

# GAME COUNTS IN NORTH-WEST NAMIBIA

## Palmwag and Etendeka Concessions

May 2022

### Total Population Estimates

Species	Population estimate	Lower 95% CL	Upper 95% CL
Gemsbok (U)	306	108	871
Kudu (U)	40	6	268
Ostrich (U)	189	68	527
Springbok (HN)	4,492	2,015	10,015
Steenbok (HN)	213	36	1,263
Hartmann's Zebra (U)	471	108	2,063

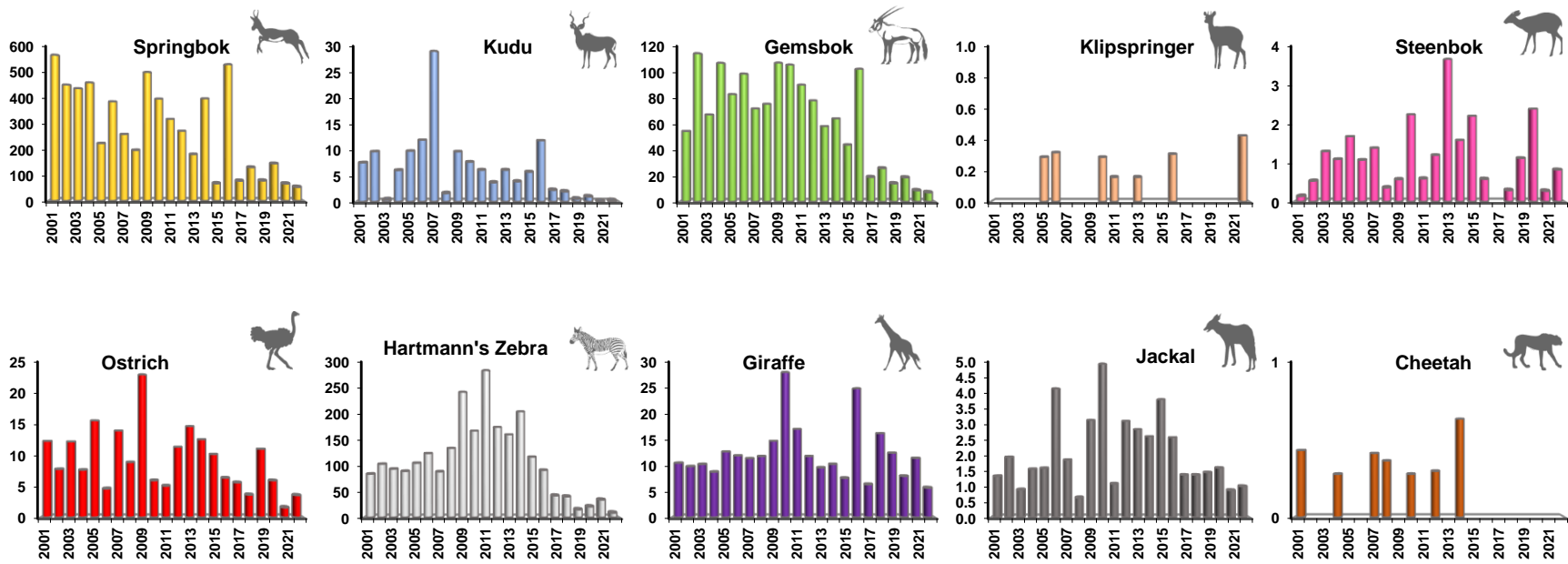


### Total number of animals seen each year

Species	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Baboon				3	66		95		28	37	32	54	70	23	24	27	8	104	10		11	29
Cheetah	3			2			3	3			2		2	4								
Eland														3					12			
Elephant	3		19	7	16		3	9	15	1	17	23	20	15	28	2	6		42	3	27	15
Gemsbok	368	825	452	756	575	620	505	595	719	728	587	503	370	394	290	675	126	171	98	130	61	51
Giraffe	71	71	69	62	88	75	80	93	99	193	111	76	61	63	50	164	42	107	86	55	79	40
Hyaena	1						1			6	1				5	2	5	2	2	1	1	
Jackal	9	14	6	11	11	26	13	5	21	34	7	20	18	16	25	17	9	9	10	11	6	7
Klipspringer					2	2					2	1	1				2					3
Kudu	51	70	3	43	68	75	204	13	65	53	40	24	39	24	38	78	15	13	4	7	1	2
Ostrich	83	56	82	54	108	29	98	70	154	41	33	73	93	77	67	42	37	24	76	41	11	25
Springbok	3,822	3,248	2,933	3,241	1,550	2,421	1,819	1,553	3,349	2,730	2,067	1,747	1,149	2,435	448	3,487	515	859	545	1,002	464	380
Steenbok	1	4	9	8	12	7	10	3	4	16	4	8	24	10	15	4		2	8	17	2	6
H. Zebra	567	744	629	631	728	777	621	1,054	1,623	1,152	1,845	1,122	1,016	1,253	770	602	279	266	107	146	237	64

All above estimates are derived using DISTANCE analysis. This takes account of drop off in detection with distance from the transect line. They are conservative estimates as 43% of the count area is not sampled (due to inaccessibility) and is consequently assumed to hold no animals. Model selection: U = uniform key; HN = half normal

