

by Gail C. Thomson (formerly Potgieter)

# How Many Leopards are in Namibia? Understanding the science, countering the critics



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*Dr. Louisa Richmond-Coggan completed a national leopard study in March 2019 after 18 months of collating and analyzing data from all over Namibia. This study was treated with extreme prejudice on social media even before it began, and detractors continue to question it now that her report is published. Are these criticisms valid? Is there any evidence that this study tried to overestimate leopard numbers or otherwise misrepresent the results to appease the hunting industry?*

The most recent and detailed criticism of the study (read: long rant on Facebook) comes from Dr. Pieter Kat, who runs a charity called Lion Aid. As a biologist who has specialized in large carnivore conservation, I found Dr. Kat's argument to be a breathtaking mixture of cherry-picking, total misunderstanding of the study and extreme bias against hunting. I will focus on his main arguments and explain where he goes wrong.

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His first issue is that three of the 14 organizations that helped fund the project are hunting clubs and associations (NAPHA, the Namibia Professional Hunting Association; SCI, Safari Club International and DSC, Dallas Safari Club). Most of the earliest critics of the leopard project decided that the study results were invalid before it even started, simply by noting that NAPHA provided some core funding. The remaining 11 sponsors are from the Namibian corporate sector.

The detractors fail to mention the involvement of the Namibian Chamber of Environment (NCE, an umbrella body representing 64 environmental NGOs in Namibia) and several of its member organizations that do carnivore research, along with the Ministry of Environment, Forestry and Tourism (MEFT) and the Namibia University of Science and Technology (NUST). All of these entities promote evidence-based conservation management and would not allow special-interest organizations to influence research findings or outcomes.

The prejudice shown towards this study is concerning on a number of levels:

1. that Dr. Richmond-Coggan was assumed to be a biased and unethical scientist before even starting the project;
2. that people would prefer leopards not to be studied at all due to lack of funding rather than allow hunters to fund research;
3. that anti-hunters assume that hunters want to drive their quarry to extinction by rigging research results;
4. that non-hunting funders and carnivore conservationists would contribute or allow their names to be associated with biased research.

As a non-hunting conservation biologist, I am saddened to see so little public trust in independent scientists. I also feel that hunting should fund conservation research; it makes no sense for hunters to rig research results and thus endanger their own industry.

Despite claiming that the research was biased towards the hunting sector, Dr. Kat happily uses some of the results from the report that do not put the industry in the best light. Prior to changes in how leopard hunting was managed in Namibia, instituted in 2011, hunting leopards with dogs was allowed and females could be taken as trophies. During the period 2005-2009, more leopards were hunted in Namibia than in any other period; nearly 300 were taken in 2008, well above the quota of 250. Furthermore, three individuals weighing only 15 kilograms (33 lbs) were hunted during 2002-2008. If this study was meant to make the hunting industry or the government look good, these details would have been omitted.

