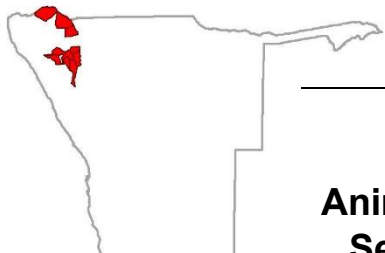
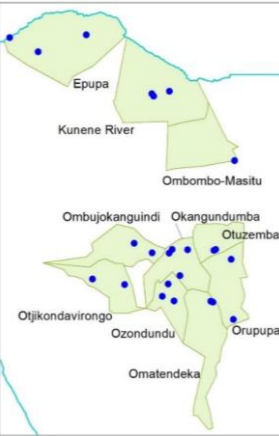


FULL MOON WATERHOLE COUNTS IN NORTHERN KUNENE

2023



Primary count focus:
To derive estimates for two species:
Elephant
Black-faced impala
These species are not well represented in vehicle transect counts.



Animals Seen	Kunene River		Okangundumba					Ombujokanguindi		Orupupa		Ozondundu			Otuzemba				Omatendeka				Ojikondavirongo		Ombombo Masitu		Epupa			Ojambangu	Total								
	Ehomba	Okombine	Epunguwe	Okahua	Omao	Omunuandjai	Ojijite	Okapangekua	Okatumba Dam	Okaturukira	Ojiondeka	Okarumbu	Okomuhana	Ojomatamba	Okarindi Kamutat	Okatuzembona	Omkungu	Ojikongo	Okavanje	Okavare	Okondundu	Ojomumbonde	Okoondjupa	Ojijiteue	Okozongupa	Ombombo	Etambue	Okuu	Ojomazeva	Ojiuore									
Count days	3	3	3	3	3	3	3	3	3					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		3							
Baboon								130		10					180			89					97	51	60	25	45	32					27	754					
Black-face impala	8	554						51		50	1				261	73	7					46		43	13		5						120	15	11	1258			
Brown Hyena																									1										1				
Caracal								1																											1				
Cheetah																																			4	6			
Dik Dik	1							7							1												2	1						6	10	31			
Duiker	6	3						2							1																				5	2	38		
Eland																					10																10	73	
Elephant																					28															261	2	487	
Gemsbok																																					6	125	
Giraffe																																					34	243	
Hyaena																					1																1	2	
Jackal																					2																2	2	
Klipspringer																																					2	23	
Kudu	35	132																			9																9	1286	
Leopard																																						1	5
Lion																																						1	5
Ostrich																																						10	132
Scrub hare																																						2	12
Springbok																																						2	785
Steenbok																																						1	30
Vervet Monkey																																						64	64
Warthog																																						15	32
Zebra, Burchell's																																						24	86
Zebra, Hartmann's																																						24	1967

Waterhole Estimates

Last 5 years

Overall	2023	2022	2021	2020	2019
Focal Species					
Black-faced impala	839	703	748	977	740
Elephant	293	316	266	147	121
Other species					
Eland	97	172	35	46	40
Gemsbok	167	125	12	92	47
Giraffe	323	237	51	153	144
Kudu	859	393	591	788	712
Ostrich	174	159	95	219	149
Springbok	1,047	871	124	1331	701
Zebra, Hartmann's	1,310	1,223	888	999	831

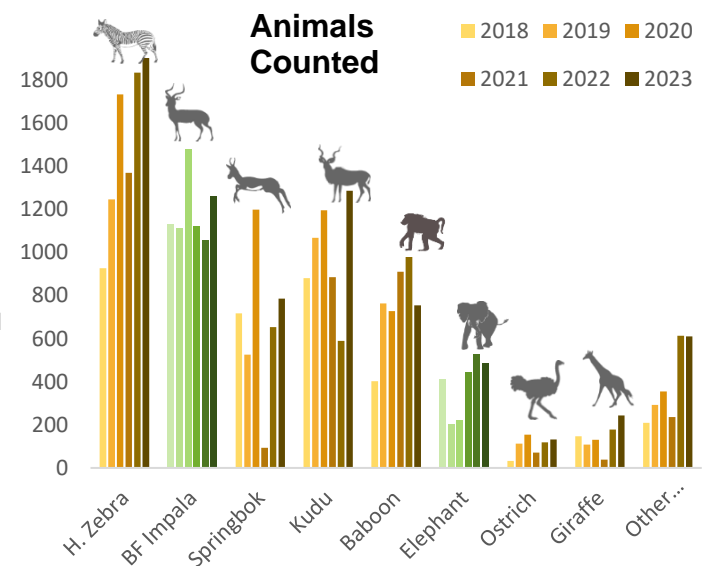
Seen in Transects

Waterhole counts were undertaken at selected sites in the escarpment zone of north-west Namibia. In 2018, 18 waterholes in 7 conservancies were counted but from 2019 onwards, the number of waterholes was increased to more than 25 covering 11 conservancies. Counts were undertaken over a period of 2, 3 or 4 days during which time all animals seen were counted.

Game species differ in the frequency with which they need to visit water resources with some able to acquire much of their hydration needs through foraging. Waterhole counts are therefore best suited to species (like elephants) which need to make regular trips to water points.

Estimates are calculated using the number of count days, and the drinking frequency of the species. They are crude estimates and should be considered a guide to the relative abundance of animals in the area. Values are influenced by several assumptions including drinking frequencies and independence of sightings.

Of interest is the high number of kudu and Hartmann's zebra at waterholes compared with transect counts (left). These animals are clearly present but not well covered by transect routes. In contrast, much lower numbers of gemsbok were seen in both waterhole and transect counts.



Using assumed drinking frequencies of 2 days for black-faced impala and 1.8 days for elephants, we obtain the following average estimates (over the five years 2019-2023): **Black-face impala 801**; **Elephant 229**.

Waterhole Estimates

(by conservancy)

DF = drinking frequency	Kunene River				Ombujokanguindi				Okangundumba				Ozondundu				Otuzemba				Orupupa				Omatendeka				Ojikondavirongo				Ojambangu		Ombombo-Masitu				Epupa											
	2023	2022	2021	2020	2023	2022	2021	2020	2023	2022	2021	2020	2023	2022	2021	2020	2023	2022	2021	2020	2023	2022	2021	2020	2023	2022	2021	2020	2023	2022	2023	2022	2021	2020	2023	2022	2021	2020												
Focal Species																																																		
Black-faced impala	2	374	222	276	273	34	39	54	48					1				228	224	268	103	34	66	68	90	69	41	53	32	3	3	3												97	107	26	431			
Elephant	1.8									175	194	83	45	13	2	58	13	21	58		1	32	32	34	65	19															39	37	91	9						
Other species																																																		
Eland	4									13				3	15	20	8			28	3				1	12	19	57	128														24							
Gemsbok	4																																												8	28				
Giraffe	4	45	6	39	9					4		7																																	5					
Kudu	2	111	32	19	66	40	27	34	89	8				26	41	30	84	215	111	155	133	254	90	324	267	73	31	13	42	5	5	1	17	39	46	67	5	15	41	21	5		47							
Ostrich	4					36				105	26	18	19	18	26	15	40	44	20	9	19	17	20	61	17	16	30	16																	16	40				
Springbok	4			4		16				252	55	115	97	113				15	12	9					12	23	51	831	668	887	1			13	120	79														
Zebra, H.	2	1			4																																													

The waterholes counted each year varied in some conservancies.

Distribution (of a selection of species)

Numbers seen: Low ● → High ●

