

ELEPHANT AND RHINO POPULATION TRENDS IN SELOUS, TANZANIA

The first aerial surveys of the Selous Game Reserve, made on behalf of the Wildlife Division, took place in the wet and dry seasons of 1976, and covered a census zone of some 73,000 km². Later counts were made in 1979 along the Rufiji river by Ecosystems Ltd, covering a 6,354 km² zone, and in 1981 in the north-east Selous by Borner, covering a 19,550 km² zone. Both the later counts were contained within the original 1976 census area. All counts used the same methods of counting and analysis (Norton-Griffiths, '78 Counting Animals) with similar aircraft, speeds, counting heights and strip widths. Trends can be elicited by reanalysing the earlier results to conform with the later census zones.

Methods

Uncorrected estimates and variances of all the large mammals were obtained from reports of the later counts.

Estimates and variances were calculated from the original 1976 data for each of the later census zones, and wet and dry season estimates were merged. Uncorrected estimates were used for comparison, since different correction factors had been used by the various parties.

The 1976 estimates were then compared with the 1979 and 1981 estimates and differences in population estimates were tested for significance with a D Test (Norton-Griffiths, 1978).

Results

The results are presented in the tables below. Where the D value is greater than 1.96 the estimates are significantly different at the 5% level, and the percentage difference has been entered.

It will be noted that in the Rufiji area, eland and giraffe both showed significant increases between 1976 and 1979, while the only animals to show significant decreases were elephants ($d = 2.02$) which were 30% lower, and rhinos ($d = 2.56$) which were 49% lower.

Table 1 – RUFJI

	1976	1979	D value	%Diff.
Buffalo	21151	19917	.21	
Eland	655	1957	4.45	+199
Elephant	14417	10081	2.02	—30
Dead Elephant	767			
Giraffe	134	572	6.52	+327
Hippo	6292	8783	1.9	
Rhino	571	290	2.56	— 49
Waterbuck	2032	1700	.64	
Wildebeest	20608	17131	.66	
Zebra	7778	6781	.73	

Table 2 – NE SELOUS

	1976	1981	D value	%Change
Buffalo	28788	37649	.7	
Eland	2862	4575	1.08	
Elephant	29026	22589	1.71	—22
Dead Elephant	1326			
Giraffe	123	1385	2.87	+1026
Hippo	5354	3320	1.42	
Rhino	1173	298	4.18	—75
Waterbuck	2644	1459	1.33	
Wildebeest	42009	42364	0.3	
Zebra	24909	18076	1.6	

In north-east Selous there was once again a significant increase between 1976 and 1981 of giraffe, but the elephant estimate although 22% lower was not statistically significant ($d = 1.71$). Rhinos on the other hand showed a highly significant and drastic decrease of 75% in five years ($d = 4.18$).

Discussion

The reanalysis of the 1976 results modifies previous conclusions about elephant and rhino trends in the Selous. Borner ('83 Selous Census), by extrapolating from his census zone to the whole Selous, concluded that the elephant population of the Selous remained at about the same level between 1976 and 1981. Unfortunately, the reanalysis does not support this conclusion. His sample area, lying in the north-east of the Reserve was a high density area in 1976 relative to the rest of the Selous and it is invalid to extrapolate the 1981 results from a portion of the whole 1976 census zone.

Borner also throws doubt on any serious decrease of rhino, and quotes hunters and Wildlife Division personnel who claimed that rhino poaching was only occasional and had not reached an alarming level. The reanalysis shows that the negative trend of rhinos was higher than Banner estimated.

In fact the rate of decline of rhinos is consistent both in Rufiji and north-east Selous, lying almost on a straight line.

If these trends have continued, rhinos by 1984 may have suffered a severe reduction in the Selous. Unfortunately, rhino and elephant poachers are often the same people and even when rhinos become scarce, the poachers may be sustained by taking elephants as their staple prey and rhinos only when the opportunity occurs. There must be grave doubts as to the current status of rhinos in the Selous.

Douglas-Hamilton

SOUTHERN SUDAN ELEPHANTS STILL SUFFER

Ivory poaching is still very much alive in southern Sudan and became particularly intense between 1982 and 1984. Illegal hunting has increased in western Equatoria, eastern Equatoria and also the Upper Nile Province and parts of Bahr el-Gazal Province. The wildlife is in jeopardy where rebels of the Anyanya movement are operating. Rebel groups totaling more than 1,000 people walk long distances and kill elephants whenever they come across them. Ivory is used as currency to buy automatic weapons and it has generally become the currency for personal monetary advancement in Sudan.

According to Watson et al (1976) elephants occurred throughout the southern Sudan. Their range covered about 650,000 km². Ivory poaching and uncontrolled hunting has steadily driven the elephant range down. Today their area extends only 500,000 km², representing a decline of about 23% within eight years.

If the decline in elephant numbers is not stopped and if the Sudanese government does not make a real effort to prevent the trade in ivory, there may be no elephants left in Sudan by the year 2000.

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REFERENCE

Watson, R M , Thackway, R M , Tippett, C I , and Scholes, V A D (1976) Sudan National Livestock Census and Resource Inventory (Typescript, 20 Vols)