



138 + CD (2 nos.)
भारतीय वन्यजीव संस्थान
Wildlife Institute of India

SPEED POST

No. WII/RTI/CPIO/2017-18 (Qtr-II)/21

Dated 28.09.2017

To,

Shri Nitin Singhvi,
MIG-59, Sector-1,
Shakar Nagar,
Raipur - Chhatisgarh

Sub.: Information sought under Right to Information Act, 2005- reg.

Ref.: Your RTI Request dated 09/2017, received in this office on 18.09.2017.

Sir,

Please refer to your RTI Request cited above under RTI Act, 2005 along with an IPO Rs. 100/- (Rs. 10/- RTI fee + Rs. 90/- additional amount for information). You have also mentioned in your request that the excess amount of Rs. 90/- is being paid in advance towards cost of the information and the applicant will not claim any amount for refund.

In this context, it is informed that the point-wise information sought by you, has been collected from the concerned authority of the Institute and the same is contained in 22 pages in the form of **6-pdf files** stored in the electronic media as Compact Disk (CD). Since you have already paid an additional amount of Rs. 90/- towards cost of information, **the point-wise required information is sent herewith by speed post.**

If you are not satisfied with the aforesaid reply, you may file an appeal before the First Appellate Authority i.e. "Dr. V.B.Mathur, Director, Wildlife Institute of India, P.B.18, Chandrabani, Dehradun - 248 001, Ph. 0135-2646102, 2640910" within a period of one month.

Thanking you,

Yours faithfully,

[Signature]
29/9/17

(Dr. Anju Baroth)
CPIO & NO, RTI

Encl: a CD containing total 22 pages in 6-pdf files

पत्रपेटी सं० 18, चन्द्रबनी, देहरादून - 248 001, भारत
Post Box No. 18, Chandrabani, Dehra Dun - 248001. INDIA
ई.पी.ए.बी.एक्स : + 91-135-2640111 से 2640115 फ़ैक्स : 0135-2640117, तार : WILDLIFE
EPABX : + 91-135-2640111 to 2640115; Fax : 0135-2640117; GRAM : WILDLIFE
ई-मेल / E-mail : wii@wii.gov.in

**OFFICE OF THE CHIEF CONSERVATOR OF FORESTS
(WILD LIFE) & FIELD DIRECTOR, UDANTI-SITANADI
TIGER RESERVE, RAIPUR (C.G.)**

FOREST CAMPUS, RAJATALAB, RAIPUR
☎ 0771-2429600(O), 2429600(Fax), E-mail – ccfwlrpr@gmail.com

No./S.T.O./2016/1712

Raipur, Dated: 17/08/2016

To,

Dr. Vaibhav C. Mathur,

Assistant Inspector General (NTCA),

Ministry of Environment Forests & Climate Change,

B-1 Wing, 7th Floor, CGO Complex, Lodhi Road,

New Delhi - 110003

Subject: - Diversion of 19.62 ha of forest land from Boramdeo Wildlife Sanctuary for upgradation of Chilpi-Rengakhar-Salhewara road (60.811 km.) is M.D.R. connecting village N.H. at Chilphi to Salhewara, Chhattisgarh-reg.

Reference: - (1) Ministry of Environment, Forest and Climate Change, National Tiger Conservation Authority letter F. No. 7-3/2016-NTCA dated 09-05-2016.
(2) Ministry of Environment, Forest and Climate Change, National Tiger Conservation Authority letter F. No. 7-3/2016-NTCA dated 08-06-2016.
(3) Assesment Report of the Wild Life Institute of India vide e-mail dated 03-08-2016.

⊗ ⊗ ⊗

Reference is invited to the subject mentioned above. The proposal for diversion of 19.62 hectare of forest land from Boramdeo Wildlife Sanctuary for widening and upgradation of the existing Chilpi-Rengakhar-Salhewara road from single lane to 7 m wide two lane was sent by the Chhattisgarh Government to Ministry of Environment, Forest and Climate Change,

MOEF & CC (Wildlife division) in accordance with provision of section 38 (O) of the Wild life (Protection) Act, 1972, which was forwarded to the NTCA for providing comments for consideration of the standing committee of National Board for Wild Life(NBWL).

(2) Subsequently, a team was constituted by the MOEF & CC (NTCA) to ascertain the impact of upgradation of the said road vis-à-vis tiger dispersal and suggest mitigation measures, if deemed required, against recommendations made by the Tiger Cell, Wildlife Institute of India vide email dated 03.08.2016.

(3) The team visited the site of the proposed road upgradation on 26-06-2016. Chilpi-Rengakhar-Salhewara road is of total length 60.811 km., out of which 14.01 km. length (19.62 ha.) is coming in the sanctuary area.

The report from Mr. Y. V. Jhala, Wildlife Institute of India, Dehradun has been forwarded to the members of the team vide email dated 03.08.2016 with a copy to the NTCA and others. In the conclusion of this report from WII, Dehradun, it has been stated that *"there seems to be little justification to widen road width. The repairs of existing road along with the wildlife mitigation measures such as speed-breakers at a distance of 300 m, ten underpasses and three rumble-strips are recommended. These recommendations are suggested to mitigate the effect of vehicular speed and possible increased traffic load due to the repaired road,"*

(4) It may be pertinent to note that MoEF & CC (Wildlife Division) in its letter F.No. 6-62/2013 WL Dated 22-12-2014 had recommended that **"The cases of resurfacing and strengthening of existing Highways, not involving widening within Protected Areas will be possible without reference to Standing Committee of National Board for Wildlife.** Considering the importance of the proposed road in socio-economic development of 22 villages and importance of movement of Police and Para Military Personnel in Left Wing Extremism Affected area, the State Wildlife Board had recommended widening along with upgradation of the road.

(5) It is the only connectivity available to the population of 15,897 of 22 villages, comprising of Particularly Vulnerable Tribal Group (PVTG) such as Baigas. The proposed upgradation of the road will not only provide connectivity to these villages but will also help in boosting economic activity in this area leading to lesser dependence of this population on forest resources thus decreasing the biotic pressure on the Sanctuary.


Chhattisgarh State Wildlife Board has already recommended widening and upgradation of the existing road in its sixth meeting dated 23-01-2015.

State Wildlife Board while recommending widening of the road had observed that it will increase transportation facility for wildlife conservation as well as ensure security of the region along with education, health and agricultural development.

