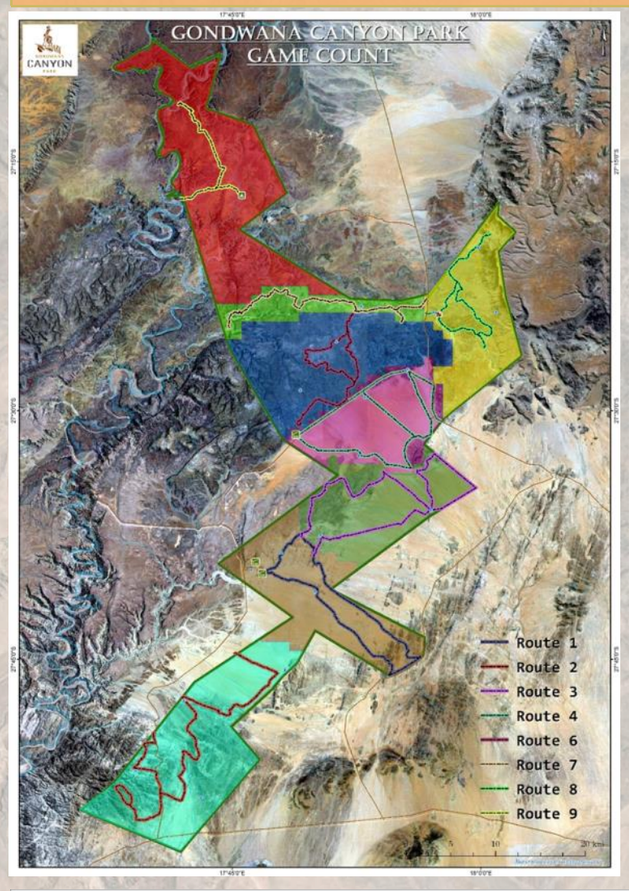
Gondwana Canyon Park
Game Count 2020

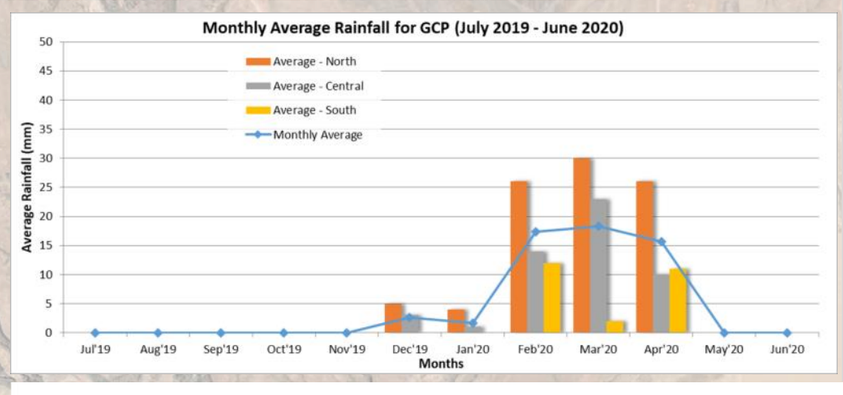
Introduction

Rainfall is the most dominant driving force for animal movement, survival and reproduction in this vast semi-arid landscape. The park's size (116,000ha) and open boarders to the Ai Ais Game Park (east of GCP) allows for animal migration to better veld conditions and water availability.

The preceding rainfall season started later with the first significant rainfall received in February 2020. The rainfall, although relatively low, stayed consistent for February through March allowing for good grass growth. This together with good park management interventions such as the selective closing of certain waterholes and game harvesting operations in selected areas in order to move animals to different areas of the park has helped the central plains of the park to recover after several years of drought high impact grazing.

The year's results show a significant decrease in animals counted (-37%) and overall population estimate (-19%). The game harvesting operations done in the preceding year would have contributed to the lower game numbers.
The northern sections of the park (zone 6, 7, 8 and 9) received the most rain and thus an overwhelming majority (53%) of the animals were counted in this area.
For the first time in 8 years the park's modelled carrying capacity is higher than the total grazer biomass (stocking rate).





Count Methodology

The primary objectives of the game count is to determine the density and distribution of game, and to estimate the total number of game in a given — or the total — area. For this reason, the survey methodology used is a combination of the road strip census and the game distribution maps technique. In layman's terms, these can be explained as follows:

Road-Strip count:

The total area is divided into (8) game count zones, each with its own standardized route. The game count zones were, as far as possible, deliberately predetermined into homogenous habitats because the visibility of animals differs in each habitat. Each route forms a strip transect through its zone within which the animals are counted. During the count, all animals on either side of the road are recorded, and the distances (at right angles to the vehicle and road) from the road to the animal or group of animals are recorded.

The respective area and species correction-factors are then used to calculate the population estimates from the total counted per zone.

Game distribution maps

In order to determine and show the distribution and density of game in the various zones of the count area, monad grids are used to map the locality of the animals counted. Each route is supplied with a map containing the monads, with reference numbers, of the zone in which that route is set.

