

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 4536
TO BE ANSWERED ON 20.03.2020

Census of Tigers

4536. SHRI PARBHUBHAI NAGARBHAI VASAVA:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) the efforts made by the Government during the last five years for the conservation and increase in tiger population in the country;
- (b) the number of tigers in the country before 2014;
- (c) the method being adopted for the census of tigers; and
- (d) the number of tigers as per the latest census along with the increase in number of tigers registered during the last three years?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI BABUL SUPRIYO)

- (a) The efforts made by the Government of India through the National Tiger Conservation Authority during the last five years for the conservation and increase in tiger population in the country are at **Annexure-I**.
- (b) As per the quadrennial All India tiger estimation, tiger estimates during the 2006 and 2010 assessments are as follows:

2006	2010
1411 (1165-1657)	1706 (1520-1909)

- (c) The All India Tiger Estimation uses a double sampling approach for estimating tigers details of which are at **Annexure-II**.
- (d) As per the quadrennial All India Tiger Estimation, tiger numbers over the last 4 cycles are at **Annexure-III**.

ANNEXURE REFERRED TO IN REPLY TO PART (a) OF THE LOK SABHA UNSTARRED QUESTION NO. 4536 ON CENSUS OF TIGERS DUE FOR REPLY ON 20.03.2020

Efforts made by the Government of India through the National Tiger Conservation Authority during the last five years for the conservation and increase in tiger population in the country are as under:-

- (i) Adoption of M-STrIPES, an android application for smart patrolling and collection of ecological data from the field.
- (ii) Completion of fourth cycle of the All India Tiger Estimation using refined methodology with following subtle modifications.
 - (a) adoption of a 2 sq. km. grid instead of 4 sq. kms. to improve precision of accuracy of the results.
 - (b) Collection of data using M-STrIPES application.
- (iii) Completion of Management Effectiveness Evaluation of Tiger Reserves in 2018 cycle wherein 21 tiger reserves have been rated in 'Very Good' category, followed by 17 tiger reserves rated in 'Good' category and 12 tiger reserves rated in 'Fair' category.
- (iv) Economic valuation of 10 more tiger reserves has been completed.
- (v) Four new tiger reserves namely, the Rajaji Tiger Reserve in Uttarakhand, the Pilibhit Tiger Reserve in Uttar Pradesh, the Orang Tiger Reserve in Assam and the Kamlang Tiger Reserve in Arunachal Pradesh, have been notified which has taken the coverage of Project Tiger to 2.21% of the country's geographical area.
- (vi) Standard Operating Procedures (SOP) have been amended in parts based on recent field experiences.
- (vii) After pilot testing unmanned aerial vehicles at the Panna Tiger Reserve, the use of Drones/ Unmanned Aerial Vehicles for surveillance and monitoring is being carried out in 13 tiger landscapes and first set up equipment has been handed over to Panna Tiger Reserve Authorities. A technical manual has also been published in this regard.
- (viii) A framework for conducting security audit has been prepared, validated and was used for assessing security apparatus across 25 tiger reserves in Phase-I.
- (ix) The third Asia Ministerial Conference on Tiger Conservation was successfully held at New Delhi from April 12-14, 2016, wherein the Hon'ble Prime Minister impressed upon all participants that Tiger Conservation is not a choice but an imperative. The conference concluded with the New Delhi Resolution on Tiger Conservation.
- (x) To ensure success of tiger conservation efforts, financial and technical inputs are being provided to tiger bearing forests outside tiger reserves which are assessed for quality of management interventions through the Conservation Assured | Tiger Standard (CA|TS) framework. Till date the Lansdowne and Ramnagar Divisions in Uttarakhand have been CA|TS accredited.
- (xi) Sensitization workshops held for agencies such as the Railways, National Highway Authority of India, EIA assessors of the MoEF&CC besides IRTS probationers to ensure

that tiger is not seen as a drag on development. Further, Technical advise has been provided on formulating mitigating strategies for linear infrastructure with the WII, Dehradun which has been advised to the State.

