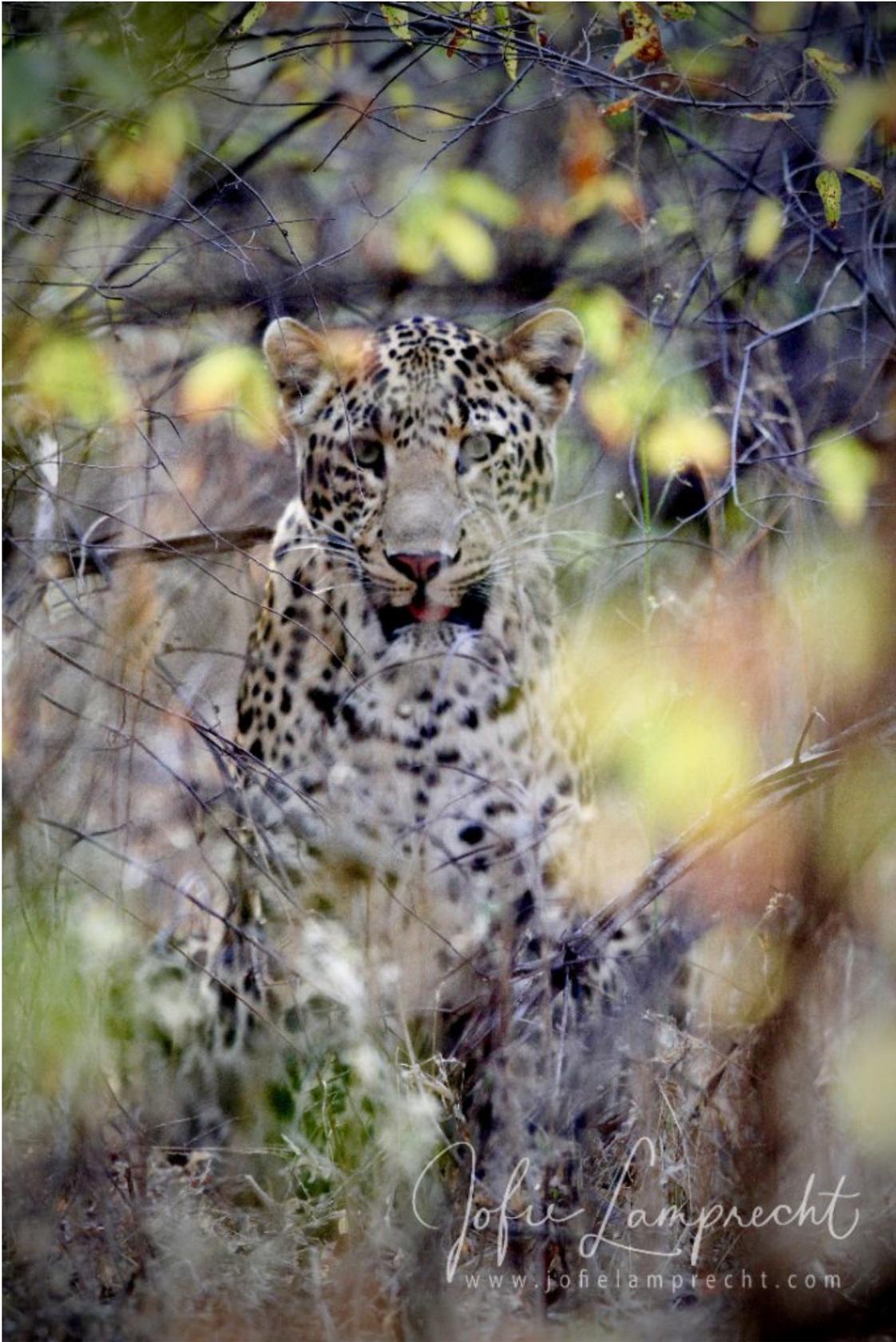


by Dr. Louisa Richmond-Coggan



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“The Namibian Leopard: National Census & Sustainable Hunting Practices”

An overview of the Namibian leopard study—18 months of collecting, collating and analyzing data from all over the country, elaborated with the assistance of many people, institutions and organizations. Richmond-Coggan’s 184-page report gives stakeholders the factual and scientific basis for a sustainable leopard management system.

The leopard, *Panthera pardus pardus*, is one of Africa’s most distinguishable big cats. Due to the leopard’s broad geographical range and its cryptic activities, only limited empirical evidence can be applied to adaptive management strategies, practical conservation methods and monitoring across Namibia and Southern Africa. As a result of this shortage of empirical evidence around leopard populations, their distribution and their population dynamics, Namibia’s ability to set long-term conservation strategies and carry out effective monitoring has been limited.

Compared to other large carnivores, the leopard is highly adaptable and can utilise human-dominated environments successfully. However, leopards are under pressure across their range from habitat loss and fragmentation, reduced wild prey availability, the illegal wildlife trade and conflict with farmers due to livestock predation and retribution killing.

