GAME COUNTS IN NORTH-WEST NAMIBIA

Regional Summary

June 2018

Total Population Estimates

Species	Population estimate	Lower 95% CL	Upper 95% CL
Gemsbok (HN)	5,900	3,700	9,400
Kudu (HN)	730	380	1,400
Ostrich (U)	4,910	3,560	6,780
Springbok (HN)	59,750	44,130	80,900
Steenbok (HN)	4,240	2,870	6,270
Hartmann's Zebra (HN)	15,260	10,960	21,260

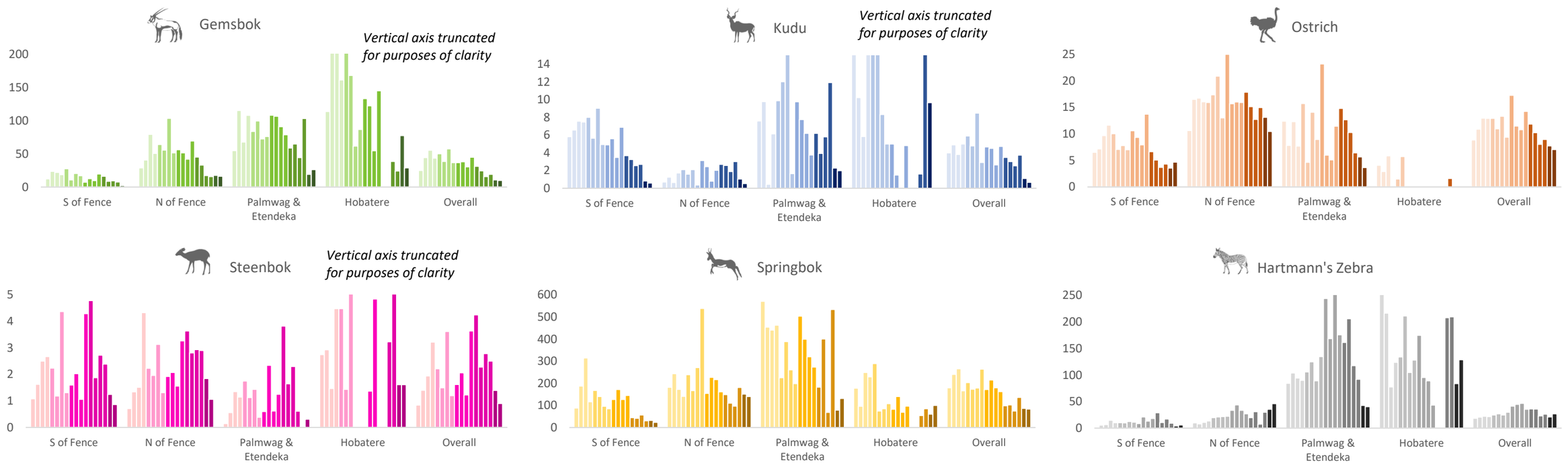
Estimates are derived using DISTANCE analysis which takes account of drop-off in detectability with distance from the transect line. They are conservative estimates as, on average,28 % of the count area is not sampled (due to inaccessibility) and is consequently assumed to hold no animals. Model selection: U = uniform; HN= half normal.

Count area: 6.9 million ha

Total number of animals seen each year

Species	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Baboon	108	116	203	135	555	165	567	239	310	390	172	510	548	192	334	667	302	356
Cheetah	5	1	7	7	14	2	4	7	6	3		5	3	11	5		6	1
Duiker	12	6	3	5	18	3	8		7	6	11	3	14	9	6	11	2	5
Eland	63	19		12	10	12	45	5	30		13	2		5	45	21	5	9
Elephant	40	24	45	17	107	5	36	44	72	31	73	39	34	74	64	41	94	31
Gemsbok	1,616	2,698	3,483	2,749	3,506	2,612	3,898	2,609	2,652	2,755	2,238	3,244	2,413	1,791	1,247	1,510	856	782
Giraffe	215	232	189	281	213	296	268	231	253	441	362	420	336	256	346	504	354	418
Hyaena	2			1	7		4	3	1	10	2	1	9	1	5	4	8	3
Jackal	45	84	60	82	78	94	108	59	81	119	68	91	104	83	89	87	86	51
Klipspringer	3	14	20	17	34	15	24	5	19	21	10	45	27	21	9	20	14	11
Kudu	189	297	241	316	413	324	576	207	337	327	190	329	269	221	200	296	88	53
Ostrich	577	659	815	817	903	741	902	666	1,247	832	772	1,027	911	752	630	706	610	545
Springbok	11,606	14,560	16,734	10,509	14,227	11,746	12,135	18,729	12,411	15,601	12,818	11,711	7,586	7,531	5,876	10,744	6,823	6,456
Steenbok	49	85	122	203	154	101	245	85	117	149	88	261	325	167	218	197	110	70
Warthog	6	14	8	7	13	11	13	2	2	3	6	8	12	3	8	4	5	4
H. Zebra	1,210	1,274	1,414	1,376	1,738	1,838	1,684	2,136	3,004	3,248	3,361	2,583	2,790	2,648	1,812	2,084	1,671	2,105

