

**HIMACHAL PRADESH FOREST DEPARTMENT  
WILDLIFE WING**

**No. WL/ Monkey Population Estimation/**

**Dated Shimla-171001, the**

From: Pr. CCF (Wildlife) &  
Chief Wildlife Warden, H.P.  
Shimla -171001

To: Pr. Secretary (Forests)  
to Govt of HP, Shimla-171002

Subject: Monkey Population Estimation of Rhesus Macaques in HP-  
Recommendation for inclusion into the category of Vermin-Reg.

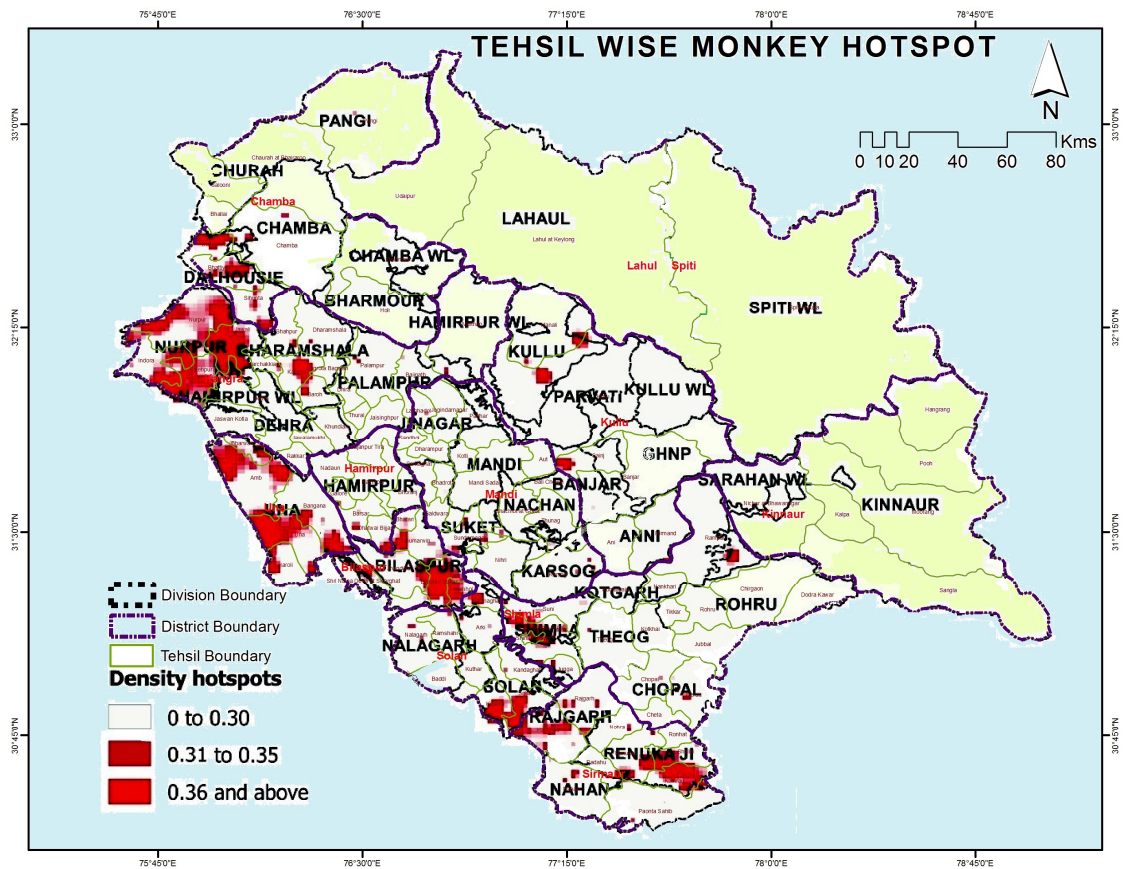
Sir,

Please refer to your office letter No. FFE-B-F96)-5/2010-I dated 22<sup>nd</sup> June 2015, and in continuation to this office, Lr No. WL/Monkey Population Estimation/3663 dated 16.9.2015, (for declaring monkey as vermin in Shimla urban), No. 6043 dated 9.2.2016 (for declaring monkey as vermin for the entire state), where in a proposal was submitted to your good office for getting the Rhesus macaque declared as a vermin under sec 62 of the Provisions of Wildlife (Protection) Act, 1972.

2 But, now keeping in view the directions contained in GOI letter No. I-26/2014-WL-I9pt) dated 4<sup>th</sup> June 2015, copy of which was endorsed to your office as well, where in it was desired, to consider revising the proposal **with the district/tehsil/village boundaries** to define such areas of hot spots of monkeys, instead of administrative boundaries of forest divisions, where the notification should be applicable, a revised proposal is prepared and re submitted as under.

3. As per the final report of estimation of Rhesus macaque (Macaca mulatta) suitable area of habitat for rhesus macaques was found to be 27276.83 sq. km. Northern parts of HP comprising high altitude alpine habitats are not suitable for rhesus macaques. Although overall trend of population compared to two previous estimations is showing a decline in HP, but some of the divisions **viz. Rohru, Renukaji, Bilaspur, Palampur, Nurpur, Dharamshala, Pangi and Dalhousie** have shown a sharp increase in population, probably due to migration of individual macaques after sterilisation as sometimes they are not accepted by their own social groups. At least, 10 divisions namely Sarahan WL, Shimla, Anni, Rajgarh, Suket, Kullu WL, GHNP, Chamba, Bharmour and Nalagarh have shown a marginal change, thus the situation of conflict remained same.

