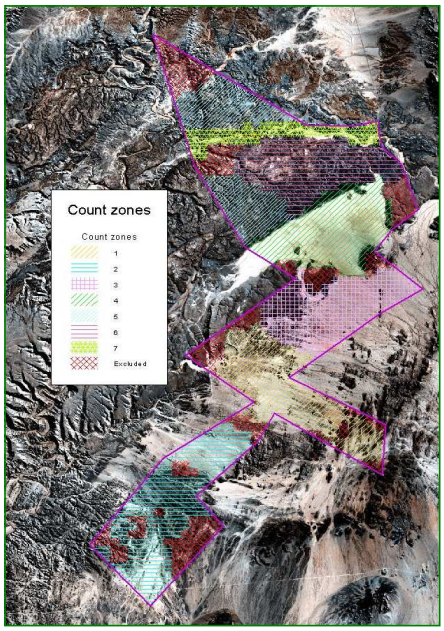
2003 Game Count in Gondwana Cañon Park



Methodology

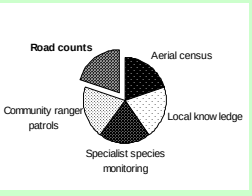
Nature Investments (Pty) Ltd
http://www.gondwanapark.com
PO Box 80205, Windhoek, Namibia
Tel: +264 (0)61 230066; Fax: +264(0)61 251863
eMail: Info@gondwanapark.com

OBJECTIVES OF COUNTING

Objective	Reasons why information is needed
1. Estimate the Numbers of game **How many?**	For: • estimating stocking rates to manage the veld and grazing conditions and competition between species; • setting reasonable hunting/capture quotas; • determining the value of wildlife in the Park.
2. Produce Game Distribution maps. **Where are they?**	For land-use planning (Zonation), it is important to identify areas of high game concentrations. Also to see how these distributions change in future years in response to rainfall or human factors such as water distribution, removal of fences and tourism use.
3. Monitoring Population Change **Is wildlife increasing or decreasing?**	With successive censuses, graphs can be drawn showing population changes of each species (e.g. are springbok increasing or decreasing?). This will tell managers whether or not they are achieving their game management goals and consequently indicate if it is necessary to change management strategies.

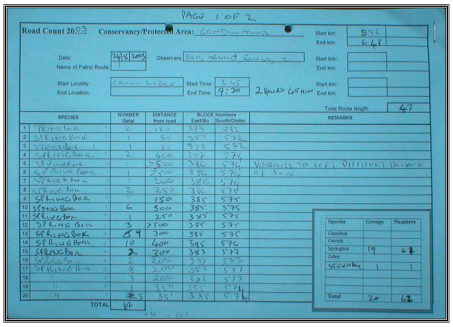
METHODS

A vehicle-based road count method is used. This method works well for common plains game but will not give good results for all species; especially smaller secretive animals, nocturnal animals, and animals in mountainous areas. Other monitoring methods (e.g. aerial census, foot patrols, specialist species monitoring) and local knowledge are also important. This means that the road counts will provide part of the information rather than replace these other methods – i.e. the methods all work together each providing a piece of the 'pie'.



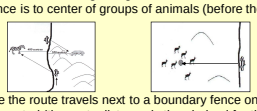
The road-count methodology has been designed so that it can be done at the local level and provide information to address the three Objectives above, while being consistent with counts being done in other parts of the country, e.g. in National Parks and on Conservancies – and thus add to the national overview of wildlife numbers and trends

To achieve both consistency and scientific accuracy, the road-count is conducted using a standard methodology for calculating wildlife numbers and trends that has been tried and tested in many parts of the world. It is called the "Distance Method", and involves:
a) standardizing as many parameters as possible, including routes, times, equipment, etc.;
b) dividing the area into "zones" based on similarity of habitat and topography – essentially zones in which similar densities of particular species would be expected; and
c) calculating correction factors that take into account a number of variables, including proportion of zone sampled, "observability" of different species at increasing distance, etc.



FIELD RULES

For determining game NUMBERS
1. Centre line (the road and immediately next to the road) are priority areas for searching.
2. Distance must be to the animal before it runs away
3. Distance must be at right angles to the road
4. Distance is to center of groups of animals (before the group moves away)

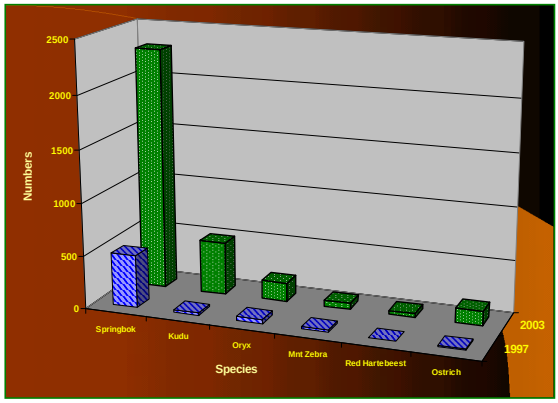


5. Where the route travels next to a boundary fence only the animals inside the fence are counted (the route distance is then halved for that section of the route)
6. Routes must represent all habitats proportionally (i.e. also count low density areas)
7. Measure strip width per route
8. Only count adults and sub-adults - make a note of numbers of newly born juveniles (or newly hatched chicks – ostriches)