If road is resurfaced and strengthened without increasing its present 3 m. width, the traffic congestion may increase because of limited single lane width further disturbing wildlife of the Sanctuary. Proposed increase in width from 3 m. to 7 m. will allow smooth entry and exit of vehicles resulting in lesser time spent inside Sanctuary area. The road length comes under 2 districts- Kawardha and Rajnandgaon which are LWE affected. It would be in the long term interest of social economic development of people as well as Wildlife Conservation, to build this road now when Law and Order situation is favourable and opportunity is available for widening of the road.

(6) As a representative of the CWLW, Chhattisgarh, I appreciate the concerns raised in the report submitted by the WII, Dehradun. However, I do not concur with the recommendation of the report saying that there seems to be little justification to widen the existing road width.


It may be pertinent to note that the clearance has been accorded for widening of NH-7 along with the mitigation measures by the MoEF & CC in Kanha- Pench corridor also. Therefore, the permission to upgrade and widen the full length of this road with proposed mitigation measures may be recommended to National Board for Wildlife.


Chief Conservator of Forests (Wildlife) &
Field Director, Udanti-Sitanadi Tiger Reserve
Raipur, Chhattisgarh
Raipur, Dated: 17/08/2016

No./S.T.O./2016/1713

Copy to:

- (1) Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Chhattisgarh, Raipur.
- (2) Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Madhya Pradesh.
- (3) Mr. Yadvendra Jhala, PhD, Sr. Professor & Scientist "G", Wildlife Institute of India, Dehradun.
- (4) Field Director, Kanha National Park, Madhya Pradesh for information.


Chief Conservator of Forests (Wildlife) &
Field Director, Udanti-Sitanadi Tiger Reserve
Raipur, Chhattisgarh



Ujjwal Kumar <ujjwalsinha00@gmail.com>

Report on Bhoramdev WLS - Chilpi-Rengakhar Road upgradation, Chhattisgarh

1 message

Field Director Udanti-Sitanadi T.R. RAIPUR <ccfwlrpr@gmail.com>

Thu, Aug 18, 2016 at 12:41 PM

To: "AIG (NTCA)" <aig3-ntca@nic.in>, "Vaibhav C. Mathur" <drvaibhavcm@gmail.com>

Cc: Yadvendradev Jhala <yvjhala@gmail.com>, dirkanhanp@mpforest.org, PCCF WildLife Raipur <pccfwildlifecg@gmail.com>, pccfwl@mp.gov.in, himmatifs@gmail.com, dwii@wii.gov.in, ujjwal@wii.gov.in, ridhima@wii.gov.in

Dear Sir,

The comments of representative of CWLW, Chhattisgarh on the proposed upgradation and widening of Chilpi-Rengakhar Road is attached for your kind information.

Thanking you

From,

(O.P. Yadav)

Chief Conservator of Forests (WL) &

Field Director, Udanti-Sitanadi Tiger Reserve

Raipur, Chhattisgarh

Forest Campus, Raja Talab, GE Road, Raipur

Tel: 0771-2429600 Fax; 0771-2429600

Email: ccfwlrpr@gmail.com, ccfwlraipur.cg@gov.in**1712 dt 17-08-2016.pdf**

6645K



Ujjwal Kumar <ujjwalsinha00@gmail.com>

Report on Bhoremdev WLS - Chilpi-Rengakhar Road upgradation5 messages

Yadvendradev Jhala <yvjhala@gmail.com>

Wed, Aug 3, 2016 at 1:10 PM

To: ccf-wlraipur.cg@gov.in, Field Director Kanha <dirkanhanp@mpforest.org>, jasbir singh Chauhan <chauhanjs87@gmail.com>, "Field Director Udanti-Sitanadi T.R. RAIPUR" <ccfwlrpr@gmail.com>
Cc: "B.N. Dwivedi PCCF Wildlife" <pccfwildlifecg@gmail.com>, PCCF Wildlife <pccfwl@mp.gov.in>, hsnegi Himmat Singh Negi <himmatifs@gmail.com>, Vinod Mathur Director Wii <dwii@wii.gov.in>, "Vaibhav C. Mathur" <drvaibhavcm@gmail.com>, Ujjwal Kumar Sinha <ujjwal@wii.gov.in>, Ridhima Solanki <ridhima@wii.gov.in>

Dear Sir,
The report from our end is attached for your kind information and approval.
Yours faithfully,
Y. V. Jhala

--

Yadvendradev Jhala, Ph.D.
Sr. Professor & Scientist "G"
Wildlife Institute of India
Dehradun, India 248001
Tel : 91 135 2646223



Mitigation Measures to Chilpi-rengakhar road_Bhoramdev WLS 3 aug.docx
1604K

Ujjwal Kumar <ujjwalwild@gmail.com>

Sun, Aug 21, 2016 at 1:35 PM

To: Sanjay Shukla <sanjayshukla.ifs@gmail.com>, FIELD DIRECTOR KANHA <fdkanha@rediffmail.com>
Cc: "Dr. Y. V. Jhala" <jhalay@wii.gov.in>

Dear Sir
As discussed with you on phone Here is the recommendation from WII.
Shri Sunil Sinha and Shri Sudhir Mishra Assitant Director Kanha TR ,were also accompanied us during the survey.
Since Concurrent Field Director and DD buffer transferred. We need your comments on the report.
regards:
Ujjwal

----- Forwarded message -----

From: **Yadvendradev Jhala** <yvjhala@gmail.com>

Date: Wed, Aug 3, 2016 at 1:10 PM

Subject: Report on Bhoremdev WLS - Chilpi-Rengakhar Road upgradation

To: ccf-wlraipur.cg@gov.in, Field Director Kanha <dirkanhanp@mpforest.org>, jasbir singh Chauhan <chauhanjs87@gmail.com>, "Field Director Udanti-Sitanadi T.R. RAIPUR" <ccfwlrpr@gmail.com>
Cc: "B.N. Dwivedi PCCF Wildlife" <pccfwildlifecg@gmail.com>, PCCF Wildlife <pccfwl@mp.gov.in>, hsnegi Himmat Singh Negi <himmatifs@gmail.com>, Vinod Mathur Director Wii <dwii@wii.gov.in>, "Vaibhav C. Mathur" <drvaibhavcm@gmail.com>, Ujjwal Kumar Sinha <ujjwal@wii.gov.in>

Dear Sir,
The report from our end is attached for your kind information and approval.
Yours faithfully,
Y. V. Jhala