4. Based on the density calculations of monkey groups, considering a density of  $>0.36$  and above as a hot spot (place of maximum conflict with humans), and by superimposing monkey hot spot map prepared by the wildlife wing on the tehsil map of the state, a total of 39 Tehsils out of 75 in 12 districts of the state have been identified as monkey hotspots (troubled zone, which needs immediate intervention) as depicted below (Table-I), where the monkey problem **needs to be managed by culling only**. The revised map with tehsil boundaries and the hot spots depicted in the map is attached for ready reference (the northern portion of the map shown in different colour, i.e. lime green, is absolutely devoid of monkeys). The delineation up to village boundaries was not done as the same is not feasible, as there were no detailed raster maps available in the department, or Bhuvan GIS Lab (Dept. of Env) showing even tehsil/village boundaries in the state. Also, if the village is chosen as a unit, not only depicting villages will be too cumbersome, but also monkeys keep migrating between villages (average home range is 5 sq km) depending upon the availability of food etc., thus making it infructuous, as a village not notified as hot spot may turn out to be a hot spot or vice versa, with the migration of the monkeys with in no time.



**The Hotspot areas of high density are depicted in red color with Division boundaries (Map-1)**

SI No.	Name of District	No. of tehsils	Name of Tehsils
1	Chamba	4	Dalhousie, Bhatiyat, Sihunta, Chamba
2	Kangra	7	Nurpur, Indora, Fatehpur, Jawali, Kangra, Palampur, Baroh
3	Una	5	Bharwain, Amb, Una, Haroli, Bangana,
4	Bilaspur	5	Ghumarwin, Nainadevi, Bilaspur Sadar, Namhole, Darlaghat
5	Shimla	4	Shimla Urban, Shimla Rural, Rampur, Nerwa
6	Sirmour	5	Pachhad, Rajgarh, Renuka, Shillai, Kamrau
7	Kullu	3	Manali, Kullu, Sainj
8	Hamirpur	2	Badsar, Bijhari
9	Solan	3	Nalagarh, Kasauli, Solan
10	Mandi	1	Sundarnagar
Total no of hotspots		39	

**The Tehsil wise Hotspot areas identified in HP of density >0.36 groups/sq km-Table-1**

5. A brief perusal of the attacks on human beings by monkeys, since the process of monkey sterilization in the state in 2006 reveals that, **there is an increase in the no. of attacks**, the maximum being in 2013-14

Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
No of attacks	18	71	112	163	402	399	358	513	59	102
Compensation paid in lakhs	0.55	3.38	5.57	8.92	16.99	20.08	15.80	24.24	1.38	2.38

**Year wise no of attacks by monkeys and compensation paid thereof in lakhs**

6. A perusal of the above data reveals that, **in the last 3 years alone, reportedly there were 674 no of monkey attacks and a compensation of Rs. 28 lakhs has been disbursed from the state exchequer for the sufferers on account of attack by the macaques.** Though the efforts have been made in the past to segregate these sterilised monkeys and house them in an enclosure namely “Semi Free Ranging Vanar Vatika” till their behavior is stabilized in the proximity of the MSCs, the same is still awaiting a nod from CZA.

7. Though the sterilisation programme has been running successfully in the state, since 2006-07, and more than 51% of the estimated population of the macaques in the state have been sterilised, yet, there is a need to eliminate the monkeys by culling as they have become commensal permanently. As on date the ‘Monkey Management’ is the most challenging issue for the wildlife wing and the Government; and facing

great hardships due to public criticism. But monkeys have virtually acquired the status of a pest (though not declared) to agriculture, horticulture and human habitations (due to their Commensal behavior). But all monkeys including Rhesus is a protected species in India, coming under Schedule II-Part I as per the provisions of Wildlife (Protection) Act, 1972. On the other hand the monkeys have become the biggest public nuisance today. They destroy crops (kitchen gardens, orchards), bite people, contaminate the drinking water in storage tanks and there by transmit diseases, steal things, tear clothes, snap telephone and electricity wires, cable TV and dish TV set up, broad band wires, break tube lights, street lights/bulbs, vehicle window wipers, rear view mirrors, create dents on the roof of the parked vehicles by jumping on them, raiding crops, stealing and snatching edible items from the passers by creating panic among the people, sometimes even risking their lives (people fall from roof out of fear of the monkeys), steal food by gaining entry into homes, snatch articles (Jhaku temple in Shimla) thus the human-monkey conflict is always on rise, sometimes resulting into casualties.

8. Long term solution for the human-monkey conflict management includes controlling their population by taking preventive measures such as sterilisations which is already in action, on the other hand short term or immediate solution include the elimination of a sizeable population of monkeys, which have permanently become commensal in behaviors and are coming in conflict with the humans and have turned out to be crop damaging. Though during 2004, feeding of monkeys in public places except temple premises was prohibited within Shimla Municipal Limits, under section 302 of Municipal Corporation Act, but the same is not applicable in other parts of the state, hence, the forest department is helpless in controlling feeding of monkeys by public.

