	5	-709.58	1432	41.89	0
2,4–6	5	-709.63	1432	41.98	0
4–6	4	-710.98	1432	42.59	0
2–5	5	-710.51	1433	43.75	0
2–6	6	-709.53	1434	43.9	0
4,5	3	-714.24	1437	47.03	0
1,5,6	4	-716.88	1444	54.4	0
3,4,6	4	-717.26	1445	55.14	0
1,2,5,6	5	-716.22	1445	55.15	0
2,4,6	4	-717.27	1445	55.17	0
1,3,5,6	5	-716.25	1445	55.22	0
4,6	3	-718.6	1445	55.75	0
3,4	3	-718.76	1446	56.07	0
2,4	3	-718.78	1446	56.1	0
1–3,5,6	6	-716.15	1447	57.14	0
2–4,6	5	-717.25	1447	57.23	0
1,2,5	4	-718.71	1448	58.05	0
2–4	4	-718.76	1448	58.15	0
1,3,5	4	-718.79	1448	58.2	0
1–3,5	5	-718.64	1450	59.99	0
4	2	-722.97	1452	62.43	0
1,6	3	-722.57	1453	63.7	0
1,5	3	-722.69	1454	63.92	0
1,2,6	4	-722.18	1455	64.99	0
1,3,6	4	-722.23	1455	65.08	0
1–3,6	5	-721.97	1456	66.65	0
1,2	3	-724.96	1458	68.47	0
1,3	3	-725.08	1458	68.72	0
1–3	4	-724.7	1460	70.02	0
1	2	-728.47	1463	73.41	0
5,6	3	-753.58	1515	125.71	0
2,5,6	4	-753.12	1516	126.87	0
3,5,6	4	-753.14	1517	126.91	0
2,3,5,6	5	-753.09	1519	128.91	0
2,5	3	-755.28	1519	129.1	0
3,5	3	-755.33	1519	129.21	0
2,3,5	4	-755.25	1521	131.12	0
5	2	-758.35	1523	133.18	0
6	2	-777.48	1561	171.44	0
2,6	3	-777.46	1563	173.48	0
3,6	3	-777.47	1563	173.48	0
2,3,6	4	-777.42	1565	175.47	0
2	2	-779.7	1566	175.89	0
3	2	-779.75	1566	175.97	0
Intercept	1	-781.16	1566	176.76	0

2,3	3	-779.65	1567	177.84	0

Probability of a cell being a stopover point on the southward migration

1	2	-19.85	43.74	0	0.2
1,2	3	-19.73	45.56	1.82	0.08
1,3	3	-19.74	45.57	1.83	0.08
1,4	3	-19.79	45.68	1.94	0.07
1,6	3	-19.83	45.75	2.01	0.07
1,5	3	-19.85	45.79	2.05	0.07
1,4,5	4	-19.49	47.13	3.39	0.04
1,2,4	4	-19.68	47.51	3.76	0.03
1,3,4	4	-19.68	47.52	3.78	0.03
1,2,6	4	-19.72	47.6	3.85	0.03
1,3,6	4	-19.72	47.6	3.86	0.03
1,2,3	4	-19.73	47.62	3.88	0.03
1,2,5	4	-19.73	47.63	3.88	0.03
1,3,5	4	-19.74	47.63	3.89	0.03
1,4,6	4	-19.78	47.72	3.98	0.03
1,5,6	4	-19.83	47.81	4.07	0.03
1,2,4,5	5	-19.38	48.99	5.25	0.01
1,3–5	5	-19.38	49	5.25	0.01
1,4–6	5	-19.47	49.18	5.43	0.01
1,2,4,6	5	-19.65	49.53	5.78	0.01
1,3,4,6	5	-19.66	49.55	5.8	0.01
1–4	5	-19.67	49.57	5.83	0.01
1,2,5,6	5	-19.72	49.68	5.93	0.01
1–3,6	5	-19.72	49.68	5.93	0.01
1,3,5,6	5	-19.72	49.68	5.94	0.01
1–3,5	5	-19.73	49.7	5.96	0.01
1,2,4–6	6	-19.36	51.04	7.3	0.01
1,3–6	6	-19.36	51.05	7.31	0.01
1–5	6	-19.38	51.08	7.34	0.01
1–4,6	6	-19.64	51.61	7.87	0
1–3,5,6	6	-19.72	51.77	8.03	0
1–6	7	-19.36	53.15	9.41	0
4,6	3	-34.27	74.64	30.89	0
4–6	4	-33.71	75.58	31.83	0
3,4	3	-34.76	75.62	31.88	0
2,4	3	-34.86	75.81	32.07	0
3,4,6	4	-33.97	76.09	32.35	0
2,4,6	4	-34.02	76.2	32.45	0
3–5	4	-34.08	76.31	32.56	0
2,4,5	4	-34.17	76.49	32.75	0
4	2	-36.25	76.54	32.8	0
3–6	5	-33.39	77.01	33.27	0
2,4–6	5	-33.44	77.12	33.37	0