--

Yadvendradev Jhala, Ph.D.
Nodal officer Tiger Cell & Scientist "G"
Wildlife Institute of India
Dehradun, India 248001
Tel : 91 135 2646223

--

with regards

उज्ज्वल कुमार

Ujjwal Kumar

पारिस्थिकी संरक्षण विज्ञानी

Conservation Ecologist

व्याघ्र प्रकोष्ठ (भारतीय वन्यजीव संस्थान-राष्ट्रीय बाघ संरक्षण प्राधिकरण)

Tiger Cell (WII-NTCA)

Wildlife Institute of India

चन्द्रबनी देहरादून (उत्तराखण्ड) २४८००१

Chandrabani, Dehradun (Uttarakhand) 248001

दूरभाष/Telephone: 0135- 2640114-115 (EXT 473)

mobile: +91 9808712591

**Mitigation Measures to Chilpi-rengakhar road_Bhoramdev WLS 3 aug.docx**

1604K

Sanjay Shukla <sanjayshukla.ifs@gmail.com>

Tue, Aug 23, 2016 at 11:13 AM

To: Ujjwal Kumar <ujjwalwild@gmail.com>

Would go through the report and send comments asap.

Thanks and regards

[Quoted text hidden]

--

Regards

Sanjay Kumar Shukla, IFS**Field Director and Chief Conservator of Forests,****Kanha Tiger Reserve, Mandla (MP)****481661**

Phone : 07642- (Res)

07642-250760 (Off)

07642-251266 (Fax)

Mobile: 09424792001

09425184611

Ujjwal Kumar <ujjwalwild@gmail.com>

Tue, Aug 23, 2016 at 12:13 PM

To: Sanjay Shukla Field Director Kanha TR <sanjayshukla.ifs@gmail.com>

Thank you sir

please pardon for brevity, sent through mobile

[Quoted text hidden]

FIELD DIRECTOR KANHA <fdkanha@rediffmail.com>

Fri, Aug 26, 2016 at 11:34 AM

To: Ujjwal Kumar <ujjwalwild@gmail.com>

Cc: "Dr. Y. V. Jhala" <jhalay@wii.gov.in>

Dear Mr. Ujjwal,

Please refer to your email regarding the upgradation of Bhoremdev WLS - Chilpi-Rengakhar Road, and find attached herewith my concurrence in this regard.

(Sanjay Shukla)

Field Director

Kanha Tiger Reserve

Mandla

Ph: +91 7642 250760 (W) +91 7642 251266 (F)

9/21/2017

Gmail - Report on Bhoremdev WLS - Chilpi-Rengakhar Road upgradation

Mail to: dirkanhanp@mpforest.org

Please log on to <http://forest.mponline.gov.in> for Advance Booking, Elephant Rides, Photography/Filming, and other Tariff Details.

For further correspondences kindly mail to dirkanhanp@mpforest.org

From: Ujjwal Kumar <ujjwalwild@gmail.com>

Sent: Sun, 21 Aug 2016 13:35:48

To: Sanjay Shukla <sanjayshukla.ifs@gmail.com>, FIELD DIRECTOR KANHA <fdkanha@rediffmail.com>

Cc: "Dr. Y. V. Jhala" <jhalay@wii.gov.in>

Subject: Fwd: Report on Bhoremdev WLS - Chilpi-Rengakhar Road upgradation

[Quoted text hidden]



Mitigation_Measures_to_Chilpi-rengakhar_road_Bhoramdev_WLS_3_aug_26-08-2016_By_Ujjwal.docx
2302K



Ujjwal Kumar <ujjwalsinha00@gmail.com>

Sub: Constitution of a team in connection with diversion of 19.62ha.of forest land from Boramdeo Wildlife Sanctuary for upgradation of Chilphi-Rengakhar-Salhewara road (60.811 km) is M.D.R. connecting village N.H. at Chilphi to Salhewara, Chattisgarh- comprehensive ground survey reg.

3 messages

Yadvendradev Jhala <yvjhala@gmail.com>

Wed, Jun 15, 2016 at 6:31 PM

To: Jitendra Agrawal <jitendra.ifs@gmail.com>, P C C F Wild Life <pccfwl@mpforest.org>, pccfwildlifecg@gmail.com
Cc: "Vaibhav C. Mathur" <drvaibhavcm@gmail.com>, hsnegi Himmat Negi <himmatifs@gmail.com>, Ujjwal Kumar Sinha <ujjwal@wii.gov.in>, Ridhima Solanki <ridhima@wii.gov.in>, Vinod Mathur Director Wii <dwii@wii.gov.in>, dean <dean@wii.gov.in>, Qamar1 <qnq@wii.gov.in>, Sandeep Kumar Gupta <skg@wii.gov.in>, aswain2008@gmail.com, igtcanag@gmail.com

Dear Sir,

This is with reference to the NTCA letter (F.No. 7-3/2016-NTCA) dated 8th June, 2016, where constitution of a committee to ascertain impact of up-gradation of the Chilphi-Rengakhar-Salhewara road, is formed.

Members from WII Tiger Cell Ms. Ridhima Solanki and Sh. Ujjwal Kumar are available fro the site visit between June 21 to 28, 2016. Please nominate your representative and provide his/her contact so that the site visit can be coordinated and the appropriate report along with mitigation measures prepared in the time frame suggested by NTCA.

With Best Wishes.

Yours sincerely,

Jhala

--

Yadvendradev Jhala, Ph.D.
Sr. Professor & Scientist "G"
Wildlife Institute of India
Dehradun, India 248001
Tel : 91 135 2646223



NTCA office memorandum dated 8June.pdf
1092K

Jitendra Agrawal <jitendraifs@gmail.com>

Sat, Jun 18, 2016 at 12:16 PM

To: Yadvendradev Jhala <yvjhala@gmail.com>
Cc: P C C F Wild Life <pccfwl@mpforest.org>, pccfwildlifecg@gmail.com, "Vaibhav C. Mathur" <drvaibhavcm@gmail.com>, hsnegi Himmat Negi <himmatifs@gmail.com>, Ujjwal Kumar Sinha <ujjwal@wii.gov.in>, Ridhima Solanki <ridhima@wii.gov.in>, Vinod Mathur Director Wii <dwii@wii.gov.in>, dean <dean@wii.gov.in>, Qamar1 <qnq@wii.gov.in>, Sandeep Kumar Gupta <skg@wii.gov.in>, aswain2008@gmail.com, igtcanag@gmail.com, FIELD DIRECTOR KANHA <fdkanha@rediffmail.com>, Field Director Kanha <dirkanhanp@mpforest.org>

Dear Dr. Jhala,

FD Kanha is designated as a team member. He is having pre-scheduled engagements during next week. If he is unable to accommodate the time, he will depute a suitable person. You will get a formal official communication on Monday.