A global study found that the leopard is the leading carnivore-conflict species, featured in the greatest number of human-wildlife conflict case studies. This pattern can be found across Namibia, where both freehold and communal farms report losses of livestock and game to leopards. In addition, freehold farmers claim that they have noticed a continual increase in leopard numbers on their farms in tandem with an increase in conflict cases. This situation has potentially been exacerbated by the severe drought that occurred in Namibia from 2015 to 2017, with vast areas of the country yet to fully recover from the effects. A drought can decrease farmers’ tolerance of losses from predation due to the losses already sustained as a result of the environmental conditions.

As conflicts increase, so does the number of leopards labelled as problem animals, indiscriminate of age or sex, that are removed from the farmland and the national population. However, a high proportion of the removed leopards are not reported to the authorities, so the true level of removals is currently unknown. The long-term sustainability of the leopard in Namibia relies upon understanding all of the complex dynamic pressures placed on the species before creating viable and effective monitoring systems.

The last comprehensive leopard census in Namibia was undertaken from 2008 to 2011 in partnership with the Ministry of Environment and Tourism (now MEFT, the Ministry of Environment, Forestry and Tourism). This study assessed the national population status of leopards in Namibia and recommended that the trophy-hunting quota of 250 animals per year remain unchanged. The study also recommended hunting-permit distribution and monitoring methods.

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The 2016 **IUCN Red List** change in status for the leopard across its global range highlights the importance of rigorous scientific data from individual countries to put towards international assessments. As each leopard country, including Namibia, has its own challenges, pressures and legislation that will impact the species, it is imperative that each country have its own dataset. It is therefore critically important that rigorous and nationally approved scientific evidence is obtained regularly in order to drive policy and direction. This allows transparent decision-making based on empirical evidence.

To conserve large carnivores, it is necessary to understand their abundance in human-dominated landscapes. This is where the real conservation action is needed, through an interdisciplinary and adaptive approach (Winterbach *et al.*, 2012). Balme *et al.* (2013) in agreement with Winterbach *et al.* (2012) also states that research projects should not only be multi-disciplined, but also based outside protected areas and not focused on just one dimension, such as population dynamics. Consequently, this study takes a multi-disciplinary approach, inside and outside national parks, by combining ecological methodologies and social science to understand the pressures on, and status of, the leopard population across Namibia.

The work that resulted in “**The Namibian Leopard: National Census and Sustainable Hunting Practices Study Report**” on behalf of the Ministry of Environment and Tourism and the Namibia Professional Hunting Association ran from September 2017 to March 2019. The study encompassed three field-work phases, two camera-trapping surveys and one questionnaire survey. Respondents could complete and return questionnaires throughout the study period, but attendance at farmer-association meetings was undertaken during a specific timeframe.

In conjunction with the field work, the study collated additional leopard presence and density data from multiple organisations across Namibia. Sustainable-use and human-leopard conflict data, collected in partnership with the Ministry of Environment and Tourism, was also obtained throughout the study. The results were then compared to the Stein *et al.* (2011b) study to determine if there had been any change to Namibia’s leopard population during that time.

The final analysis indicated that leopard densities across Namibia varied significantly. The central and northern camera-trap surveys revealed 40% and 16% higher densities, respectively, than found by the 2011 study. However, in the south of Namibia, the density estimate is 38% lower than 2011’s. The highest leopard densities were found in areas that had the highest density of game compared to livestock.

Based upon current known leopard densities, the study has highlighted that leopard densities in Namibia are higher in some areas of freehold farmland than in national parks. (Game densities are high on Namibian farmland because game is of high economic value to the landowner. As well, national parks contain other large carnivores, such as lions and spotted hyaenas, which are competitors for the leopard; these do not exist on freehold farmland.)

However, in comparison to other leopard densities recorded in South Africa, both inside and outside national parks, Namibia’s overall leopard densities are still very low. Unlike in South Africa, leopards in

Namibia are distributed across the entire country, not confined to parks or other specific areas, which influences their densities. Also, Namibia not only has varied climatic and habitat conditions throughout the country, but it differs from South Africa in other ways, which will again impact density figures.

The data show that the “high density” leopard classification assigned to the northeast of Namibia in 2011 was incorrect; the densities now recorded in that region are the lowest in Namibia to date. Also, the areas of “no known occurrence” of leopards in 2011 have been significantly decreased, particularly in the east, south and southeast of Namibia. A portion of these new presence records for the southeast are also outside the current IUCN Red List distribution for leopard in Namibia (Stein *et al.*, 2016). As a result of this and other studies, Namibia’s 2011 density categories have been updated and re-defined to reflect the changes to the leopard population post-2011 to present day.