- (xii) On the international front, a Memorandum of Understanding (MoU) with Myanmar has been signed for Combating Timber Trafficking, and Conservation of Tigers and other Wildlife. Further, a tripartite MoU between the National Tiger Conservation Authority, Wildlife Institute of India and A.N. Severtsov Institute of Ecology & Evaluation was agreed upon and signed on 4.12.2018.
- (xiii) During the 18th CoP held at Geneva in August 2019, based on an intervention from India, a slew of decisions were adopted to intervene in territories which had facilities for keeping big cats as a reinforcement of decision 14.69.
- (xiv) Frontline forest staff is being encouraged for their work through an award of Rs. 1.00 lakh.
- (xv) Interstate landscape level meetings for the field officers of adjacent tiger reserves and tiger bearing divisions have been initiated for capacity building and coordination, since 2018.

ANNEXURE REFERRED TO IN REPLY TO PART (c) OF THE LOK SABHA UNSTARRED QUESTION NO. 4536 ON CENSUS OF TIGERS DUE FOR REPLY ON 20.03.2020

The All India Tiger Estimation uses a double sampling approach for estimating tigers, the details of which are as under:-

The countrywide assessment of tiger status uses a double sampling approach to estimate the distribution and abundance of tigers in India. The first component of the double sampling consists of ground surveys of all potential tiger bearing forests in 18 States wherein the following information is collected by the State Forest Department personnel:

- Ground surveys for determining occupancy of habitat patches by tigers and other predators
- Line transects to estimate prey abundance
- Sampling plots on the line transects to assess
 - habitat characteristics,
 - human impacts and
 - prey dung density.

Alongwith the information generated by the ground surveys, latest remotely sensed data on (a) landscape characteristics, (b) human “foot-print”, and (c) habitat attributes are subsequently used to model tiger occupancy and abundance.

The second component of the double sampling consists of (a) scientifically rigorous abundance estimation in select sampling units using a remote camera trap based capture recapture technique for estimating tiger and other carnivore abundance and (b) line transect based Distance sampling for estimating prey abundance.

A relationship between the two components i.e. tiger abundance and covariates is then obtained to predict tiger numbers in areas where tiger signs were found but no camera trapping was done.

During the 2018 estimation cycle, 83% of the tigers were photo captured while only 17% were predicted based on the robust relationship between component one and two.

ANNEXURE REFERRED TO IN REPLY TO PART (d) OF THE LOK SABHA UNSTARRED QUESTION NO. 4536 ON CENSUS OF TIGERS DUE FOR REPLY ON 20.03.2020

Details of tiger estimation pertaining to tiger landscapes in the country, for the years 2006, 2010, 2014 and 2018

State	Tiger Population			
	2006	2010	2014	2018
<i>Shivalik-Gangetic Plain Landscape Complex</i>				
Uttarakhand	178	227	340	442
Uttar Pradesh	109	118	117	173
Bihar	10	8	28	31
Shivalik Gangetic	297	353	485	646
<i>Central Indian Landscape Complex and Eastern Ghats Landscape Complex</i>				
Andhra Pradesh	95	72	68	48
Telangana	-	-	-	26
Chhattisgarh	26	26	46	19
Madhya Pradesh	300	257	308	526
Maharashtra	103	169	190	312
Odisha	45	32	28	28
Rajasthan	32	36	45	69
Jharkhand	-	10	3*	5
Central India	601	601	688	1033
<i>Western Ghats Landscape Complex</i>				
Karnataka	290	300	406	524
Kerala	46	71	136	190
Tamil Nadu	76	163	229	264
Goa	-	-	5	3
Western Ghats	412	534	776	981
<i>North Eastern Hills and Brahmaputra Flood Plains</i>				
Assam	70	143	167	190
Arunachal Pradesh	14	-	28**	29
Mizoram	6	5	3*	0
Nagaland	-	-	-	0
Northern West Bengal	10	-	3*	0
North East Hills, and Brahmaputra	100	148	201	219
<i>Sunderbans</i>	-	70	76	88
TOTAL	1411	1706	2226	2967

* From scat DNA

** From camera trap data and scat DNA