9. The wildlife wing has already exhausted all possible deterrents but the impact of the attempts made to prevent the menace has been **insignificant. Not with standing the efforts made by the wildlife wing, the public at large is dissatisfied with the results.** The last but not the least, the matter is being raised time and again in the Hon'ble HP Vidhan Sabha for discussion and the Government is put to an embarrassing situation. Now, the Hon'ble Forest Minister has assured the house that all possible efforts will be made to get the monkey declared as vermin under relevant provision of WLP Act 1972.

Keeping in view the above alarming situation, it is requested that, the case may be recommended to Government of India, for declaring the Rhesus macaque (*Macaqua mulatta*) as a "**Vermin**" by invoking the powers under Section 62 of the WL (Protection) Act 1972, **for an initial period of one year, in the selected hot spots (tehsils) depicted in para 4 in the state of Himachal Pradesh, especially in private premises** (including agriculture and horticulture fields), **urban habitations**, places of

public/tourism importance, but excluding the forest patches to resolve human macaque conflict in the state.

Submitted for favor of further immediate necessary action please.

**Encl: Detailed hot spot map**

Yours faithfully,

Principal Chief Conservator of Forests (Wildlife) & Chief  
Wildlife Warden, Himachal Pradesh- Shimla-I

Endt No. As above

Dated .

Copy to Pr CCF (HoFF), HP, Shimla for favour of information and further necessary action

Principal Chief Conservator of Forests (Wildlife) &  
Chief Wildlife Warden, Himachal Pradesh- Shimla-I

THROUGH SPL MESSENGER

HIMACHAL PRADESH FOREST DEPARTMENT  
WILDLIFE WING

No. WL/ Monkey Population Estimation/  
Dated Shimla-I71001, the

From: Pr.CCF (Wildlife) &  
Chief Wildlife Warden, H.P.

To: Addl. Chief Secretary (Forests)  
to Govt of HP, Shimla-I71001

Subject: Monkey Population Estimation of Rhesus Macaques in HP-  
Recommendation to be included in the category of Vermin-Reg.

Sir,

In continuation to this office, Lr No. WL/Monkey Population Estimation/3663 dated 16.9.2015, your office Lr No. FFE-B-F(6)-5/2010-I dated 24.3.2015 and in furtherance of your office Lr No. FFE-B-F(6)-5/2010-I dated 16.9.2015, addressed to Jt. Director (Wildlife), GOI, where in a proposal was submitted to MoEF&CC, for declaring the Rhesus macaque as a vermin in the Shimla Municipal corporation for a period of 6 months under the Provisions of Wildlife (Protection) Act, 1972, but so far no decision of the Government of India, has been received in this regard so far.

2 In this connection, the proposal is re-submitted, keeping in view the directions contained in your letter dated 24.3.2015 quoted supra and the public reports of ever increasing monkey menace in the state, a state wide survey for Monkey Population Estimation has been carried out by the Wildlife wing, during the period from 30<sup>th</sup> June to 2<sup>nd</sup> July, 2015 under the guidance of primate expert, Dr H Kumara of SACON (Salim Ali Centre for Ornithology and Natural History) Coimbatore, an autonomous body under MoEF&CC. The data so collected from the field was under processing on the GIS platform all these days and now, the primate expert Dr H Kumara has submitted his report recently on the population of Rhesus macaque and its

density division wise, the monkey hot spots in the state Range wise and an analysis on the increase or decrease division wise.

3. The latest method in vogue was applied for the first time in Himachal Pradesh, in estimation of the macaques, (applied earlier in Andaman's for Long tailed macaque, Karnataka for Bonnet macaque by the same scientists), that way the state has done a pioneering work in the field of Macaque estimation. Since the entire terrain of Himachal Pradesh comprised of highly undulating mountain ranges, straight transect lines could not be established. Thus in each forest administrative beat, two to three existing trails or animal pathways (transect lines) were selected for sampling the primates and the GPS instruments were also applied where ever practicable. Each transect line was separately marked on I:15000 or I:50000 sheet whatever was available in digital form/hard copy, and three copies of the same were given to the respective teams. Each team included trained department personnel and his own assistants. A total of 2631 transects were walked consecutively for three days, between 06:00 hr and 11:30 hr or till the track is completely traversed on the same track and the tracks were fixed with GPS. Out of these, 1617 transects which were not intersecting with beat boundaries and other transects were selected for analysis. The total kilometers walked amounted to 12782.85 km. During the walk each sighting of the primate species was recorded on map and in the data sheet. Sufficient time was spent with the group to record the group size, composition and demography of the individuals in the group.

4. Coming to the analysis part, all the sampling trails and detection of monkeys were digitized on toposheets, keeping digital toposheets obtained from Survey of India by Forest Department of Himachal Pradesh using ArcGIS 9.2 (ESRI co.). A total of 8500 non-overlapping occurrence records were obtained for rhesus macaques. These occurrence records were used to model the 'realized niche' (possible extent of the niche of species) using maximum entropy algorithm available in MaxEnt.