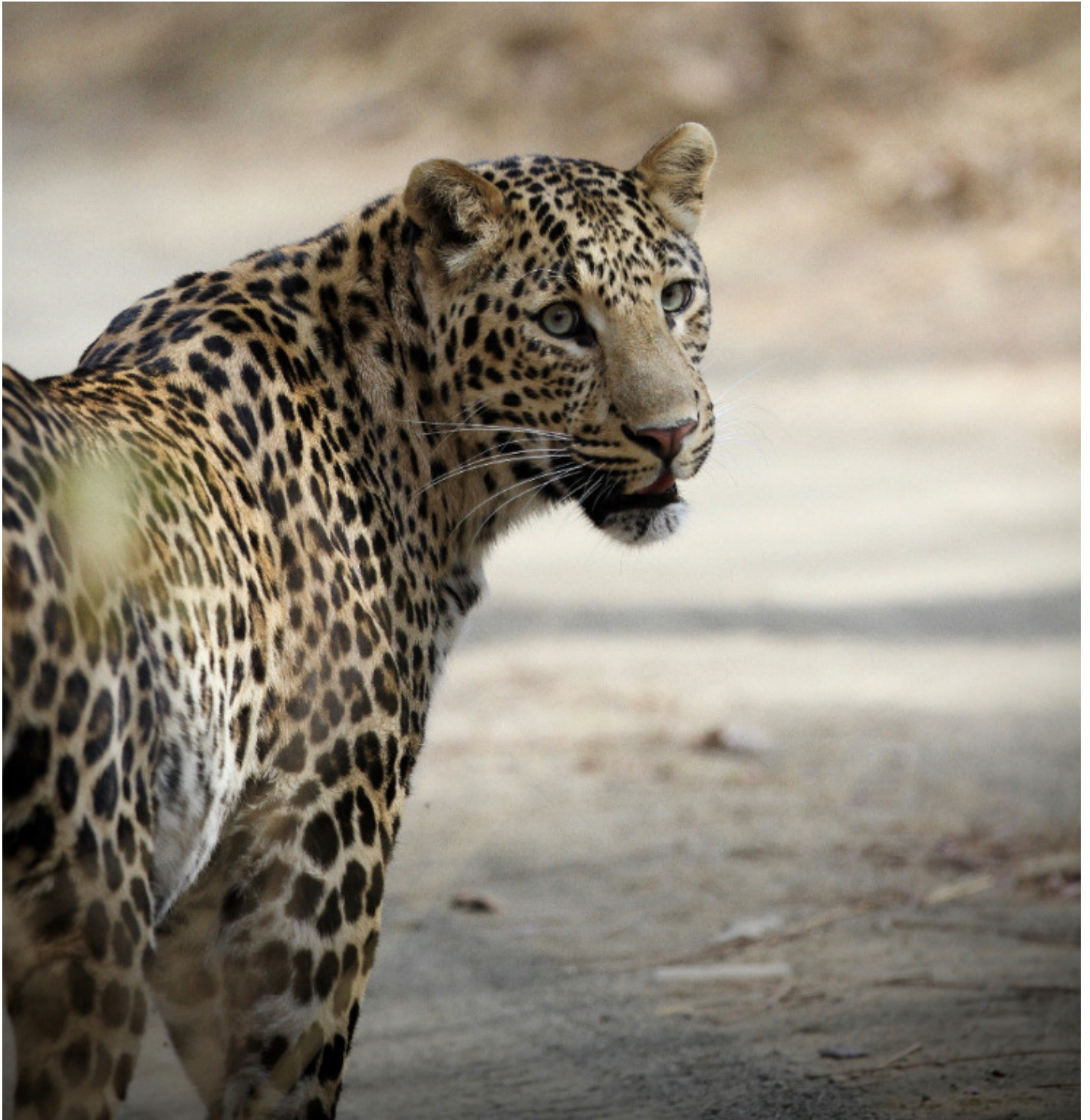
The only bias I can see here is in Dr. Kat's critique: While highlighting the shortcomings of the leopard-hunting system prior to reforms in 2011, he fails to mention how the system has improved: Hunting with dogs was banned and female leopards may no longer be hunted, resulting in the average weight of a hunted leopard increasing from 44 kilograms (97 lbs) in 2001 to 63 kilograms (139 lbs) in 2017. Since 2011, only 27% of the leopard hunts in Namibia have been successful and the quota of 250 per year has not been reached in any year.

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This shows that the Ministry of Environment, Forestry and Tourism has responded to the problems in the hunting system and will likely continue to improve the system based on recommendations in the 2019 report. Dr. Kat demands that Namibia “completely revise all leopard trophy hunting guidelines,” yet fails to mention the previous improvements or current recommendations. This reveals that he has no interest in improving hunting management, only in banning it altogether.

Dr. Richmond-Coggan’s study also revealed the real threat to leopards in Namibia: being killed by farmers in response to livestock or game losses. Once again, Dr. Kat picks up on this information, yet fails to mention the clear link found between trophy hunting and increased farmer tolerance for leopards. The questionnaire survey of 392 farmers did indeed reveal that 55% of them kill leopards without applying for a permit, but it also showed that trophy hunting was one of the reasons why farmers tolerate leopards on their farms. Some farmers even stated that they would remove most or all of the leopards from their land if trophy hunting were banned.