### Trends- Number of animals per 100km



### Animals seen during this count and minimum estimates

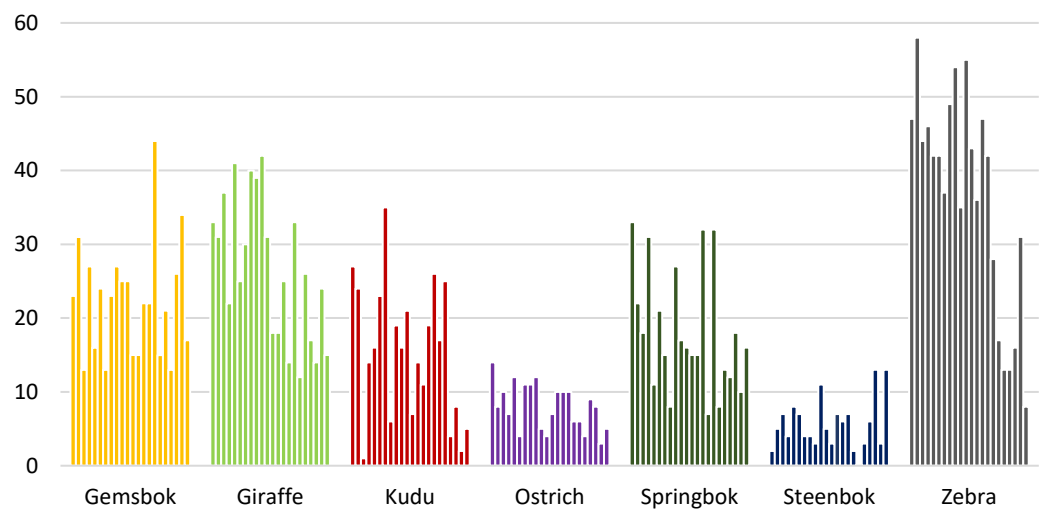
	Total	Etendeka	Palmwag
Total Route km	684	135	549
Total area (km <sup>2</sup> )	6,524	633	5,891
Number of routes	14	3	11
% area excluded	43	44	43

Species	Etendeka	Palmwag
Gemsbok	25 (62)	26 (55)
Giraffe	12 (24)	28 (56)
Kudu	2 (17)	
Ostrich		25 (151)
Springbok	78 (237)	302 (1,118)
Steenbok		6 (13)
Hartmann's Zebra	56 (170)	8 (42)

Values without brackets are numbers of animals seen along transects. Values inside brackets 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.

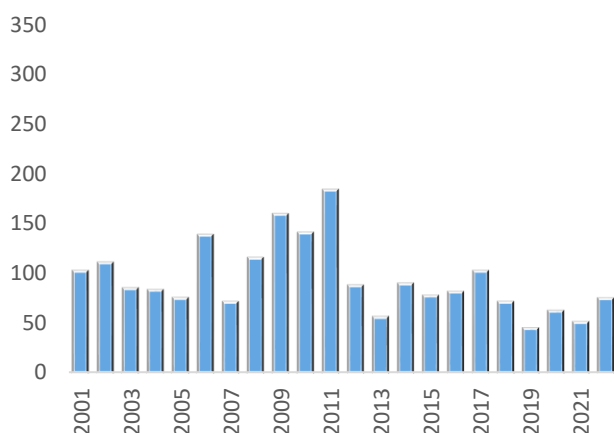
### Percentage of all animals counted in the NW: 2001-2022



The Palmwag and Etendeka concession areas are important refuges for at least five of the main game species. The contrast in trends between kudu and gemsbok is noteworthy. While gemsbok numbers have declined dramatically throughout the entire north-west region, the contribution of the concessions has spiked in recent years. With kudu the contribution of concessions to numbers has dropped dramatically in the same period suggesting a different causal mechanism for the decline in numbers of the two species. With gemsbok the decline in animals in the north-west is more a result of severe losses from communal areas. With kudu the drop in the proportion of animals in these two concessions may reflect eastward movements in years of poor browse or be indicative of a more general decline across the area.

### Rainfall

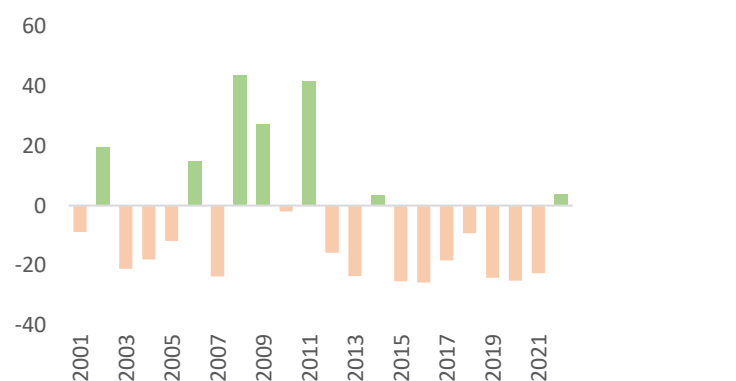
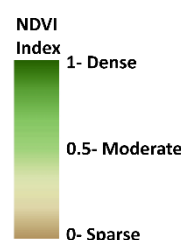
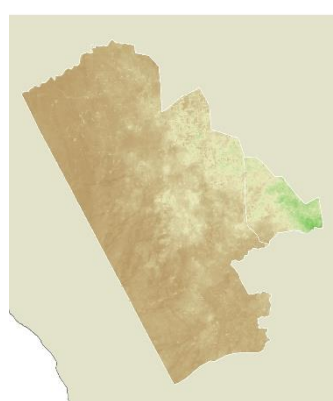
Average rainfall (mm)



The rainfall season is from July to June and values are an average for the whole area.

### Vegetation

NDVI - percentage difference from long term mean



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 map shows the NDVI status in the current year (Feb-Apr) and the trend indicates the average deviation of the concession areas from the long-term mean, in each year.