5. As per the final report of estimation of Rhesus macaque (*Macaca mulatta*) by Dr H N Kumara, based on the density, average group size and suitable area available in each division, the abstract of relevant facts and figures of Macaque population in the state, is as under.

1. The estimated average home range size of Rhesus Macaque is 5 sq km
2. Average Group size is  $31 \pm 9$  numbers
3. Mean Encounter Rate is  $1.38 \pm 1.35$  groups per Km length
4. Total no of estimated Macaque groups is 5153 over an area (suitable for macaque habitation) of 27276.83 sq.km of the state, which comes to  $0.18 \pm 0.09$  group per sq km
5. Total Macaque population of the state is 2,07,614

6. Over all error in estimation is 10215 or 4.92%

Suitable area of habitat for rhesus macaques was found to be 27276.83 sq. km. Northern parts of HP comprising high altitude alpine habitats are not suitable for rhesus macaques. Suitability Map is attached as A-I Division wise breakup of the population is given in Annexure A-II. Although overall trend of population compared to two previous estimations is showing a decline in HP, due to the pioneering work done by the state of HP by sterilising 103359 no of macaques so far in 8 MSCs of the state which is again a record in the country, but some of the divisions **viz. Rohru, Renukaji, Bilaspur, Palampur, Nurpur, Dharamshala, Pangi and Dalhousie** have shown sharp increase in population, probably due to migration of individual macaques after sterilisation as sometimes they are not accepted by their own social groups or due to increase in religious tourism as devotees continuously encourage the migration of monkeys to the concentration of devotees who feed them or due to food available areas due to upcoming horticulture crops. At least, 10 divisions namely Sarahan WL, Shimla, Anni, Rajgarh, Suket, Kullu WL, GHNP, Chamba, Bharmour and Nalagarh have shown a marginal change, thus the situation of conflict remains standstill.

Based on the density calculation of monkey groups, considering a density of  $>0.35$  and above as a hot spot (place of maximum conflict with humans), a total of 348 beats were identified in 83 ranges of the state, as hotspot regions and the same is depicted in the map as below. The detail of ranges falling under these hotspots is attached as Annexure A III.

