

# THE LATEST CENSUS SHOWED A RISE IN LION NUMBERS — BUT IT MAY BE TIME TO UPDATE THE COUNTING METHODS

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The scientific way of doing a census is to be transparent and open to peer review, say scientists  
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Starting 2 p.m. on June 5, some 1,400 forest personnel, armed with binoculars, cameras and spreadsheets fanned out across dry deciduous and thorny scrub forests, fields and villages in and around Gujarat's Gir National Park to count the world's only remaining Asiatic lion population. The survey was over in 24 hours. And within the next few days the tally was announced.

The lion population, said the State forest department, had increased significantly by 29%, from 523 five years ago to 674. The department also said that the big cat's distribution had increased to 30,000 sq.km. from 22,000 sq.km., covering nine districts in Saurashtra. All this despite the scourge of the canine distemper virus (CDV) outbreak in 2018 that killed 36 lions.

This heartening news about the Asiatic lion — an animal that was once close to extinction — was celebrated widely; 'Kudos to the people of Gujarat and all those whose efforts have led to this excellent feat,' the Prime Minister tweeted. But very soon, scientists raised questions: how do you count lions across thousands of square kilometres in 24 hours? How do you analyse and arrive at a figure in a matter of days? Is it not time that the census method — the block count method — used for decades, was upgraded to test newer techniques?

## COVID impact

This year, the COVID-19 lockdown changed a few things. For instance, the wildlife experts who usually take part in this exercise could not do so, and it was carried out exclusively by the forest department; and second, the number of survey days was cut down from three to one. These, however, are not the only reasons why wildlife biologist Ravi Chellam, CEO, Metastring Foundation, who has spent decades studying Gir's lions, believes the census numbers are unreliable.

He cites several other reasons too. "The scientific way of doing a census is to be transparent and open to peer review. Here, the method was not described in detail, the raw data not shared, the approach to analysis is not known and no independent individual is involved."

Moreover, the survey lasted just 24 hours, "and just days later, like magic, a number was produced. The actual number could be less or more — at best it is a guesstimate," he says.

The fact that 1,400 people participated in this exercise could create 'observer bias,' says Chellam. "One person's ability to observe will differ from the next person's. One person's training and competence is going to differ from the next. It is best to have a small and dedicated set of people who devise a scientific way of doing the count." Counting lions is no mean feat. Unlike tigers and leopards, lions do not have distinct coat patterns that camera traps can easily capture to help identify individuals.

In the case of lions, trackers must study their faces closely — especially the unique whisker spot

pattern or 'vibrissae pattern', which is as good a distinguisher as stripe patterns for tigers and rosette patterns for leopards. Scratch marks or other scars are good markers too.

### **New method needed**

For over two decades, wildlife experts have been proposing newer methods to arrive at lion population sizes. In several papers since 1999, Y.V. Jhala, senior scientist at the Wildlife Institute of India, has argued that a way to avoid double counts would be to differentiate individual animals through whisker spots and permanent body markings. When clubbed with a method called 'spatially explicit density capture and recapture,' where the density of lions in an area can be evaluated based on the presence of prey, the population can be better estimated.

The current method used by the Gujarat forest department monitors lions that visit watering holes. Experts say this could grossly under-count or over-count the animals; possibly counting the same lion multiple times.

A better method, experts say, would be to photograph lions, survey habitats, and calculate the probability of finding lions at distances from designated spots: for instance, watering holes, the site of a carcass, or areas where deer and other prey abound.

While the Gujarat forest department's methodology is one that has been used consistently over decades, "one should always be open to testing new techniques, such as mark and recapture based on camera traps, even if it means more human resources and money," says Meena Venkataraman, a wildlife biologist who researches the Asiatic lion. "What is amazing is that we have achieved this for tigers, who span such a diverse set of habitats across the country. For lions too, it could well be possible. We want the best way to look at how our lions are doing; a powerful alternate monitoring protocol."

### **Dozens of deaths**

Another matter of concern for scientists are the recent lion deaths in Gir. As many as 92 lions reportedly died of unnatural causes this year. A team of representatives from the government, the Wildlife Institute of India, the National Tiger Conservation Authority and the Indian Veterinary Institute visited Gir in the last week of May but could not ascertain the exact cause of death. The State government vehemently denied the presence of CDV.

A former IFS officer termed the State forest department's failure to get the samples of dead lions investigated as "criminal negligence," but Shyamal Tikadar, principal chief conservator of forests (wildlife) and chief wildlife warden of Gujarat, said that samples could not be sent to the National Institute of Virology in Pune due to the lockdown. "We need to know where these lions died, if they are part of the same pride, we need to rule out CDV," says Chellam.

Venkataraman believes that the focus on numbers distracts from the real picture. "The census just gives a number and a number is nothing. Scientists need to address new conservation challenges such as disease ecology and issues outside the protected area. We also need an understanding of lion ecology to devise conservation management strategies, and to get clues into their health, behaviour, prey-base and movement in human-dominated landscapes."

Chellam agrees: "The census should ideally be part of a long-term population monitoring programme conducted over years — not just to get numbers, but to get a much deeper understanding of the animal. After all, we are talking about the only lions in all of Asia."

*With inputs from Jacob Koshy.*

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