Best Regards,
Jitendra Agrawal

[Quoted text hidden]

Yadvendradev Jhala <yvjhala@gmail.com>

Sat, Jun 18, 2016 at 1:43 PM

To: Jitendra Agrawal <jitendraifs@gmail.com>

Cc: Ridhima Solanki <ridhima@wii.gov.in>, dwii <dwii@wii.gov.in>, Ujjwal Kumar Sinha <ujjwal@wii.gov.in>, aswain2008@gmail.com, Qamar1 <qnq@wii.gov.in>, hsnegi Himmat Negi <himmatifs@gmail.com>, "Vaibhav C. Mathur" <drvaibhavcm@gmail.com>, Field Director Kanha <dirkanhanp@mpforest.org>, P C C F Wild Life <pccfwl@mpforest.org>, FIELD DIRECTOR KANHA <fdkanha@rediffmail.com>, pccfwildlifecg@gmail.com, igntcanag@gmail.com, Sandeep Kumar Gupta <skg@wii.gov.in>, dean <dean@wii.gov.in>

Thank you Sir. Regards Jhala

[Quoted text hidden]

**Assessment Report on the Proposed diversion of 19.62 ha of forest land from
Bhoramdeo Wildlife Sanctuary for upgradation of Chilphi-Rengakhar-Salhewara
Road (60.811km) is M.D.R. connecting village N.H at Chilphi to Salhewara, Chattisgarh**

Team Members:

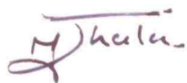
- 1) Sh. O.P. Yadav, Chief Conservator of Forest, Chattisgarh
- 2) Sh. Ripudaman Singh Bhadoria, Deputy Director Kanha Buffer
- 3) Sh. Alok Tiwari, DFO, Kawardha Chattisgarh
- 4) Sh. Jitendra Upadhaya, ACF, Bhoremddev WLS
- 5) Sudhir Mishra, Assistant Director Kanha Tiger Reserve
- 6) Sunil Sinha, Assistant Director Kanha Tiger Reserve
- 7) Ujjwal Kumar , Conservation Ecologist, Tiger Cell
- 8) Ridhima Solanki, Senior Biologist, Tiger Cell

I concur with the recommendations made by the Wildlife Institute of India, Dehradun. The upgradation of the said road may have vital implications on dispersal of tigers from Kanha to Indravati and Bhoramdev. However, the said road may be repaired as proposed by the Wildlife Institute of India to ensure the benefit of villagers and paramilitary personnel.



1) Field Director (Kanha Tiger Reserve)
M. P. Forest Department

2) Field Director (Sitanadi-Udanti Tiger reserve & CCF wildlife Raipur)
Chattisgarh Forest Department



3) Dr.Y.V.Jhala (Scientist G)
Nodal Officer Tiger Cell, Wildlife Institute of India

Introduction

The road Chilphi-Rengakhar-Salhewara is passing through the Boramdeo Wildlife Sanctuary of Chhattisgarh. The road is currently a major district road (MDR) of a single lane which connects Chilphi to Salhewara. The Public works department (PWD) of Chhattisgarh Government has proposed for diversion of 19.5 ha of forest land from within the sanctuary for the up-gradation of the road. The road length of 14.01 km passes through the sanctuary in 6 parts. The proposed up-gradation involves making two lane carriageways of 7m width from 3m (approx). The road is passing through a wildlife sanctuary and important tiger corridors that connect Kanha TR – Indravati TR –Navegao Nagzira TR and Tadoba TR. The long-term survival of these important tiger populations and those of others threatened and endangered wildlife like the leopard, sloth bear, dhole and gaur depend on the existence of their populations in a metapopulation framework. For a metapopulation existence habitat connectivity in the form of minimal "tiger corridors" identified by NTCA are absolutely essential. The current road is a resistance to the free movement of these species including tigers and its up gradation with increased traffic is likely to make it a barrier for the functionality of the tiger corridors. National Tiger Conservation Authority (MoEF) constituted a team of expert members from Tiger Cell (NTCA and WII) and representatives of Madhya Pradesh and Chhattisgarh Forest Department for the comprehensive ground survey to assess the threat to wildlife values and suggest appropriate mitigation measure.

Sanctuary and Landscape:

Boramdeo Wildlife Sanctuary is located between 80°53' E to 81°09'E and 21°58'N to 22°14'N in Kabirdham district of Chhattisgarh. The administrative control of the sanctuary lies with Kawardha Forest Division. It is covered by hills and thick forests of the Maikal range of hills in Kabirdham district. It shares the boundary with the Kanha Tiger Reserve Madhya Pradesh, an important Tiger Reserve of Central Indian landscape. Boramdeo Wildlife Sanctuary is part of the connecting link between 1)Kanha TR to Indravati TR &2) KanhaTR to Nawagaon Nagzira TR& Tadoba Tiger Reserve. The vegetation of the wildlife sanctuary isMoist Sal Forests and Miscellaneous forests as the major tree species are Sal (*Shorea robusta*), Saja (*Terminalia alata*), Lendia (*Lagerstroemia parviflora*), Dhawa (*Anogeissus latifolia*), Tendu (*Diospyros melanoxylon*),

Palash (*Butea monosperma*), Bija (*Pterocarpus marsupium*), Mahua (*Madhuca indica*), Aonla (*Phyllanthus emblica*), and Bamboo (*Dandrcalamus strictus*) etc. Besides, there are many species of climbers, forbs, and grasses. The major carnivores are the tiger (*Panthera tigris*), leopard (*Panthera pardus*), sloth bear (*Melursus ursinus*), Wild dog (*Cuon alpinus*), jackal (*Canis aureus*), fox (*Vulpes bengalensis*) and small Indian civet (*Viverricula indica*). Amongst the ungulates, chital (*Axis axis*), sambar (*Rusa unicolor*), Barking deer (*Muntiacus vaginalis*), chousingha (*Tetracerus quadricornis*), gaur (*Bos gaurus*) and Wild pig (*Sus scrofa*) are commonly found in the sanctuary.

