GAME COUNTS IN NORTH-WEST NAMIBIA

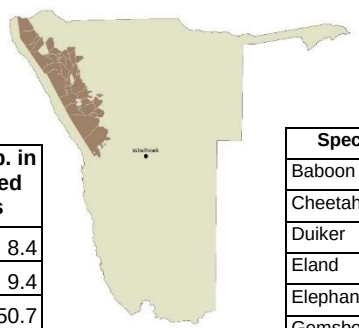
June 2014

Total Population Estimates

Species	Population Estimate	Lower 95% CL	Upper 95% CL	% of pop. in excluded areas
Gemsbok (HN)	17,627	12,294	25,490	8.4
Giraffe (U)	963	-	-	9.4
Kudu (U)	2,545	1,429	4,533	50.7
Ostrich (HN)	7,955	5,687	11,129	0.4
Springbok (HN)	79,364	59,880	105,190	9.3
Steenbok (HN)	11,858	8,214	17,120	unknown
Mt. Zebra (U)	20,133	13,773	29,429	16.4

Model selection: U = Uniform cosine, HN = Half normal cosine

All estimates are derived using DISTANCE analysis. Estimates for individual conservancies (below) are based on the use of Effective Strip Widths (ESWs) for each species. Although total estimates derived from individual conservancies will be similar to regional total estimates (above), they will not be equal. All population estimates are conservative estimates as, on average, 30% of the count area is not sampled (due to inaccessibility) and is consequently assumed to hold no animals. The right-hand column shows the estimated % of animals in the excluded areas (from aerial survey data).

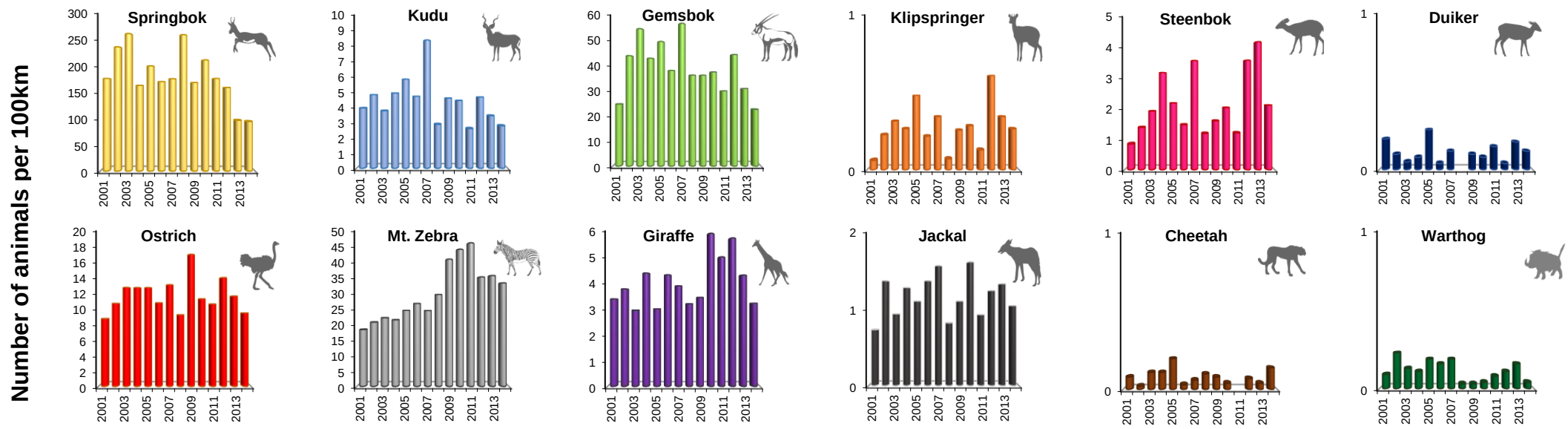


Count area: 7 million ha

Total number of animals seen each year

Species	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Baboon	108	116	203	135	555	165	567	239	310	390	172	510	548	192
Cheetah	5	1	7	7	14	2	4	7	6	3		5	3	11
Duiker	12	6	3	5	18	3	8		7	6	11	3	14	9
Eland	63	19		12	10	12	45	5	30		13	2		5
Elephant	40	24	45	17	107	5	36	44	72	31	73	39	34	74
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
Giraffe	215	232	189	281	213	296	268	231	253	441	362	420	336	256
Hyaena	2			1	7		4	3	1	10	2	1	9	1
Jackal	45	84	60	82	78	94	108	59	81	119	68	91	104	83
Klipspringer	3	14	20	17	34	15	24	5	19	21	10	45	27	21
Kudu	189	297	241	316	413	324	576	207	337	327	190	329	269	221
Ostrich	577	659	815	817	903	741	902	666	1,247	832	772	1,027	911	752
Rhino	1	1	7	2	9	2	9	6	3	4	3	10	8	9
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
Steenbok	49	85	122	203	154	101	245	85	117	149	88	261	326	167
Warthog	6	14	8	7	13	11	13	2	2	3	6	8	12	3
Mt. 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