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A Namibian leopard. Jofie Lamprecht photo

Finally, Dr. Kat seems not to understand how the final estimate for leopard numbers in Namibia was reached. First, he decides that six camera-trap studies were actually three because there were two each

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(separated by several years) in three locations. These repeated studies in specific areas were used specifically to investigate trends in the leopard population over time. Next, he ignores the point that these studies were not the only ones that contributed to the national leopard estimate. A number of other organizations working in Namibia use camera traps, tracks (“spoor”) and tracking collars to estimate leopard numbers in different parts of Namibia. Dr. Richmond-Coggan obtained this information by asking these organizations for their data (in cases where it was not yet published) or including results from the published scientific articles and reports they produced.

These detailed studies in different parts of Namibia provided leopard densities in their study areas, but not even these were enough to provide a national estimate. Specifically, they don’t tell us if there are any leopards in non-studied areas. For this we need to include as many leopard sightings as possible from all available sources. The leopard project thus collated tourist sightings reported through the Environmental Information Service (EIS), sightings and photos provided by farmers and hunters, answers from the farmer questionnaire surveys and MEFT records of where leopards were killed (either as problem or trophy animals).

The detailed studies tell us what makes good leopard habitat, while the other data points show us where leopards occur throughout large parts of Namibia. These datasets are then entered into a computer model to paint a picture of leopard density and distribution for the country. The model basically identifies what features of a particular area are most (or least) favorable for leopards and then looks for these features in the bigger landscape. For example, we know from detailed studies that leopards prefer mountainous terrain, and we know that people have seen leopards in certain parts of the Kunene Region. The model takes that information and predicts how many leopards we are likely to find in the mountainous parts of the Kunene Region. These predictions are made more accurate when we add other leopard density predictors like rainfall, the presence of dry riverbeds (where leopards like to hunt) and land use.

The computer model crunches the numbers and spits out its “best guess,” along with a standard error. In this report, the “best guess” is 11,733 leopards and the error is 5,494. This means that while the actual number of leopards may not be exactly 11,733, it has a 95% chance of falling between 5,784 and 17,227 (this is a simplified explanation of the statistics; for a more detailed, technical explanation, see the full report).

Dr. Kat tries to discredit the estimate by pointing out the large range between maximum and minimum, but this is not unusual for an estimate that covers an area the size of Namibia. He further reveals an astonishingly poor understanding of basic statistics by claiming that there is a 95% chance that the population is exactly 5,784. If that were the case, then it would be a very accurate estimate indeed!

One of the key findings of the project (conveniently ignored by Dr. Kat) is that leopard records were found from southeastern Namibia, where leopards were thought not to occur in 2011. It is likely that leopards have always been there, but the 2019 study was able to tap into the EIS and more sources of data in this region than the previous study. The 2019 results also adjusted the predicted leopard density in northeastern Namibia from “high” to relatively low based on new data, which was one of the main reasons why this estimate was lower than the 2011 estimate of 14,154 leopards.

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The new, more detailed estimate does not necessarily indicate that there are fewer leopards in Namibia today than there were in 2011, only that we now know more about their numbers and distribution. Dr. Richmond-Coggan took this—along with the improved hunting system and the link between hunting and farmer-leopard conflict—into account when recommending that the quota of 250 leopard trophy permits per year remain unchanged. Freehold farms support more leopards than national parks in Namibia, so the most important leopard conservation action is to incentivize farmers to live with leopards—and trophy hunting is one of those incentives.

Dr. Pieter Kat's criticism of Namibia's national leopard study has backfired spectacularly. While claiming that the author of the report is biased, he reveals his own bias by cherry-picking parts of the report that support his argument while ignoring results that don't suit him. While dismissing the report as not "scientific" enough, he shows a total lack of understanding of the scientific methods and statistics used to estimate carnivore populations. Fortunately, Namibia bases its leopard management system on reports using sound scientific methods and the best available data rather than Facebook rants.

*Gail Thomson (publishing as Gail Potgieter before her recent marriage) is a carnivore conservationist who has worked in South Africa, Namibia and Botswana on human-carnivore conflict, community conservation and wildlife monitoring. Her published scientific work includes journal articles, technical reports and chapters in scientific books. She recently established an independent company in Namibia that offers communication and conservation services for environmental non-governmental organizations. In particular, she is interested in promoting clear public communication of science and conservation efforts in southern Africa.*

*Banner image by the author*