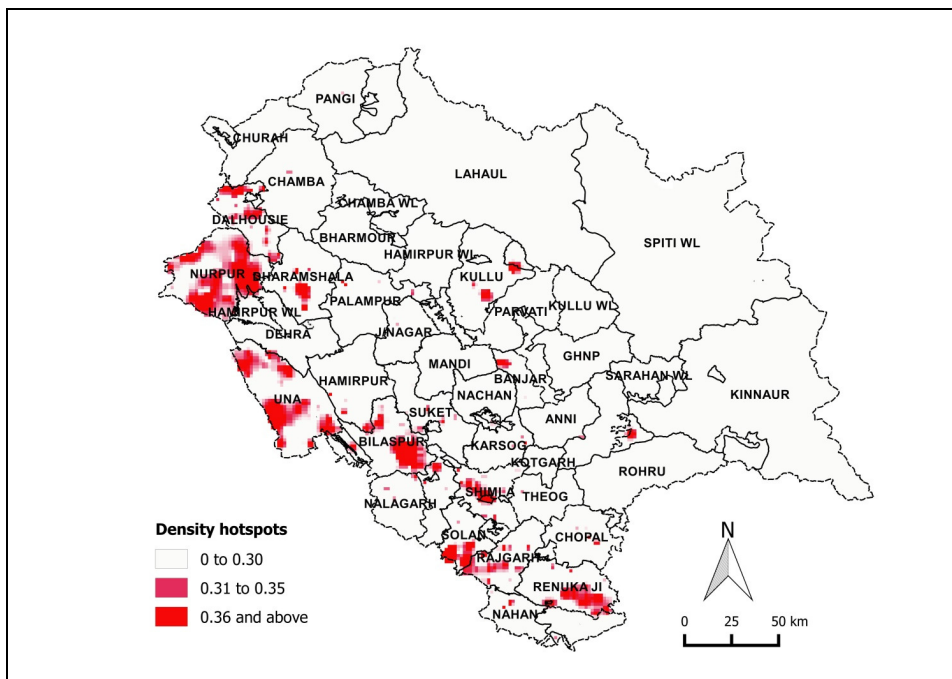


Fig 3. Hotspot areas of high density are depicted in dark color

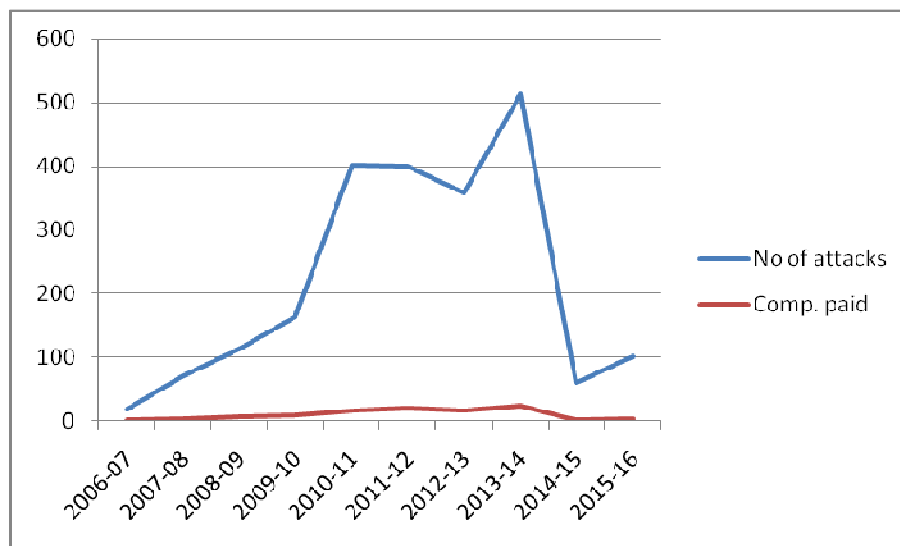


According to the Hot spot map generated by the Primate scientists depicted above, **348 beats spread in 83 Ranges** are identified as highly problematic (Annexure II), which includes all the beats of Shimla Urban, the case of which has already stood submitted to Govt of India, and the problem is required to be addressed holistically, as per the mandate of the Government of Himachal Pradesh.

6. A brief perusal of the attacks of human beings by monkeys, since the process of monkey sterilization in the state in 2006 reveals that, there is an increase in the no. of attacks, the maximum being in 2013-I4, which is reproduced as under, is presumably due to change in the behavior of the monkeys when released into their social group back after sterilization.

Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
No of attacks	18	71	112	163	402	399	358	513	59	102
Compensation paid in lakhs	0.55	3.38	5.57	8.92	16.99	20.08	15.80	24.24	1.38	2.38

Year wise no of attack by monkeys and compensation paid thereof in lakhs



Graphical representation of no of attacks and compensation paid

7. A perusal of the above data reveals that, in the last 3 years only, reportedly there were 674 no of monkey attacks in the state, and a compensation of Rs. 28 lakhs has been disbursed from the state exchequer for the sufferers on account of attack by the macaques. Though the efforts have been made in the past to segregate

these sterilised monkeys and house them in an enclosure namely “Semi Free Ranging Vanar Vatika” till their behaviour is sterilised in the proximity of the MSCs, the same were not approved by the CZA on the plea that they come under the definition of a zoo.

Though the sterilisation programme has been running successfully in the state, since 2006-07, and a considerable number of monkeys have already been sterilized, i.e. upto 49.78 % of the estimated population of the macaques in the state (as in June, 2015), yet, there is a need to eliminate the monkeys by culling as of now the rate of monkey trapping has come down drastically, as the monkeys have become meticulous and are not coming into traps, or those caught are found to have been either already sterilised or they were pregnant or infant etc., More, over the Animal activists are creating great number of hurdles at every stage for carrying out the sterilizations smoothly. Also, the primates are likely to live upto their full span of life i.e. up to 17-20 years, hence, the impact of these sterilizations is likely to yield results later say after 2021 or so, but as on today the rate of growth of monkey population has come down, still the conflicts are continuing with the humans unabated.

8. As on date the ‘Monkey Management’ is the most challenging issue; and the wildlife wing of the HP Forest Department is facing great hardships due to public criticism. On one hand the monkeys are considered as divine incarnation and feed them profusely turning them to Commensal behavior making them to hover around the habitations, leading to conflict with humans. But, they have virtually acquired the status of a pest (though not declared) to agriculture, horticulture and human habitations (due to their Commensal behavior). But all monkeys including Rhesus is a protected species in India, coming under Schedule II-Part I as per the provisions of Wildlife (Protection) Act, 1972. On the other hand the monkeys have become the biggest public nuisance today. They destroy crops (kitchen gardens, orchards), bite people, contaminate the drinking water in storage tanks and there by transmit diseases, steal things, tear clothes, snap telephone and electricity wires, cable TV and dish TV set up, broad band wires, break tube lights, street lights/bulbs, vehicle window wipers, rear view mirrors, create dents on the roof of the parked vehicles by jumping on them, raiding crops, stealing and snatching edible items from the passers by creating panic among the people, sometimes even risking their lives (people fall from roof out of fear of the monkeys), steal food by gaining entry into homes, snatch articles (Jhaku temple in Shimla) thus the human-monkey conflict is always on rise, sometimes resulting into casualties. Long term solution for the human-monkey conflict management includes controlling their population by taking preventive measures such as sterilisations, on the other hand short term or immediate solution include the elimination of a sizeable population of monkeys at the first instance all those which are coming in conflict with the humans or crop damaging.

Though during 2004, feeding of monkeys in public places except temple premises was prohibited within Shimla Municipal Limits, under section 302 of

Municipal Corporation Act, but the same is not applicable in other parts of the state, hence, the forest department is helpless in controlling feeding of monkeys by public.

9. The Govt of Himachal Pradesh has already exhausted all possible deterrents like use of Air guns, Rubber bullets, Ultrasonic Monkey repellent devices etc., but their impact to prevent the menace is **insignificant**. Local people also keep trying fire crackers, use of catapults, keeping watch dogs etc., but yet a lot of damage is caused to their crops and frequently grabbed their food articles by finding an entry into their homes, besides damaging the window panes of the cars parked in front of their homes etc., and have created a panic situation in most of the urban habitations.