Trends



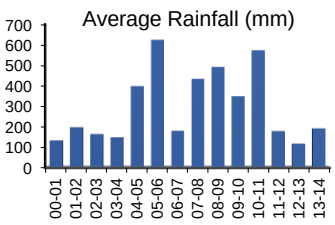
Synopsis

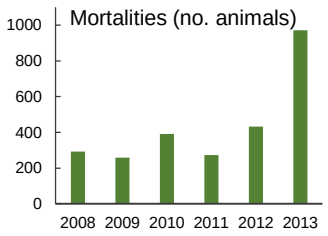
Wildlife populations in north-west Namibia have increased dramatically from all-time lows in the 1980s caused by a combination of severe drought and poaching. Community conservation, formalised in 1996 through conservancies, facilitated this increase through effective control of poaching and the foregoing of hunting by local people. In the mid 2000s controlled utilisation began as a reward to communities for their conservation efforts and to begin to slow the increase in wildlife numbers in the face of anticipated drought episodes characteristic of hyper-arid environments.

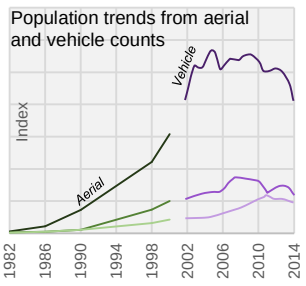
These offtakes, in balance with natural growth rates, resulted in the stable population trends for most species (except zebra) between 2003 and 2011/2 (see graphs).

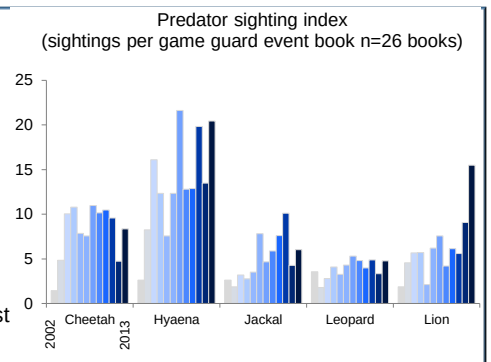
The 2014 count has alerted us to the fact that several species have experienced recent declines
(i) Is this cause for concern?
(ii) What has caused the declines?
Springbok and gemsbok appear to now be at approximately 50% of all-time highs, with Zebra at approximately 80%. Whilst noteworthy, these declines are not yet of major concern as the species are respectively still some 800%, 600% and 300% greater in number than they were in the 1980s.

Over-harvesting could be one cause, but official offtakes indicate that these have been extremely small. Drought has probably had some effect as reflected by the increase in natural mortalities in 2013. Predator numbers have also increased throughout the north-west The declines are therefore probably caused by a combination of all of these factors.

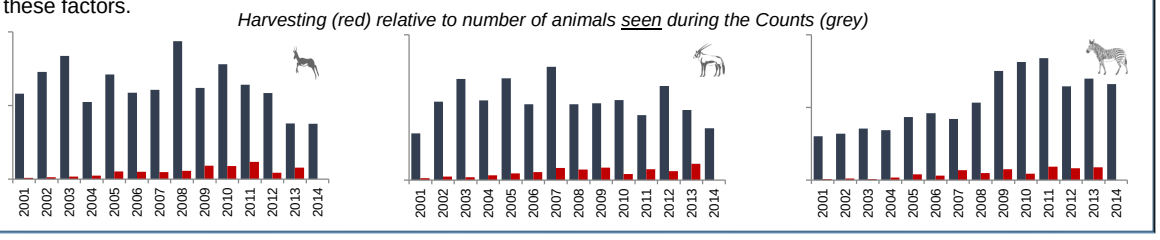








Harvesting (red) relative to number of animals seen during the Counts (grey)



Animals seen and 3-year average population estimates for conservancies:

	Total	!Khoro !Goreb	#Khoadi-//Hoas	Anabeb	//Audi	Doro !Nawas & Uibasen Twyfelfontein	Ehi-rovipuka	Etendeka	#Gaingu	//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
Route km	**7,820**	115	301	215	40	475	270	60	645	413	312	145	148	189	214	164	87	319	189	46	117	64	87	101	90	548	324	135	309	204	910	585
Area (km2)	**70,936**	1,337	3,358	1,636	335	4,137	1,979	507	7,756	2,129	3,034	1,245	1,130	1,643	1,613	1,157	501	3,568	2,272	348	1,067	432	1,208	741	743	5,891	3,564	1,446	2,469	2,290	3,492	7,908
No. of routes	**155**	4	9	5	2	9	5	3	10	8	6	3	3	4	4	3	5	6	3	1	4	2	2	3	2	11	6	4	8	4	8	8
% excluded	**30**	45	45	51	0	6	28	55	17	4	28	14	29	16	48	50	34	34	56	74	58	30	71	26	55	43	31	28	42	18	25	16
Species																																
Gemsbok			31	67		57	3	49		6	308			81	13			330							2	345	77	207	13	5	164	33
			(150)	(157)		(678)	(73)	(267)		(34)	(4,119)			(769)	(77)			(3,639)	(11)	(3)		(4)			(2)	(1,769)	(1,081)	(792)	(729)	(65)	(1,644)	(223)
			238	**250**		**1,077**	**117**	**425**		**54**	**6,548**			**1,223**	**123**			**5,787**	**18**	**4**		**6**			**3**	**2,812**	**1,719**	**1,259**	**1,159**	**104**	**2,615**	**355**
Giraffe			19	5		5	36	28			1			7	27			4						1		35	31	14	26	3	14	
			(129)	(21)		(14)	(146)	(46)			(7)			(18)	(62)			(19)	(12)		(11)	(1)		(1)	(3)	(87)	(69)	(17)	(57)	(19)	(47)	
			191	**30**		**21**	**215**	**68**			**10**			**27**	**91**			**29**	**18**		**16**	**1**		**1**	**4**	**128**	**101**	**25**	**84**	**28**	**68**	
Kudu	4		57	21		1	13		8	8			9	2			1		5					13	22	24					33	
	(23)		(336)	(52)	(12)	(15)	(40)	(25)	(38)	(196)		(9)	(36)	(17)	(17)		(4)	(16)	(39)	(6)		(1)		(25)	(46)	(61)	(12)	(2)	(6)	(3)	(191)	
	52		**763**	**117**	**27**	**34**	**90**	**57**	**87**	**445**		**21**	**82**	**38**	**39**		**9**	**36**	**89**	**14**		**3**		**58**	**105**	**139**	**27**	**4**	**14**	**7**	**434**	
Ostrich			22	7		24	3	2	7	6	66	3	26	40	22	14	20	54	17	23	8	1	5	7	4	75	81	26	79	39	10	61
			(71)	(51)		(238)	(28)	(6)	(126)	(66)	(226)	(69)	(151)	(373)	(113)	(118)	(79)	(474)	(199)	(35)	(23)	(105)	(17)	(14)	(13)	(497)	(794)	(114)	(238)	(344)	(433)	(755)
			135	**98**		**455**	**54**	**11**	**240**	**127**	**431**	**132**	**289**	**712**	**215**	**226**	**150**	**906**	**380**	**68**	**45**	**200**	**33**	**27**	**24**	**950**	**1,515**	**218**	**454**	**657**	**828**	**1,443**
Springbok	18		63	325		551	49	954	165	16	612	20	150	121	1,274	98	56	291	74	126	35		20		24	1,481	56	132	219	93	313	195
	(110)		(1,017)	(1,658)		(1,701)	(632)	(2,934)	(2,692)	(286)	(3,064)	(1,649)	(1,322)	(1,762)	(2,026)	(649)	(214)	(2,777)	(371)	(230)	(343)	(232)	(95)		(66)	(4,237)	(733)	(1,062)	(1,410)	(1,339)	(2,348)	(1,974)
	253		**2,330**	**3,796**		**3,895**	**1,447**	**6,719**	**6,165**	**654**	**7,016**	**3,775**	**3,028**	**4,035**	**4,638**	**1,486**	**490**	**6,360**	**850**	**526**	**787**	**530**	**218**		**151**	**9,702**	**1,678**	**2,433**	**3,228**	**3,067**	**5,376**	**4,521**
Steenbok	8		14		1		8	3	4	11		6	14		4	7	2	4	18	1	6	3		7	16	7	4		2	8	3	6
	(48)		(160)	(5)	(4)	(23)	(52)	(17)	(253)	(91)	(10)	(63)	(66)	(48)	(46)	(12)	(8)	(45)	(107)	(5)	(16)	(31)		(18)	(36)	(38)	(15)	(10)	(14)	(127)	(48)	(157)
	581		**1,928**	**56**	**51**	**279**	**626**	**202**	**3,051**	**1,098**	**120**	**759**	**800**	**584**	**555**	**147**	**92**	**540**	**1,289**	**64**	**189**	**373**		**220**	**437**	**466**	**180**	**119**	**170**	**1,537**	**586**	**1,903**
Mt. Zebra			32	192		131	101	196		16	21			206	10			148	5					10	20	1,057	78	185	52		152	36
			(483)	(419)		(877)	(344)	(463)	(27)	(78)	(71)		(4)	(1,957)	(104)			(471)	(10)					(18)	(19)	(5,486)	(242)	(607)	(261)	(28)	(1,769)	(490)
			618	**535**		**1,122**	**440**	**592**	**34**	**99**	**91**		**5**	**2,505**	**133**			**603**	**12**					**23**	**25**	**7,022**	**310**	**777**	**334**	**36**	**2,265**	**628**

The first row for each species is the number of animals seen during the count. The second row (in brackets) is the minimum estimate assuming all animals within 500m on each side of the transect line are detected. The third row (bold) is the likely estimate calculated using effective strip widths (ESW) for each species. This takes account of drop off in detection of animals with distance from the transect line. With estimates for springbok, gemsbok and giraffe, large groups were excluded from extrapolations and added afterwards. All conservancy estimates should be regarded as rough approximations and great care should be taken when using these data for quota setting.