Trends - Number of animals per 100km (2001-2018)



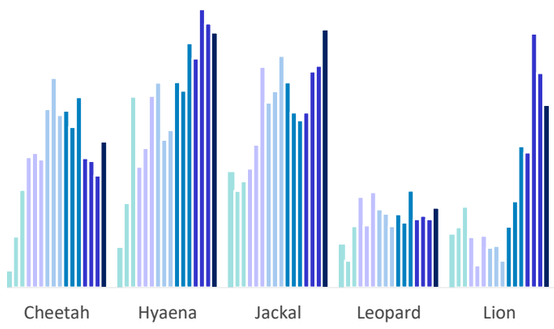
Synopsis

Wildlife populations in north-west Namibia were severely impacted in the 1980s by a combination of severe drought and poaching. Community conservation, formalised in 1996 through conservancies facilitated an increase in wildlife numbers through controlled utilisation and effective control of poaching.
These controlled offtakes, in balance with natural growth rates, resulted in stable or growing population trends for most species between 2003 and 2012. However, a subsequent prolonged dry phase, together with low level harvesting, has resulted in a steady decline in populations of many game species. Predator numbers have also increased over the past 15 years contributing to recent wildlife declines. In response to the decline in numbers, harvesting through controlled hunting has been reduced since 2014 and only very limited hunting will be permitted after 2018 to enable populations to recover.

The North-west comprises 4 distinct sub-areas: conservancies south of the veterinary fence, conservancies north of the fence and the concession areas (where no utilisation is permitted) of Palmwag & Etendeka and Hobatere. There are clear differences in animal density between these areas with the concessions areas having highest densities and the southern area having the lowest.

Species	Estimates by sub-area			
	South of Vet. Fence	North of Vet. Fence	Palmwag & Etendeka	Hobatere
Gemsbok	601	3,680	1,534	82
Kudu	393	137	196	0
Ostrich	2,012	2,647	253	0
Springbok	8,275	36,952	14,008	517
Steenbok	2,104	1,981	127	32
H. Zebra	2,584	9,994	2,345	341

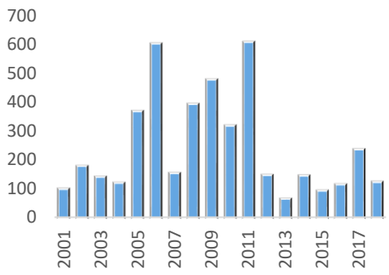
Predator sighting index 2002-2017

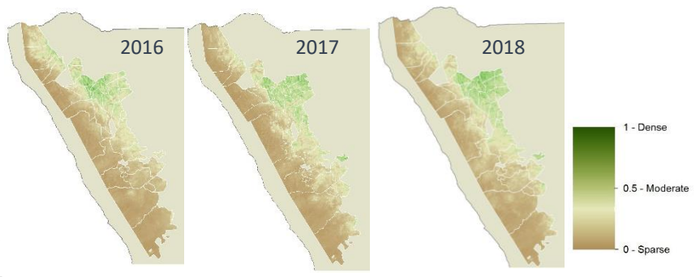


Harvesting offtake

Species	Animals			
	2014	2015	2016	2017
Gemsbok	572	208	163	131
Giraffe	16	9	6	11
Jackal	14	5	15	12
Klipspringer	5	5	7	5
Kudu	120	49	91	86
Ostrich	95	75	100	55
Springbok	1727	821	768	719
Steenbok	8	3	13	3
H. Zebra	350	288	150	234

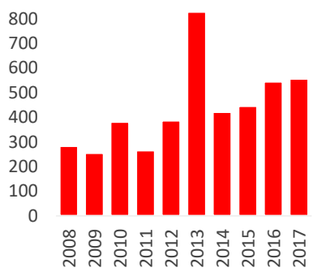
Average rainfall (mm)





NDVI is a measure of the density of chlorophyll in vegetation cover. It can be used as an indicator of the amount of biomass available to wildlife. The maps here show the average values for Feb-Apr in the two previous game count years and Mar-May in the current year.

Mortalities: number of animals



Differences in population trends are also evident between sub-areas. In conservancies north of the veterinary fence populations of commonly utilised species (with the exception of kudu) have stabilised or have shown upward trends. In the conservancies south of the veterinary fence there is cause for concern as populations of several key species (Gemsbok, Kudu, Hartmann's zebra) are at very low levels or show continuing declines. Of great concern is the kudu population which shows a marked decline everywhere.

The concession areas of Palmwag and Etendeka (which represent only slightly more than 9% of the region) are important natural refuges for many wildlife species, containing an estimated 32%, 26% and 17% of the region's springbok, gemsbok and Hartmann's zebra respectively. Trends in these areas often show radical spikes between years reflecting animal movements within the concessions and eastward or westward movements between concessions, conservancies and freehold land. Many animals may also be missed due to under-sampling in counts; 43% of the area is excluded.

Estimates for the 4 sub-areas are indicated opposite. There is also a poster available for each sub-area, depicting trends, sightings and wildlife estimates in these areas.