Keeping in view the above alarming situation, it is requested that, the case may be recommended and forwarded to Government of India, for declaring the Rhesus macaque (*Macaqua mulatta*) as a “Vermin” by invoking the powers under Section 62 of the WL (Protection) Act 1972, **for an initial period of one year, in 348 beats and 83 Ranges in state of Himachal Pradesh, especially in private premises (including agriculture and horticulture fields), urban habitations, places of public/tourism importance, but excluding the forest patches to resolve human macaque conflict in the state.**

Submitted for favour of further immediate necessary action please.

Yours faithfully,

Principal Chief Conservator of Forests (Wildlife) & Chief  
Wildlife Warden, Himachal Pradesh- Shimla-I

## ANNEXURE -II

DIVISION	Density (strip area)	Average group size	Population estimation		
			2004	2013	2015
<b>Bilaspur circle</b>					
BILASPUR	0.33	33	12383	9151	13810
KUNIHAR	0.19	38	7569	5310	6035
NALAGARH	0.13	38	2021	2996	3114
SHIMLA WL	0.25	22	4405	867	964
<b>Chamba circle</b>					
BHARMAUR	0.06	35	1491	1916	1839
CHAMBA	0.14	38	6912	7648	7888
CHURAH	0.13	31	16370	4854	2756
DALHOUSIE	0.39	40	28077	8404	10869
PANGI	0.22	45	1409	973	2764
<b>Dharamshala circle</b>					
DHARAMSHAL A	0.2	36	13787	6841	8884
NURPUR	0.37	30	18885	12548	14931
PALAMPUR	0.24	31	16319	6340	8676
<b>Dharamshala Wilflife North Circle</b>					
CHAMBA WL	0.06	32	182	1026	419
HAMIRPUR WL	0.11	4	1538	1989	154
<b>GHNP Circle</b>					
GHNP	0.25	14	1860	1684	1231
KULLU WL	0.1	26	3349	2000	1611
<b>Hamirpur Circle</b>					
DEHRA	0.11	35	0	8601	6246
HAMIRPUR	0.17	25	13487	11772	5541
UNA	0.34	31	11798	20454	18174
<b>Kullu Circle</b>					
KULLU	0.27	16	4075	3597	3052
PARVATI	0.07	10	5964	2949	424
SERAJ	0.24	22	2451	3868	2088
Lahul	0	0	0	0	0
<b>Mandi circle</b>					
JOGINDERNAGAR	0.16	38	10046	9430	4609
KARSOG	0.17	38	7055	5916	3611
MANDI	0.14	38	6808	5348	4128
NACHAN	0.15	34	6767	4422	3129

SUKET	0.17	42	7510	7904	7797
<b>Nahan Circle</b>					
NAHAN	0.22	39	13888	6981	5743
PAONTA SAHIB	0.11	35	9224	3108	2546
RAJGARH	0.26	38	12500	10041	9905
RENUKA JI	0.37	27	75	5902	12466
SOLAN	0.23	33	1833	7900	5319
<b>Rampur circle</b>					
ANNI	0.19	23	5411	2790	3015
KINNAUR	0.03	32	3832	2690	575
KOTGARH	0.13	16	2555	3567	730
RAMPUR	0.08	27	6473	4297	2465
<b>Shimla Circle</b>					
CHOPAL	0.16	27	4653	3937	3293
ROHRU	0.09	49	4582	2906	4855
SHIMLA	0.05	38	11165	5827	5580
THEOG	0.15	21	5602	3761	2092
Shimla (Urban)	0.75	33	1786	1464	1166
<b>Shimla Wildlife South</b>					
SARHAN WL	0.11	29	1071	1006	673
SHIMLA WL	0.25	22	4405	1959	964
Spiti	0	0	0	0	0
<b>Total estimated population</b>			299787	224613	207614

