The epidemiology of tuberculosis in free-ranging lions in the Kruger National Park

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At the start of this comparative study in November 1999, 16 uninfected lions were identified in the north of the Park and clinically evaluated. A comparable group of 16 infected lions were identified in the south of the Park and clinically evaluated. These two groups have been monitored intensively for the past four years. Currently there are still 8 of the original non-infected lions alive in the north of the Park, compared to 4 of the original infected southern group. Five of the southern lions died of advanced tuberculosis. The remaining seven died as a result of apparent social disruption in the prides after prominent members in the social hierarchy died of tuberculosis. Of the three study prides identified in the south only one pride still exists. In the far north all three female prides are still functional.

The loss of mature territorial pride females and stabilizing male coalitions in the south, makes prides vulnerable to "take over" by healthy nomadic groups. The northern population had many more old lions (another female that had been branded in 1989 eventually died this year, and 7 lions that were branded in 1993 are still alive and well). Conversely, no lions older than 10 years could be identified in the south. Regarding haematology and blood chemistry, northern lions had better profiles in all parameters, when compared to southern lions. Northern adult lions are significantly heavier than their southern counterparts (Females: 118.37 kg versus 143.52 kg, males: 186.55 kg versus 200.01 kg). The sex ratio in the south is distorted: two males for every female. In the north it is one male for every two females. More cubs were born in the south but were killed or evicted during subsequent take-overs. Tenure of territorial male coalitions in the north is much longer than that of southern male coalitions.
After three years of monitoring, the continued study of the effects of tuberculosis infection on these two lion populations was unfortunately delayed as a result of defective radio transmitters and poor quality collar strapping. These transmitters were meant to last five years, but did not live up to their advertised functional life. This necessitated the replacement of 19 radio collars. This was achieved during two mass capture operations: one in the south where 36 lions were captured and identified, and one in the north where 40 lions were captured and identified. Twenty-seven radio-tracking sessions were done during the period of report.