Besides having rich biodiversity of itself, the sanctuary plays a crucial role in the landscape as it acts as sink for tigers of Kanha Tiger Reserve. The forest patches in and around the sanctuary provide the movement to large ranging animals like tigers, leopard, Gaur and is important to sustain long-term source-sink population of the same. The functional corridors have been identified by NTCA between Kanha TR and Bhoramdeo WLS.

Proposed Project of PWD:

The ADB Project under PWD, Raipur has the assignment of Chilphi-Rengakhar-Salhewara road upgradation (FCA Registration No.2013/070 dated 16/08/2013). The length of road considered for upgradation is of 60.811km, and the upgradation is from single lane to **two lane carriageway (7m wide)**. The importance of the road is the requirement of movement of Police and Para Military Personnel in Naxal affected area; also currently the road is connecting **22 villages with a population of 15,897**. The **length of this road in Wildlife Sanctuary is 14.01km (19.620Ha)** and through **Reserve forest is 12.05km (16.867Ha)**. The project requires **felling of 3263 trees** from combined Reserve area and wildlife sanctuary.

Assignment:

Wildlife Institute of India submitted its **comments on 4/05/2016 to NTCA** across the letter **F.No.7-9/2010-NTCA** dated 11th April 2016. Post examining the concerned area through remote sensing, it was not advised by Tiger Cell to go ahead with the up-gradation of the road as it is dissecting crucial corridors. Apart from the functional corridors, the forest patches, as observed remotely, provides connectivity to movement of wildlife species and act as the potential refuge. These forest patches interspersed with agricultural fields as observed in the area act as habitat for many carnivores like wolf, hyena, jungle cat, fox etc. Any

discontinuation or disturbance to these forest patches will adversely affect the movement of tigers as well as other species.

The background research also revealed that the sanctuary's eco-sensitive zone is not defined as yet though the proposal is submitted by Chhattisgarh state to MoEFCC. The XXI meeting of Indian Board for Wildlife adopted a "Wildlife Conservation Strategy-2002", the point no.9 envisioned "lands falling within 10km of the boundaries of National Parks and Sanctuaries should be notified as eco-fragile zones under section 3(v) of the Environment (Protection) Act and Rule 5 Sub rule (viii) & (x) of the Environment (Protection) Rules". The Wildlife Conservation Strategy-2002 also listed that in case of sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkages, are even beyond 10km width, these should be included in Eco-sensitive Zone. The road in consideration will be violating the purpose of the eco-sensitive zone; (though not declared for Boramdeo WLS) which is to act as "shock-absorbers"/"transition zone" to the Protected Areas. Chilphi-Rengakhari-Salhewara road not only dissects the corridors but falls within boundary and close vicinity of the sanctuary and tiger reserve.

National Tiger Conservation Authority Ministry of Environment, Forest and Climate Change Government of India via **letter no. F.No. 7-3/2016/NTCA Dated 08-06-2015** constituted a team of expert members from Tiger cell of NTCA and Wildlife Institute of India and representatives of Chief Wildlife Warden Chhattisgarh and Madhya Pradesh Forest department. The team of WII tiger cell personnel, Ms. Ridhima Solanki, **Senior Biologist** & Mr. Ujjwal Kumar, **Conservation Ecologist**, Mr. O.P. Yadav, **CCF Wildlife Raipur, Chhattisgarh**, Ripudaman Singh Bhadoria, **Deputy Director Kanha TR**, Sunil Sinha & Sudhir Mishra, **Assistant Director(s) Kanha TR** was constituted. The responsibility of the team was to ascertain the impact of the up-gradation of the said road on tiger dispersal as the road is crossing through the tiger corridors from Kanha Tiger Reserve and suggesting mitigation measures for the same.

Ground Survey and Observations of the team:

The team did a site visit of the proposed road on 26th June 2016. This road covers 14.1km distance inside the sanctuary in 6 parts (**Figure 1**)

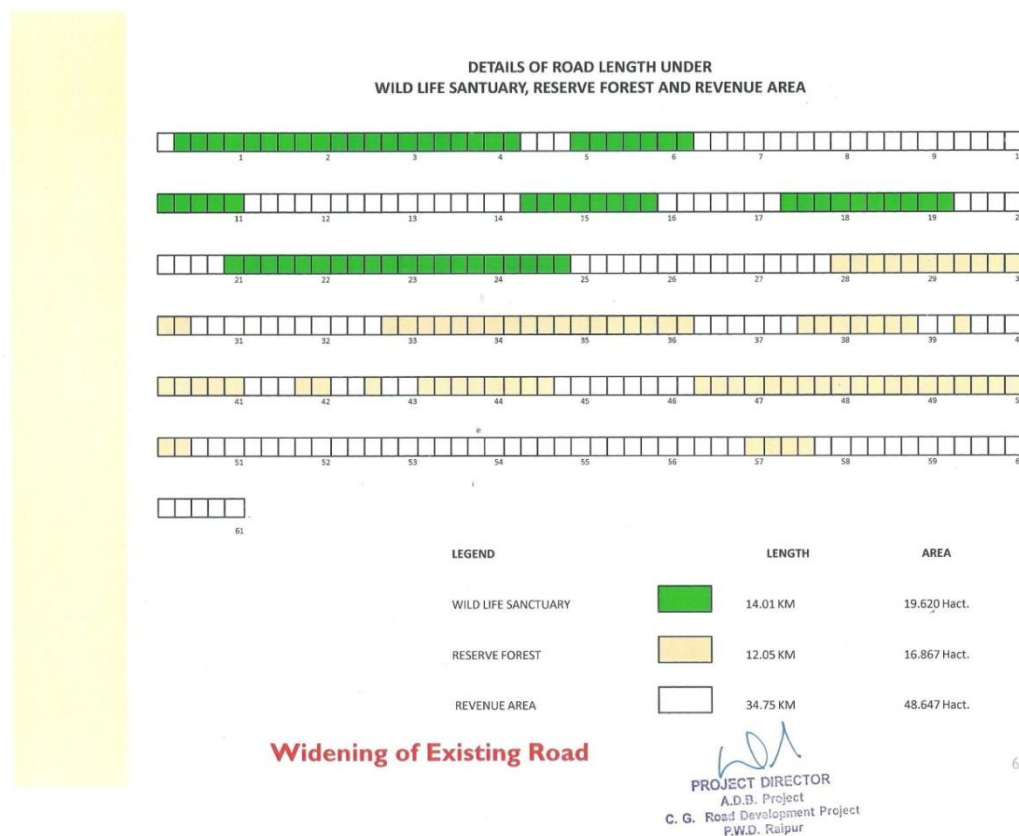


Figure 1. Details of Chilpi-Rengakhar-Salhewara Road length (each box is of 200m length)