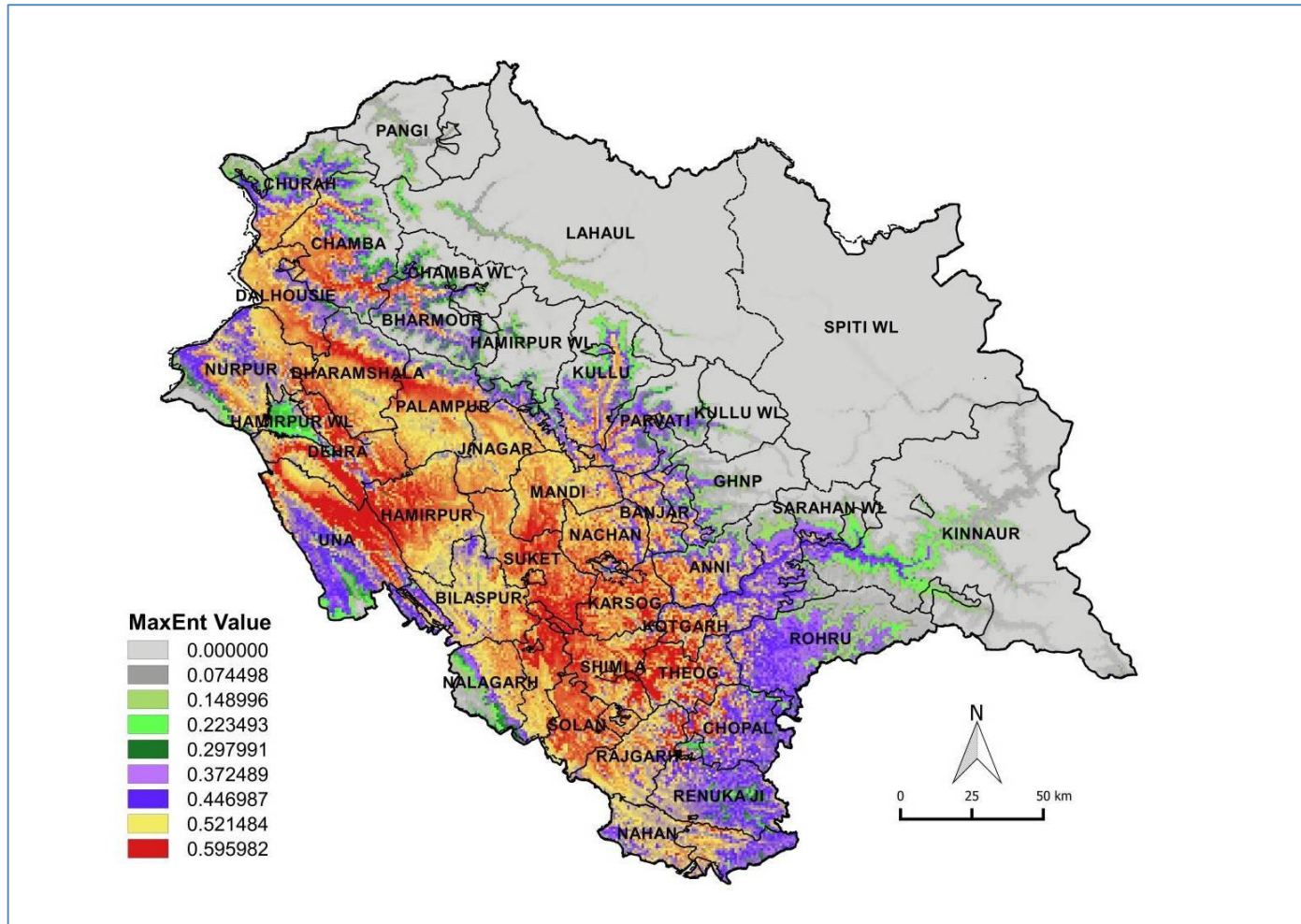
Annexure III- Circle wise names of Ranges with number of beats falling under density hotspots

Circle	Division	Range	Beat
Bilaspur	Bilaspur	Bharari	6
		Ghumarwin	5
		Jhandutta	5
		Sadar	13
		Swarghat	5
	Kunihar	Arki	2
		Darla	2
	Nalagarh	Kohu	2
		Nalagarh	1
Ramshehar		1	
Chamba	Chamba	L/Chamba	2
	Churah	Bhalei	1
	Dalhousie	Army Area	1
		Bakloh	7
		Bhattiyat	8
		Chowari	8
		Dalhausie	9
	Pangi	Killar	1
Dharamshala	Dharamshala	Dharamshala	2
		Kangra	9
		Lapiana	2
		Malan	1
	Nurpur	Indora	14
		Jawali	13
		Kotla	9
		Nurpur	15
		Rey	15
	Palampur	Palampur	2
	Hamirpur WI	Naina Devi	1
Pong Dam		1	
Ghnp	Kullu WI	Inderkila National Park	1
		Karsog	1
Hamirpur	Dehra	Dehra	2
		Nagrrota Surian	1
	Hamirpur	Barsar	3
		Bijhari	3
	Una	Amb	9
		Bangana	1
		Bharwain	12
Ramgarh		7	

		Una	13
Kullu	Banjar	Sainj Range	3
	Kullu	Naggar	5
		Patalikuhhal	1
		Patlikuhhal	2
Mandi	Joginder Nagar	Ladbharol	1
	Karsog	Seri	3
	Suket	Jaidevi	3
		Kangoo	1
		Suket	1
Nahan	Nahan	Jamta	2
		Trilokpur	1
	Paonta Sahib	Bhagani	2
		Girinagar	1
		Majra	1
	Rajgarh	Narag	7
		Rajgarh	4
		Sarahan	5
	Renuka Ji	Kafotta	8
		Nohra	1
		Renuka Ji	6
		Sangrah	1
		Shillai	4
	Solan	Dharampur	8
		Kandaghat	1
		Parwanu	11
		Solan	1
Subathu		1	
Rampur	Anni	Arsoo	1
	Rampur	Rampur	1
Shimla	Chopal	Chopal	2
		Deya	1
		Nerwa	2
	Shimla	Bhajji	2
		Dhami	6
		Koti	2
		Mashobra	8
		Taradevi	6
	Theog	Theog	1
	Shimla (Urban)	Chaura Maidan	8
Shimla WI South	Sarahan WI	Dharanghati	1
	Shimla WI	Renuka Ji	2
		Simbalbara	2
<b>Total No Of Ranges/Beats In Hotspot Ranges: 83 / Beats 348</b>			<b>348</b>







