

Why do elephants face a jumbo challenge? | Explained

What has the latest study thrown up? Why was the census conducted across four landscapes? Which are the best habitats for elephants? What are some of the issues the elephant population has to encounter? What can be done about elephant-human conflicts?

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Asian elephants (*Elephas maximus*) occupy a fraction of their historical range in the Indian subcontinent. File. | Photo Credit: M. Sathyamoorthy

The story so far: The Wildlife Institute of India (WII) released its report, the 'Status of Elephants in India', on October 14. The estimation of 22,446 elephants across four landscapes elicited comparison with the 2017 figure of 29,964, although the report said the DNA-based method, used for the first time to estimate elephants, "may be treated as a new monitoring baseline for further research".

Why was the new methodology adopted?

The first elephant population estimation was conducted in 1929 across the forests of the United Province, comprising present-day Uttar Pradesh and Uttarakhand.

Estimates till 1978 relied on the direct total count method, involving the averaging of figures obtained from three direct visual counts conducted at 10-day intervals at the forest beat level. The inception of Project Elephant in 1992 led to a shift in population estimation practices every five years, employing diverse methods, including total count, tracking-based total count, registration count, water hole count, sample count, transect count, and dung count. The choice of method varied across sites for elephant population monitoring, making comparison difficult. The Synchronised Elephant Census was conducted in 2005, 2010, and 2017, using total (direct) count, sample block count, line transect dung (indirect) count, and waterhole count. The limitations of this method led to the Synchronous All-India Elephant Estimation (SAIEE) method for 2021-25.

What is SAIEE 2021-25?

Asian elephants (*Elephas maximus*) occupy a fraction of their historical range in the Indian subcontinent. The last pre-SAIEE estimate in 2017 put their number at 29,964, down by 87 from the 2012 count. Now, the SAIEE has revealed that there are 22,446 elephants, a drastic drop of 7,518 over eight years. However, wildlife experts from WII and State Forest Departments advised against any comparison because the new programme sought to eliminate the drawbacks of the previous methods and could not be undertaken in areas such as the Andaman Islands (25 elephants in 2017), primarily due to a low budget. They said the SAIEE data would serve as the baseline for estimation using the method in future. SAIEE entailed dividing India into 100 sq. km cells and then into 4 sq. km grids, each uniquely coded so that subsequent inferences could be compared on the same spatial scale and extent. Enumerators surveyed 6,66,977 km on foot covering 1,88,030 trails and transects, and collected 21,056 elephant dung samples during the three-phase exercise.

The focus of the first phase was on data collection with these components: carnivore and mega-herbivore sign encounters, ungulate (hoofed animals) abundance, vegetation status, human disturbance, and dung counts. Phase Two involved assessing habitat characteristics and anthropogenic impacts, such as vegetation cover, forest patch size, human footprint etc. Phase Three emphasised spatially explicit abundance estimation, with human impact and habitat characteristics factored in.

How have the landscapes fared?

The study was conducted across four elephant-bearing landscapes. The Western Ghats landscape encompassing Karnataka, Kerala, and Tamil Nadu accounted for 11,934 elephants, which is 53.17% of the all-India estimate. Karnataka led the chart with 6,013 elephants, followed by Tamil Nadu with 3,136 and Kerala with 2,785 elephants. The North Eastern Hills and Brahmaputra Flood Plains, comprising seven (minus Sikkim) northeastern States and northern West Bengal, offered the second-best habitat with 22.22% of India's elephants. Assam topped the table here with 4,159 elephants. The other two landscapes — Shivalik Hills and Gangetic Plains (Uttarakhand, Uttar Pradesh, and Bihar) and Central India and Eastern Ghats comprising seven States, including Andhra Pradesh, Maharashtra, Telangana, Odisha, and southern West Bengal — recorded 9.18% and 8.42% of the country's total elephants. Uttarakhand recorded the most elephants (1,792) in these two landscapes, followed by Odisha with 912.

What does the study portend?

The study points to rapid fragmentation of elephant landscapes due to expanding commercial plantations (coffee and tea), invasive plants, farmland fencing, human encroachment, mining, and developmental projects. This fragmentation has prompted elephants to venture into areas devoid of the animal for at least 200 years, resulting in conflicts with humans lacking cultural coexistence experience and posing a threat to elephant populations. A case in point is Andhra Pradesh to which herds migrated from three adjoining States. The first herd moved from the Hosur-Dharmapuri forests of Tamil Nadu to Kuppam and Palamaner Forest Divisions of Chittoor district in 1980. More elephants from Tamil Nadu and Bannerghatta in Karnataka migrated between 1983 and 1986. While Karnataka harbours the highest number of wild elephants in India, it is also one of the major hotspots for human-elephant conflict. For instance, the contiguous forests of Nagarhole, Bandipur, and BRT Hills face threats from frequent forest fires, development projects and plantations of acacia and eucalyptus. Similar issues have escalated human-elephant conflicts in Kerala. Tamil Nadu's most critical habitats are the Nilgiris and Coimbatore Forest Division, where conflicts have claimed 150 human and 170 elephant lives so far. Experts underscore the need to engage with communities for sensitisation campaigns in elephant-occupied areas and newly colonised places.

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