

LIMPOPO LEOPARD PROJECT WELGEVONDEN 2014

INTRODUCTION

During your visit to Welgevonden you may come across a number of camera-traps set up across the reserve. These cameras form part of a province-wide project run by Panthera, in partnership with the Limpopo Department of Economic Development, Environment and Tourism (LEDET) and the University of KwaZulu-Natal, to monitor leopard populations in Limpopo. Although leopards are widespread, their status is by no means secure and large numbers are killed every year. To ensure effective conservation, it is important to know where leopards are, how many there are, and most critically, how populations change over time. However, monitoring leopards is challenging due to their secretive nature and wide-ranging behaviour, and we rely on modern technology and powerful statistics to reliably estimate leopard numbers. In addition to Welgevonden, we are conducting surveys in the Western Soutpansberg Mountains, on Makalali, Venetia-Limpopo and Timbavati Game Reserves, as well as Atherstone and Wonderkop provincial Nature Reserves.

METHODS

We set up 40 camera-trap stations within each reserve, spread roughly equally throughout the area. Each station comprises two cameras, enabling us to photograph both flanks of a leopard as it walks by. We distinguish individual leopards by the unique spot patterns on their coats, and use statistical models (known as capture-recapture models) to assess how often an individual is photographed (or captured) compared to other individuals. These data are combined with information on where leopards were photographed to generate a robust estimate of leopard population density for each survey site.

RESULTS

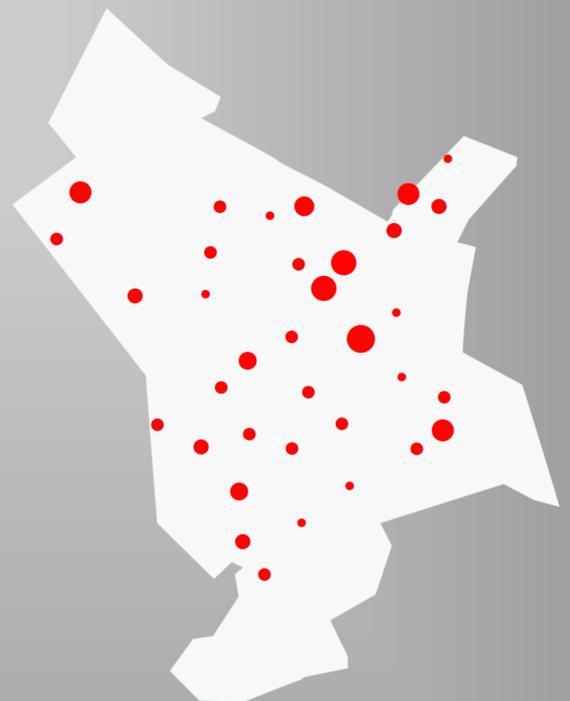
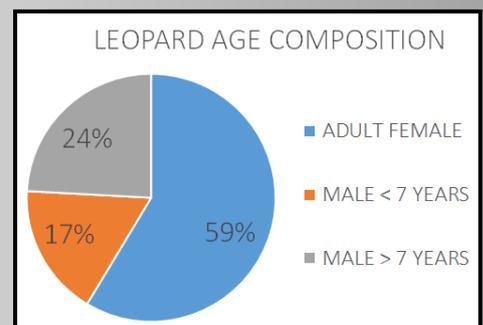
We photographed 29 leopards on 177 occasions during our 45 day survey in Welgevonden during 2014. Of these, 12 were males and 17 were females. The survey on Welgevonden covered an area of 228 km². The population density of leopards as estimated by the capture-recapture models was 5.4 ± 1.05 leopard/100 km², suggesting that roughly >20 leopards occupy Welgevonden at any one time (some of the leopard we photographed have home ranges that extend beyond the borders of the reserve).

DISCUSSION

Leopard densities have increased by 2.2 leopard/100km². This increase is good news for Welgevonden given the pressures leopard are exposed to adjacent to the reserve. Factors that have facilitated this increase are as yet unknown, however, the increase in sampling area (2013 = 164 km²; 2014 = 228 km²) may have generated more robust estimates this year. Leopard composition appears healthy, with a significant proportion comprising reproductively viable females. The presence of male leopards older than 7 years of age is very promising as it demonstrates that the population is stable. New trophy hunting regulations are to be implemented across Limpopo during 2015, so we hope to detect this effect in Welgevonden's leopard population in future surveys.



The Panthera camera-traps are triggered by a passive infrared sensor, which detects changes in temperature when an animal or vehicle passes in front of the camera. The camera-traps emit a bright flash at night, which produces a clear and sharp image – without this impressive flash our research would not be possible.



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