The Chilphi-Rengakhar-Salhewara road is of total 60.811 km length, which is currently single lane and in the dilapidated condition. The road does not have any commercial significance as NH 12A is passing parallel to this road and connects major district headquarters of Chhattisgarh. It was observed by the team during the survey, that the traffic was minimal with occasional cycle and motorcycle, tractor and two private public transport buses. The major populated villages on the road were Chilphi (2313 village population), Samnapur (1103 village population), Rampur (1245 village population) and Rengaghar (1573 village population) and Khara (1892 village population). Apart from these villages, the rest of the 17 villages were less populated.

We observed that certain waterholes in the forest patches were separated due to the current road. These waterholes were the sole source for wildlife especially during summer season, hence animal crossing the road was inevitable. We also observed that narrow strips of patches of forests are left and are fast getting isolated due to various human activities, but as pointed out by forest official,

movement of tigers including tigress with cubs have been recorded in these patches.

The member of the team observed major tree girdling along the proposed road widening zones within the wildlife sanctuaries (**Figure 2**).



Figure 2. Tree Girdling in the sanctuary

Ecological effects:

The roads are essential for transportation and development yet it affects wildlife populations in numerous ways, e.g a direct loss of habitat, fragmentation of remaining forested patch, disruption of animal movement, and by causing road mortality (Forman et al. 2003). Wildlife-vehicle collisions cause property damage, human injuries, and deaths (Conover et al. 1995).

Endangered mammals like the tiger, wild dog, gaur, and leopard are large ranging and currently persist in small fragmented population within 7% of their historic range. The small and isolated population are prone to local extinction; managing such population in a meta-population framework by connecting them through habitat corridors is very crucial. These habitat linkages provide dispersal and migratory route between two or more population. Maintaining genetic variation

and minimizing inbreeding in the population can only be possible if individuals from the population mix each other.

Bhoramdeo wildlife sanctuary plays a significant role in Kanha-Indravati, Kanha-Navegaon Nagzira and Kanha-Tadoba corridors as major stepping stone area. Kanha tiger reserve has the only source population in this area and is responsible for maintaining many other smaller populations like Bhoramdeo. The existence of the small population will be jeopardized by the disruption of the corridor. Kanha TR provides its spill over population to Bhoramdeo WLS and Indravati tiger reserve. Tiger and other large ranging mammals like Gaur, Wild Dog and Leopard which disperse or emigrate from Kanha Tiger Reserve often use Bhoramdeo wildlife sanctuary as evident from camera traps and genetics based surveys. Tigers have been found to occupy the vicinity of the said road in all the three cycles of All India Tiger Estimation exercise (**Figure 3**).

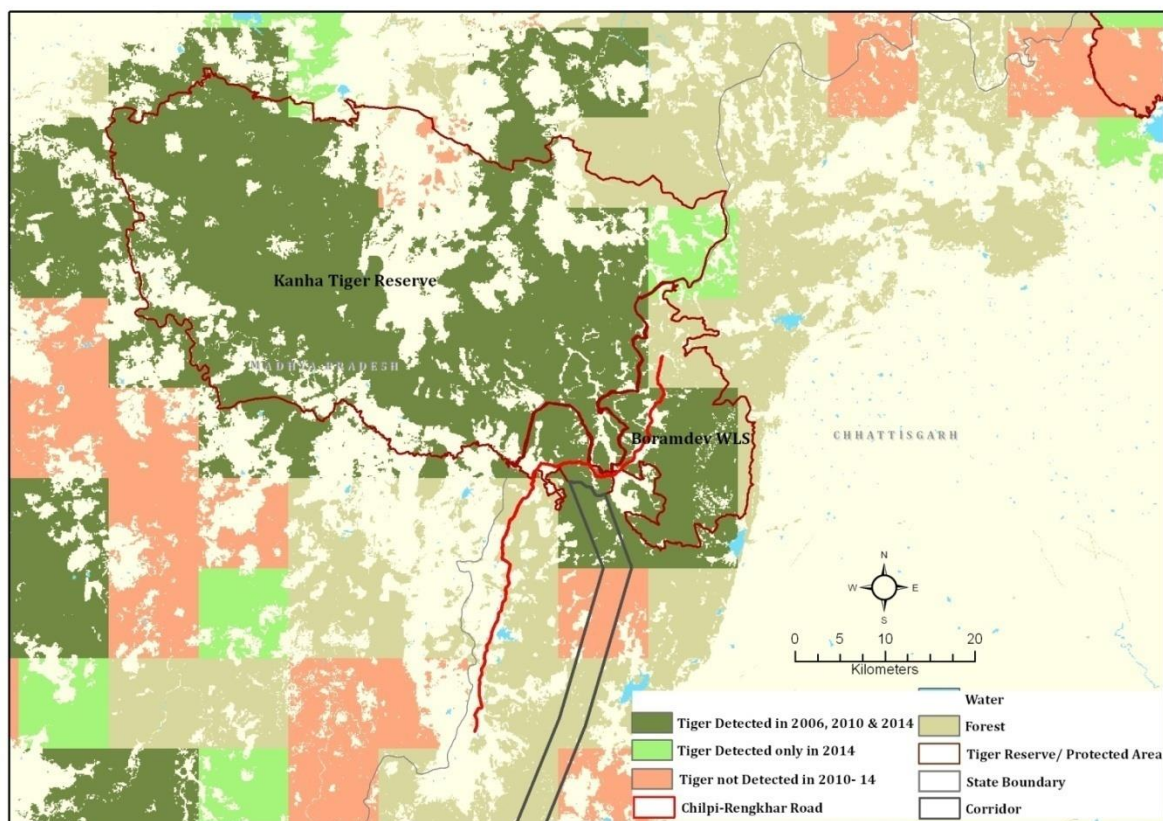


Figure 3 . Tiger presence recorded in the landscape during AITM 2006,2010,2014

The forests of Bhoramdeo WLS sanctuary would be further fragmented post the up-gradation of the road which will cause degradation of habitat quality of

Bhoramdeo WLS. The fragmentation leads to severe and irreversible effect on local environment, and reduces the function of forest such as air and water purification, providing habitat for diverse animal and plants (www.ontarionature.org). Apart from reduction in forest area and in turn reduction in biodiversity, the fragmented landscape isolates the plant and animal population. The edge effect (the change in community structure that occur between boundaries of two protected areas) is especially pronounced in fragmented forests. Increase fragmentation promotes the edge effect which in turn catalyses the proliferation of edge-dependant species like invasive species (Harper et al 2005). The invasive species can further destroy the habitat quality and can get abundant in interior of forests when edge effect increases.