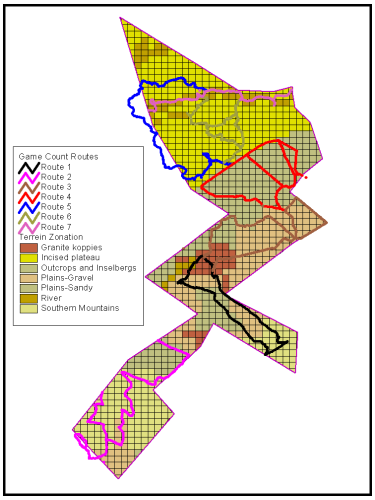
For TREND analysis, a number of additional rules are added:
9. Fixed routes will be used for subsequent counts
10. Start time is at sunrise
11. No binoculars to be used (knowing that leads to underestimation of numbers)
12. Always count from the back of an open bakkie
13. Speed must never exceed 35 km/hr

For Game DISTRIBUTIONS, an additional rule is added:
14. Location of each sighting is mapped using the 2km x 2km grid map

Population changes from 1997 (estimates) to 2003



Routes, Zonation & Correction Factors



Route parameters and area correction factors per zone

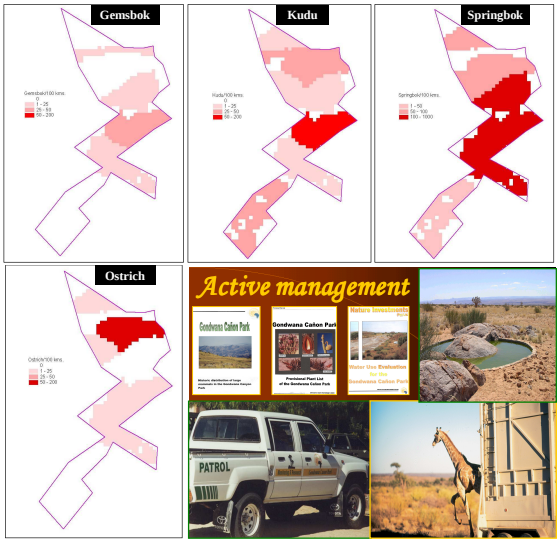
Route parameters	Routes							Total
	1	2	3	4	5	6	7	
Route length (km)	47	60	55	49	37	41	28	317
Route width (km)	1.2	1.2	1.2	1.2	1.2	1.2	0.6	
Area sampled (km²)	56.4	72.0	66.0	58.8	44.4	49.2	16.8	363.6
Time taken (h)	2h50	4h50	4h30	5h00	5h00	3h10	3h40	29h00
Area of zone (km²)	151	172	132	128	127	122	56	888
Percent sampled (%)	37	42	50	46	35	40	30	41
Area correction factor	2.7	2.4	2.0	2.2	2.9	2.5	3.3	(2.4)

Total area of Park = 1092 km², area excluded = 204 km² or 18.7%

Species correction factors

Species	Correction factor
Gemsbok	2.4
Springbok	2.9
Kudu	2.6
Steenbok	10.0
Klipspringer	5.0
Duiker	3.0
Zebra	2.0
Ostrich	2.1

Population distributions in 2003



Results

Species	Routes (ACF = Area Corrected Figure)														Totals		SPECIES TOTALS (corrected)
	1		2		3		4		5		6		7				
	Seen	ACF	Seen	ACF	Seen	ACF	Seen	ACF	Seen	ACF	Seen	ACF	Seen	ACF	Seen	ACF	
Gemsbok	3	8	0	0	21	42	11	24	0	0	0	0	3	10	38	84	202
Springbok	84	225	21	50	158	316	138	300	29	83	28	69	0	0	458	1044	3,027
Kudu	1	3	20	48	37	74	1	2	9	26	5	13	13	43	86	209	543
Steenbok	2	5	1	2	1	2	11	24	1	3	2	5	2	7	20	48	482
Klipspring	0	0	2	5	0	0	0	0	8	26	11	27	2	7	23	65	325
Duiker	0	0	0	0	0	0	0	0	0	0	0	0	3	10	3	10	30
Zebra	0	0	0	0	0	0	0	0	4	0	6	11	0	15	10	26	53
Ostrich	11	29	0	0	8	16	0	0	1	3	32	79	0	0	52	128	268
TOTALS	101		44		225		161		52		84		23		690		4,930

Total game numbers and value (N$x1000)

Species	Gemsbok	Springbok	Kudu	Steenbok	Klipspringer	Zebra	Ostrich	Totals
Numbers	202	3,027	543	482	325	53	268	4,900
Value N$ x1000	253	1,362	462	96	81	117	121	2,492

***Caution**: it is the activity rather than numbers which are the key as sustained droughts could have big impacts on numbers but as long as Gondwana Cañon Park is monitoring it is an indication of good management.*