4,5	3	-35.56	77.21	33.47	0
2–4	4	-34.63	77.42	33.67	0
2–4,6	5	-33.79	77.81	34.06	0
2–5	5	-33.95	78.13	34.39	0
5,6	3	-36.05	78.19	34.45	0
6	2	-37.21	78.47	34.72	0
2–6	6	-33.23	78.79	35.05	0
3	2	-37.43	78.91	35.16	0
2	2	-37.44	78.92	35.18	0
3,5	3	-36.61	79.31	35.57	0
2,5	3	-36.66	79.41	35.67	0
3,5,6	4	-35.68	79.53	35.78	0
3,6	3	-36.74	79.57	35.82	0
2,6	3	-36.75	79.59	35.85	0
2,5,6	4	-35.72	79.6	35.86	0
Intercept	1	-39.15	80.31	36.57	0
5	2	-38.24	80.53	36.79	0
2,3	3	-37.43	80.95	37.21	0
2,3,5	4	-36.59	81.33	37.59	0
2,3,5,6	5	-35.62	81.48	37.73	0
2,3,6	4	-36.74	81.63	37.88	0

Probability of a cell being a stopover point on the northward migration

1,4	3	-45.86	97.81	0	0.14
1,4,5	4	-45.03	98.21	0.41	0.11
1,3,4	4	-45.18	98.51	0.71	0.09
1,2,4	4	-45.21	98.57	0.77	0.09
1,4,6	4	-45.38	98.93	1.12	0.08
1,3–5	5	-44.35	98.94	1.13	0.08
1,2,4,5	5	-44.39	99.01	1.2	0.07
1,4–6	5	-44.49	99.21	1.41	0.07
1,3,4,6	5	-45.06	100.4	2.55	0.04
1,2,4,6	5	-45.08	100.4	2.6	0.04
1–4	5	-45.1	100.4	2.63	0.04
1,3–6	6	-44.2	100.7	2.92	0.03
1,2,4–6	6	-44.22	100.8	2.97	0.03
1–5	6	-44.25	100.8	3.02	0.03
1–4,6	6	-44.96	102.3	4.45	0.01
1–6	7	-44.07	102.6	4.77	0.01
1,5	3	-48.74	103.6	5.76	0.01
1,3,5	4	-48.03	104.2	6.41	0.01
1,2,5	4	-48.05	104.3	6.45	0.01
1,5,6	4	-48.13	104.4	6.62	0
1,3,5,6	5	-47.82	105.9	8.07	0
1,2,5,6	5	-47.84	105.9	8.11	0
1,6	3	-49.91	105.9	8.11	0
1	2	-50.99	106	8.22	0

1–3,5	5	-47.99	106.2	8.42	0
1,3	3	-50.24	106.6	8.77	0
1,2	3	-50.28	106.7	8.84	0
1,3,6	4	-49.7	107.6	9.74	0
1,2,6	4	-49.72	107.6	9.79	0
1–3,5,6	6	-47.76	107.9	10.05	0
1,2,3	4	-50.17	108.5	10.69	0
1–3,6	5	-49.58	109.4	11.6	0
4–6	4	-58.23	124.6	26.82	0
4,6	3	-59.3	124.7	26.88	0
4,5	3	-59.8	125.7	27.89	0
4	2	-60.84	125.7	27.92	0
3–6	5	-58.22	126.7	28.86	0
3,4,6	4	-59.26	126.7	28.87	0
2,4–6	5	-58.23	126.7	28.89	0
2,4,6	4	-59.28	126.7	28.91	0
3,4	3	-60.32	126.7	28.93	0
3–5	4	-59.34	126.8	29.03	0
2,4	3	-60.39	126.9	29.08	0
2,4,5	4	-59.41	127	29.17	0
2–6	6	-57.34	127	29.21	0
2–4,6	5	-58.43	127.1	29.29	0
2–4	4	-59.66	127.5	29.66	0
2–5	5	-58.64	127.5	29.7	0
5,6	3	-65.06	136.2	38.41	0
5	2	-66.62	137.3	39.48	0
3,5,6	4	-65.04	138.2	40.43	0
2,5,6	4	-65.05	138.3	40.46	0
3,5	3	-66.19	138.5	40.67	0
2,5	3	-66.25	138.6	40.78	0
2,3,5,6	5	-64.35	138.9	41.14	0
2,3,5	4	-65.72	139.6	41.79	0
6	2	-68.83	141.7	43.9	0
Intercept	1	-70.59	143.2	45.39	0
2,6	3	-68.77	143.6	45.84	0
3,6	3	-68.8	143.7	45.89	0
2,3,6	4	-68.01	144.2	46.37	0
3	2	-70.45	144.9	47.14	0
2	2	-70.48	145	47.2	0
2,3	3	-69.97	146	48.23	0

*1, Sum of first-order neighbours; 2, waterholes abundant; 3, waterholes present; 4, mean enhanced vegetation index; 5, square of mean enhanced vegetation index; 6, mean % woody vegetation