Himachal Pradesh with Forest Divisions showing the suitable habitat of Rhesus macaques modeled by MaxEnt



HIMACHAL PRADESH FOREST DEPARTMENT  
WILDLIFE WING

No. WL/ Monkey Population Estimation/  
Dated Shimla-171001, the

From: Pr.CCF (Wildlife) & Chief Wildlife Warden, H.P. To: Addl. Chief Secretary (Forests) to Govt of HP, Shimla-171001

Subject: Monkey Population Estimation Survey- Estimation of Rhesus Macaques in Shimla Urban-Reg

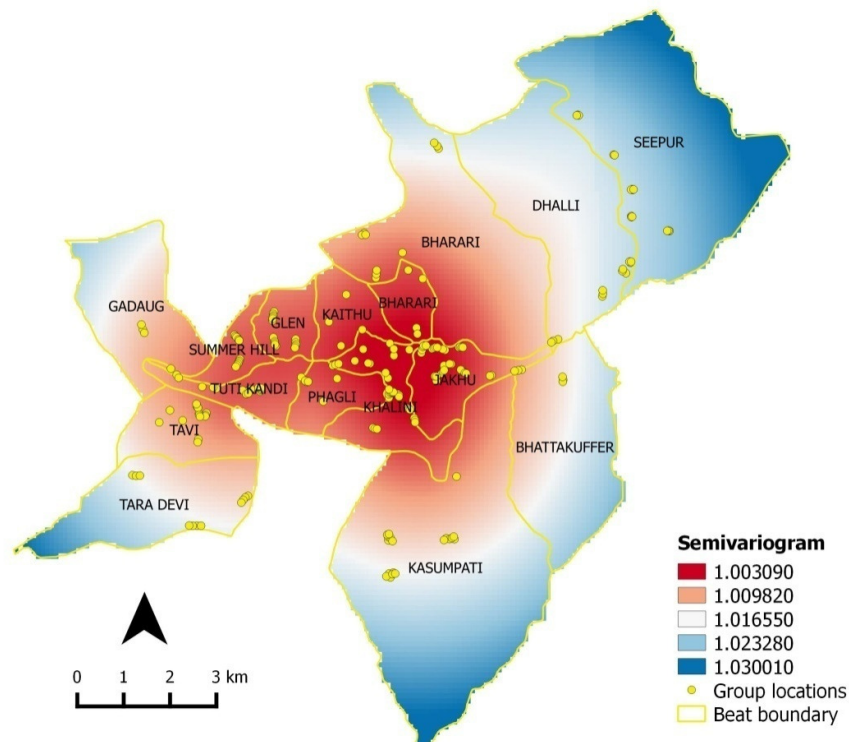
Sir,

In continuation to this office Lr No. WL/Monkey Census/2736 dated 29.7.2015, it is submitted that, the state wide survey for Monkey Population Estimation has been carried out during the period from 30<sup>th</sup> June to 2<sup>nd</sup> July, 2015. Whereas, the Data collected from the field is being uploaded into the GIS platform, so far the data pertaining to 132 Ranges has been uploaded, out of a total of 195 Ranges in the state. The estimation for the whole of the state, is likely to take some time, meanwhile as desired by your good office, Dr H Kumara, the Primate scientist from Coimbatore, has been asked to compile the data for Shimla City (Urban) area which included 8 beats of Shimla Urban Division (complete) and the 9 Beats of Shimla (T) Division, adjoining the Urban periphery from where the monkeys, keep moving in and out of the city limits.

2. The area which was included for estimating the Macaque population, comprised of 17 beats spread over in 9 Blocks and 3 Ranges of Shimla Forest Division (T) and Shimla (Urban) Division.

3. As per the report of estimation of Rhesus macaque (*Macaca mulatta*) received on e mail from Dr H Kumara today, the abstract of relevant facts and figures of Macaque population of Shimla city, is given as under

7. The average home range size of Rhesus Macaque is 5 sq km
8. Mean Encounter Rate for Shimla Urban is  $1.15 \pm 0.77$  groups per Km length
9. Estimated Density of Macaques is 0.75 group per Sq. Km.
10. Total Macaque population of Shimla (Urban) is 2,451.5 or say **2,452 no. in 105.45 sq km.**
11. Hot spot generation: The Macaque hot spot map generated is given as under



According to the Hot spot map generated by the Primate scientist depicted above, out of 17 beats, 8 beats are identified as highly problematic hot spots from the point of monkey menace, and they are namely Summer Hill, Glen, Kaithu, Bharari, Jakhu, Khalini, Phagli and Tutikandi beats in Shimla urban/peripheral areas of city limits.

The last survey conducted during 2013, reveals that the population of Shimla Urban was estimated at 1464, and the 9 beats of Shimla (T) division was 829, the total was 2293, which was based on a total head count method, which was considered as an approximate and outdated method, hence, the current method based on scientific and statistical principles known as “Fixed Strip Transect method “was adopted, based on habitat suitability model, according to which the estimation figures are 2452, which is considered to be more authentic method. Submitted for favour of your kind information and further necessary action please.

Yours faithfully,

Principal Chief Conservator of Forests (Wildlife) &  
Chief Wildlife Warden, Himachal Pradesh- Shimla-1