Game numbers in 2019		
Species	**No. Counted**	**Est 2019**
Gemsbok	637	2298
Springbok	495	2148
M Zebra	214	756
Ostrich	85	252
Hartebeest	27	91
Kudu	50	268
Klipspringer	38	285
Steenbok	8	134
Plains zebra	48	91
Bl Wildebeest	40	100
Total	**1642**	**6423**

Game numbers in 2020		
Species	**No. Counted**	**Est 2020**
Gemsbok	187	958
Springbok	568	2701
M Zebra	163	608
Ostrich	34	119
Hartebeest	0	0
Kudu	39	334
Klipspringer	25	193
Steenbok	12	260
Plains zebra	14	31
B Wildebeest	0	0
Total	**1042**	**5204**
	-37%	**-19%**

Objectives of the game count

Objective 1: Population and biomass estimates

The population estimates for individual species in the total count area are derived from the actual number of animals seen during the count, and the relevant species and area correction-factors that are applied to that number. The actual numbers seen are multiplied by the relevant area and species correction-factors to get the population estimates.

Formula for calculating population estimates
(S x A) x B=P

S = Actual number of animals seen
A = Area correction-factor
B = Species correction-factor
P = Population estimate

Population estimates are then multiplied by the mean weight of the individual species and divided by the total count area (ha) to get the estimated biomass per species. These Biomass estimates are important in terms of managing habitat conditions and inter-species competition.

Formula for calculating biomass estimates
(E x M) ÷ H = B

E = Estimated wildlife numbers
M = Mean mass per species
H = Total no. of hectares
B = Biomass estimate

Objective 2: Wildlife density and distribution

For resource management purposes we use the wildlife density and distribution results instead of the population estimates, as these give a better reflection of where the animals are and how densely populated each count zone is.

To calculate the population density, the actual number of animals per species counted in each zone is divided by the respective route length and then multiplied by 100 to get the number of animals seen per 100km.

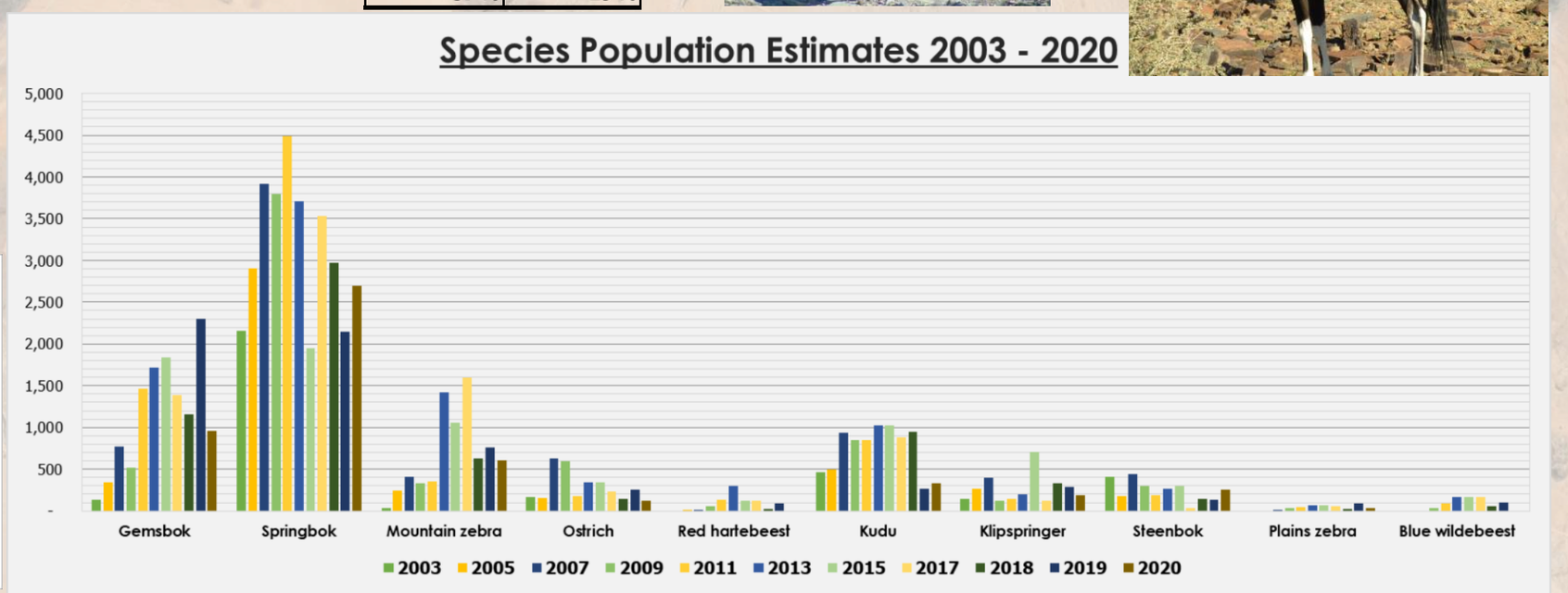
Formula for calculating wildlife density
(S ÷ R) x 100 = K