The already existing villages in the corridors have fragmented the forests due to agricultural practices and other activities. The further effect observed due to human settlement was the girdling of trees which is detrimental to the corridor, sanctuary and its wildlife value.

The diversion of 19.620 Ha of area under Wildlife sanctuary and 16.867 Ha of area under Reserve forest is demanding felling of 3263 trees which would affect the carbon sequestration process of the forest.

Recommendations:

The need for the expansion of current road is not justifiable since the NH 12A runs parallel to this road and caters to the maximum traffic of the area. The Chilphi-Rengakhar road is mainly used by villages having low population. Since the road connects such low populated villages, hence the traffic is minimal. Once the road is expanded commercial vehicles and other traffic may increase and this would be extremely detrimental for the biodiversity values of the region especially tiger conservation. Currently the road is in poor condition and can be repaired for convenience of the local population with following recommendations of underpasses, rumble strips and speed bumps. Besides, the traffic entry during the night should be regulated by the forest department. The heavy vehicle movement should be restricted from 6pm to 6 am.

Underpasses:

Wildlife underpasses are typically bridges or culverts that allow wildlife to pass underneath a road. We proposed a dimension of **05m Height X 30m Width** underpasses to be constructed at the locations given in **Table 1, and Figure 4**. This dimension will allow mega-herbivore like Gaur to cross the road without much hindrance.

Table 1 Proposed Locations to construct Underpasses

| Serial no | Forest road Section (WLS) | Latitude | Longitude | Remarks |
|-----------|---------------------------|---------------|---------------|--|
| 1 | II | 22° 07' 20.5" | 81° 02' 52.2" | Dense forest patch connecting KanhaTR to Large patch of Bhoramdeo WLS, Evidence of Wild Dog Movement |
| 2 | III | 22° 05' 14.4" | 81° 02' 10.1" | Dense forest patch connecting KanhaTR to Large patch of Bhoramdeo WLS Evidence of Chital and Sambar |
| 3 | IV | 22° 03' 23.3" | 81° 00' 28.5" | Dense forest patch connecting KanhaTR to Large patch of Bhoramdeo WLS |
| 4 | V | 22° 02' 42.4" | 80° 59' 1.38" | Moderately dense forest Connecting Kanha TR to Large patch of Bhoramdeo WLS |
| 5 | V | 22° 02' 43.1" | 80° 59' 14.4" | Moderately dense forest Connecting Kanha TR to Large patch of Bhoramdeo WLS |
| 6 | VI | 22° 03' 32.2" | 80° 57' 03.6" | Very important patch(dense forest) lying within Kanha-Indravati corridor inside the WLS, Evidence of Tiger and Gaur Movement |
| 7 | VI | 22° 03' 30.7" | 80° 56' 41.8" | -do- |
| 8 | VI | 22° 03' 25.4" | 80 56' 21.2" | -do- |
| 9 | VI | 22° 03' 35.4" | 80 57' 28.6" | -do- |
| 10 | VI | 22° 03' 32.2" | 80 57' 42.9" | -do- |

Speed bumps and Rumble strips:

Speed bumps and Rumble strips are often used to control the speed of vehicles. After repairing of the road there is a possibility of some increase in traffic volume. Hence to avoid wildlife-vehicle collision and to control the speedy vehicles, rumble strips are proposed to be constructed at locations in Table 2. The speed breakers are recommended at every 300m of the road length passing through forest reserve and wildlife sanctuary.

Table 2 Proposed locations for constructing Rumble Stripes

| Serial no | Forest road Section(WLS) | Latitude | Longitude | Remarks |
|-----------|--------------------------|----------------|---------------|---------|
| 1 | III | 22° 05' 21.5" | 81° 02' 6.47" | |
| 2 | III | 22° 05' 4.3" | 81° 02' 3.93" | |
| 3 | V | 22° 02' 44.03" | 80° 58' 50.6" | |