Animals seen(*) during this count and minimum estimates (**)

	Total	!Khoro !Goreb	#Khoadi //Hôas	Anabeb	//Audi	Doro !Nawas & Uibasen Twyfelfontein	Ehi-Rovipuka	Etendeka	#Gaingu	Hobatere	//Huab	Marienfluss	Ohungu	Okangundumba	Okondjombo	Omatendeka	Ombujokanguindi	Ongongo	Orupembe	Orupupa	Otjambangu	Otjikondavirongo	Otjimboyo	Otjiu-west	Otuzemba	Ozondundu	Palmwag	Puros	Sanitatas	Sesfontein	Sorris sorris	Torra	Tsiseb
Total Route km	**7,818**	117	465	207	40	528	269	95	709	62	413	278	186	138	194	210	161	75	304	207	58	130	102	90	107	90	558	309	165	244	216	524	567
Total area (km2)	**69,489**	1,337	3,358	1,636	335	4,137	1,979	633	7,756	258	2,129	3,034	1,245	1,130	1,643	1,613	657	619	2,616	1,775	348	1,067	432	1,208	741	743	5,891	3,564	1,446	2,469	2,290	3,492	7,908
Number of routes	**154**	4	9	5	2	9	5	3	10	3	8	5	3	3	4	4	3	4	6	3	1	4	2	2	3	2	11	6	4	6	4	8	8
% area excluded	**28**	30	45	51		6	28	44	17	5	4	28	14	29	16	48	26	53	10	44	74	58	30	71	26	55	43	31	28	42	18	25	16
NDVI Difference (%) (***)		-18.3	-15	1.5	-5	-0.8	-10	-14.7	-25.3	-11.5	-16.8	-9.7	-18.8	-8.1	-11.2	-10.5	-9.9	-20.2	-3	-10.2	-11.1	-18.1	-29	-15.2	0.6	-6.5	-8.6	-4.6	-10.6	-7.7	-20.8	-7.7	-16.6
Average Rainfall (mm)		248	272	174	351	67	342	157	32	303	192	99	135	281	141	243	224	369	105	2018	210	137	73	287	369	240	45	70	117	75	84	46	43
Species																																	
Gemsbok			**29**	**9**		**13**		**49**		**18**		**151**							**22**								**122**	**6**	**81**	**74**	**2**	**8**	
			62	38		25		244		37		84							1,817								767	45	62	541	13	38	
Giraffe			**49**	**35**		**2**	**54**	**79**		**13**		**4**				**6**	**63**			**9**	**1**		**14**			**6**		**28**	**8**	**11**	**7**		**27**	**2**
			21	7		4	18	158		44		8				12	126			18	6		28			12		52	16	22	12		5	4
Kudu			**9**		**2**	**3**	**4**	**11**			**6**												**4**			**3**		**2**		**7**		**2**		
			33		17	25	28	37			26															8		5		37		18		
Ostrich			**8**	**1**		**41**	**5**		**8**		**1**	**27**	**4**	**17**	**33**	**2**	**9**	**14**	**73**	**14**	**19**	**9**	**13**	**13**	**2**	**6**	**24**	**12**	**32**	**32**	**6**	**11**	**82**
			41	33		15	46		11		6	211	23	96	219	8	33	5	579	81	29	25	69	56	1	22	122	81	238	16	47	53	937
Springbok			**159**	**42**		**85**	**68**	**455**	**31**	**62**	**5**	**82**	**4**	**78**	**38**	**583**	**6**	**22**	**785**	**16**	**25**	**58**	**71**	**39**		**25**	**404**	**221**	**1418**	**156**	**19**	**435**	**65**
			646	1,136		388	251	1,415	255	174	3	561	23	445	571	719	167	8	389	18	287	168	379	181		72	3,214	522	2,428	487	16	816	74
Steenbok		**2**	**12**				**2**	**1**	**1**	**1**	**7**		**2**	**8**	**1**	**1**	**9**	**4**		**5**	**1**		**3**		**2**	**2**	**1**				**5**		
		17	51				18	4	7	2	26		11	47	8	4	24	15		31	2		6		8	8	2				45		
Hartmann's Zebra			**45**	**32**	**14**	**58**	**9**	**97**	**38**	**80**	**2**	**129**				**123**	**123**			**74**			**14**				**16**	**169**	**167**	**487**	**67**	**5**	**33**	**17**
			116	118	118	21	23	633	215	246	51	776			121	513			439			29				46	977	1,347	2,693	272	33	165	29

(*) Values in bold are numbers of animals seen along transects.

(**) Values shaded yellow are minimum estimates assuming all animals within 500m on each side of the transect line are detected i.e. there is no adjustment for drop off in detection with distance from the transect line. In addition, for springbok, gemsbok and giraffe, large groups were excluded from extrapolations and added afterwards. The sum of these values will be significantly lower than the totals indicated in the top left table as the total estimates take account of species detection curves.

(***) NDVI is a measure of 'greenness' or biomass cover. The value presented is the % difference between the current year and the long term average (2003-17). A negative value (red or orange) indicates there was less biomass cover than average while a positive value (green) indicates there was more cover.