In 2011, the national leopard population was estimated to be 14,154 (Stein *et al.*, 2011b). Across freehold farms in the center and north of Namibia, between 2011 and 2019 there has been an increase in leopard density of up to 40%. However, due to a combination of the re-classification of the density categories based upon new data and lower leopard density in some areas of Namibia, this study has determined that the leopard population should now be estimated at 11,733. It is important to recognise that the leopard population is not necessarily declining countrywide; between 2011 and 2019, more data on the leopard population was collected nationally, increasing the accuracy of the 2019 study.

With respect to human-leopard conflict, this study confirms that problem leopard removal—and the subsequent lack of reporting to the Ministry of Environment and Tourism—is one of the greatest threats to Namibia’s leopards. Over the duration of the study, respondents reported to us (they were allowed to do so anonymously) removing 342 leopards from private farms compared to the 196 leopard removals recorded by MET over the same time period (October 2016-December 2018) and the 183 reported in the 2011 study.

In the communal conservancies, between 2001 and 2017 an average of 336 leopard conflict incidents—an incident being either a predation event on livestock and/or a problem animal removal—were logged per year. Since 2011, the reporting rate of problem-leopard removal to MET by freehold farmers has declined by 5% to just 45%. Ensuring that livestock and game losses were offset by economic incentives such as tourism and trophy hunting was linked directly to increased tolerance for leopard on landowners’ properties.

In 2017, a total of 650 problem-leopard incidents were recorded on freehold farms (152) and communal conservancies (498), which would rise to 846 if it is assumed there is no overlap between the study’s respondents and those who reported leopard incidents to MET. In comparison, 161 leopards were removed through trophy hunting in the same year. The highest number of trophy hunts took place in freehold farmland, followed by communal conservancies and national parks.

The areas shown to have higher leopard density, suitable habitat and prey availability had the greatest hunting success rates. From 2016 through 2018, on average, 27% of the trophy hunts undertaken across Namibia were successful. Since the implementation of the new leopard permit system, in 2011, the annual quota of 250 leopards has never been reached; the highest number of leopard “utilised” was

161, in 2017.

This study recommends that the trophy-hunting quota for leopard remain at 250 as long as hunting success rates remain unchanged. Keeping the 250 quota maximises the opportunity for farmers to offset economic losses through trophy hunting, which in turn leads to a reduction in problem-leopard removals. When specific leopard data is available for a given area, this information must be taken into consideration when allocating quotas across regions as part of MET's adaptive management strategy. Even with the reduction in the leopard population estimate, the actual number of trophy leopards hunted per year, to date up to 161, is still considered to be sustainable.

However, caveats to this recommendation were outlined in the study. For instance, if problem leopard removals, across freehold farms and communal conservancies, continue to rise, the impact on the population would need to be mitigated by adapting the sustainable-use policy. Therefore, quantifying and managing both the reported and unreported removal of problem leopards must be made a priority across Namibia. The MEFT and landowners must work together to decrease problem-leopard removals and to increase the reporting rates in order to improve the data on which leopard-management decisions are made.

The issue of removals—from freehold farmland and communal conservancies—is cause for concern, especially as not enough specific leopard studies have been carried out in those areas. This lack of representation in the areas surveyed must be addressed in order to better inform decision-making—particularly in light of the fact that the landowners in both these areas are the custodians of the national leopard population. Other recommendations included revisions to permit regulations and the creation a national leopard genetic database as part of the monitoring and management of the population.

In addition, trophy hunting at landscape scale in tandem with economic incentives may be another way to reduce leopard removals in freehold farmland. A landscape approach to leopard trophy hunting could be created through leopard management zones across the freehold farms. (The conservancies have demonstrated that the establishment of such zones, of mixed farm types, are viable.) The study highly recommends that these zones be re-established as part of a stratified monitoring system for Namibia's leopards as called for by the IUCN SSC Cat Specialist Group in 2018.

The study results have been utilised by the MET, the CoP18 CITES update status report for Namibian leopard, the IUCN Red Data Book for Namibia Carnivores, Leopard chapter, and the joint CITES-CMS Roadmap for Conservation of Leopard in Africa report. The study's recommendations will also feed into the Ministry of Environment, Forestry and Tourism's national management strategy for leopard, as well as other national and international studies, to ensure the long-term survival of leopard not only in Namibia but across Southern Africa.

Dr. Louisa Richmond-Coggan holds a BSc in Geography and Biology from Lancaster University, an MSc in Conservation Biology from the Durrell Institute of Conservation and Ecology at the University of Kent and a PhD from Nottingham Trent University. She is an ecological consultant ([LRC Wildlife Conservation](#)) experienced in both in situ field research and ex situ positions at international NGOs. She

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focuses on carnivore conservation, specifically human-wildlife conflict issues across East and Southern Africa. Her aim is to collaborate with stakeholder groups as part of robust scientific research projects in order to create practical management strategies for the long-term conservation of species.

Banner photo by Jofie Lamprecht

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