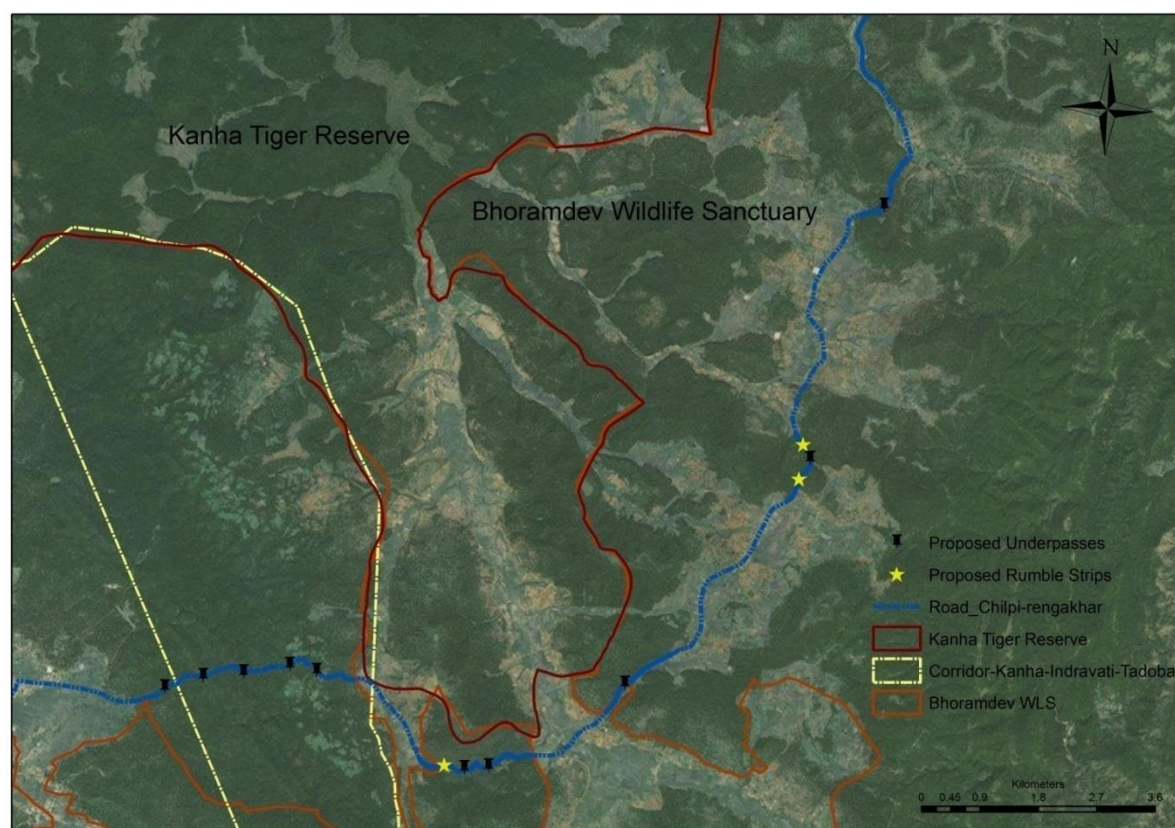


Figure 4. Wildlife Crossing Points and Mitigation Measures (proposed for road repairs)

Conclusion:

Post survey of the site it was concluded that there seems to be little justification to widen the existing road width. The repairs of existing road along with the wildlife mitigation measures such as speed-breakers at a distance of 300m, ten underpasses and three rumble-strips are recommended. These recommendations are suggested to mitigate the effect of vehicular speed and possible increased traffic load due to the repaired road. The habitat protection and restoration are proposed as well as minimum impact during repairs by not permitting labor to stay within premises of the sanctuary.

Care should be taken that detrimental activity such as girdling of trees is not permitted within the sanctuary boundary as these will result in habitat deterioration and fragmentation.

The widening of the road will lead to the long-term retrograding effect on wildlife and habitat quality. The tiger population of Kanha- is the major source population in central India and widening of this road can result in isolating Bharamdeo from Kanha as well as have detrimental effect of tiger movement in connecting corridors to Acahnakmar, Tadoba and Indravati. Widening will also involve cutting of a valuable number of trees and disturbing the crucial forest patch during the construction. The recommendation suggested in the report should be followed to upgrade the existing road quality without widening it.

References:

- Beier, P. 1993. Determining minimum habitat areas and habitat corridors for cougars. *Conservation Biology* 7:94-108.
- Conover, M. R., W. C. Pitt, K. K. Kessler, T. J. Dubow, and W. A. Sanborn. 1995. Review of human injuries, illnesses, and economic losses caused by wildlife in the United States. *Wildlife Society Bulletin* 23:407-414
- Forman, R. T. T. 2000. Estimate of the area affected ecologically by the road system in the United States. *Conservation Biology* 14(1): 31-35.
- Forman, R. T. T., and L. E. Alexander. 1998. Roads and their major ecological effects. *Annual Review of Ecology and Systematics* 29:207-231.

Harper, Karen A., MacDonald S. Ellen, Burton Philip J., Chen Jiquan, Brososke Kimberley D., Saunders Sari C., Euskirchen Eugénie S., Roberts Dar, Jaiteh Malanding S., and Esseen Per-Anders.2005. Edge Influence on Forest Structure and Composition in Fragmented Landscapes.Conservation Biology 19.3 :768-82

Jhala,Y.V,Q.Qureshi,and R.Gopal.2015. The status of tigers co-predators & prey in India 2014. National Tiger Conservation Authority, New Delhi & Wildlife Institute of India, Dehradun.TR2015/021

Riley, S.P.D. 2006. Spatial ecology of bobcats and gray foxes in urban and rural zones of a national park. Journal of Wildlife Management 70:1425-1435.

<https://www.ontarionature.org/discover/resources/PDFs/factsheets/fragmentation.pdf>

F. No. 7-3/2016-NTCA
Government of India
Ministry of Environment, Forest and Climate Change
National Tiger Conservation Authority

B-1, Wing, 7th Floor,
Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110003.
Email: aig3-ntca@nic.in
Tel. (EPABX) 011-24367837-42
Fax: 011-24367836

Dated 8th June, 2016

OFFICE MEMORANDUM

Sub: Constitution of a Team in connection with diversion of 19.62 ha. of forest land from Boramdeo Wildlife Sanctuary for upgradation of Chilphi-Rengakhar-Salhewara road (60.811 km) is M.D.R. connecting village N. H. At Chilphi to Salhewara, Chhattisgarh - comprehensive ground survey reg.

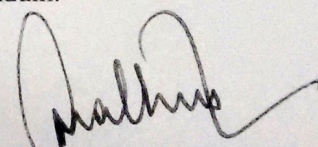
With approval of the Competent Authority, a Team is hereby constituted in connection with diversion of 19.62 ha. of forest land from Boramdeo Wildlife Sanctuary for upgradation of Chilphi-Rengakhar-Salhewara falling within functional corridors from the Kanha Tiger Reserve, Madhya Pradesh, as under:

- a) Shri Riddhima Solanki, Tiger Cell, Wildlife Institute of India, Dehradun.
- b) Shri Ujjwal Kumar, Tiger Cell, Wildlife Institute of India, Dehradun.
- c) Representative of the Chief Wildlife Warden, Madhya Pradesh.
- d) Representative of the Chief Wildlife Warden, Chhattisgarh.

2. The terms and reference of the said team are as follows:

- To ascertain impact of upgradation of the said road vis-a-vis tiger dispersal and suggest mitigation measures if deemed required, against recommendations made by the Tiger Cell, Wildlife Institute of India vide email dated 04.05.2016.

3. The team will submit its report within 30 days from issue of this office memorandum.



(Dr. Vaibhav C. Mathur)
Assistant Inspector General (NTCA)

Distribution

1. All Members of the team.

Copy to:

1. The PS to MEF & CC.
2. The PS to ADG (PT) & Member Secretary (NTCA).
3. The Chief Wildlife Warden (s), Madhya Pradesh and Chhattisgarh.
4. The Deputy Inspector General of Forests (WL), MoEF&CC, New Delhi.

NTCA OFFICE
10557
4/06/2016

A y v Thale
Me des