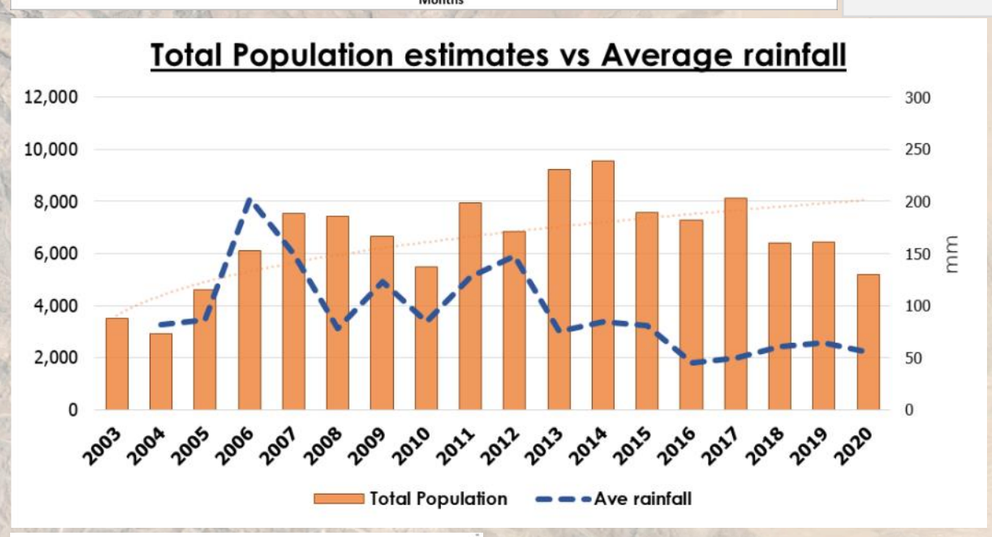
S = Actual number of animals seen
R = Length of route

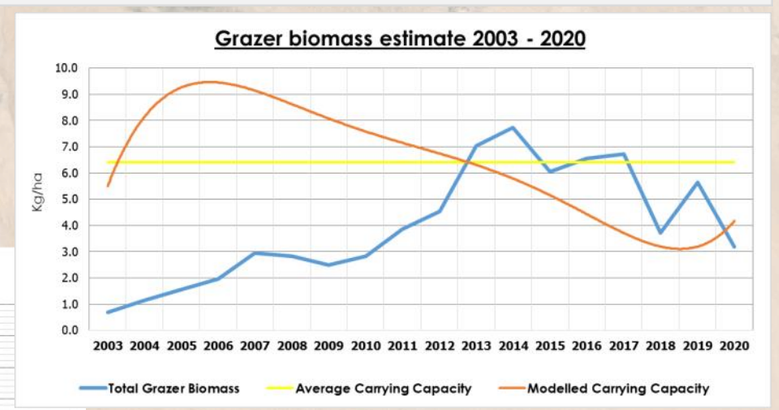
Wildlife distribution is based on the amount of animals seen in each monad. During the game count, each sighting is marked to the corresponding monad the animal(s) were seen in. That da-

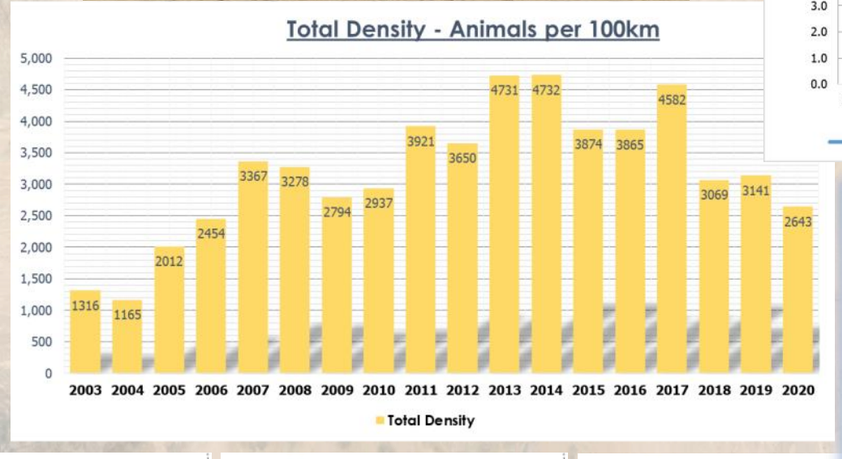
Objective 3: Population change

The total estimated numbers of game for the 2020 count is compared to those from previous years to illustrate the pollution change.









PS: While the game count method is good for estimating larger numbers of common plains game, it is less suited to species such as klipspringer, kudu and steenbok.
No single census method is complete in itself, but needs to be supplemented by local knowledge and other sources of info, e.g. independent total counts of re-introduced species, incidental sightings and camera trap recordings.