

69

**Subject:** Your Online RTI Request vide registration No. WLIOI/R/2018/50008 dated 09.04.2018  
**From:** G Muthu Veerappan <mv@wii.gov.in>  
**Date:** 08/05/2018 15:16  
**To:** bansal.gauravkumar3@gmail.com  
**CC:** anju <anju.baroth@wii.gov.in>  
**BCC:** "Sh.M.P.Aggarwal" <mpa@wii.gov.in>

Sir,

Please refer to your RTI Request on the above cited subject and reference under RTI Act, 2005. In this context, the point-wise reply to your queries has been received from concerned authority of the Institute and the same is attached herewith in 15 pages in pdf file.

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. 0135-2640910 or 2646102" within a period of one month.

Thanking you,

Yours faithfully,

Muthu Veerappan  
On behalf of Dr.Anju Baroth,  
CPIO & NO, RTI Cell

—Attachments:—

Onlinereply-GauravBansal.pdf

6.3 MB

**ACTION HISTORY OF RTI REQUEST No.WLIOI/R/2018/50008**

**Applicant Name** gaurav bansal

**Text of Application**

Sir, please provide the information of the following points under section 06 of the Right to Information Act - 2005: 1. Whether a team of your Institute conducted the Survey of HASTINAPUR WILDLIFE SANCTUARY. 2. if yes, please provide the details of the team which conducted the said survey. 3. Whether the said WII team, which has conducted the survey of HASTINAPUR WILDLIFE SANCTUARY, has forwarded any Report to the Forest Department of State of Uttar Pradesh or any other Department of State of Uttar Pradesh. 4. If yes, please provide the certified Copy of the report submitted by the TEAM OF YOUR INSTITUTE to FOREST DEPARTMENT, STATE OF UP or any of the other department of State of Uttar Pradesh.  
Note: In order to save the Public Money, applicant request your goodself to kindly use the window provided in the rtionlie.gov.in for ADDITIONAL FEES purpose. Further, in order to save time and STATE EXCHEQUER, applicant request your goodself to kindly provide the REPLY on the following email of the applicant: [advocategauravkumarbansal@gmail.com](mailto:advocategauravkumarbansal@gmail.com) Regards Gaurav Kumar Bansal Advocate Supreme Court of India

**Reply of Application**

The reply to your application is being emailed at [bansal.gauravkumar3@gmail.com](mailto:bansal.gauravkumar3@gmail.com), as the reply, is in 15 page pdf file which is exceeding 1 MB size limit of RTI portal.

SN.	Action Taken	Date of Action	Action Taken By	Remarks
1	RTI REQUEST RECEIVED	09/04/2018	Nodal Officer	
2	REQUEST FORWARDED TO CPIO	16/04/2018	Nodal Officer	Forwarded to CPIO(s) : (1) Anju Baroth
3	REQUEST DISPOSED OF	08/05/2018	Anju Baroth-(CPIO)	

[Print](#)



(67)



भारतीय वन्यजीव संस्थान  
Wildlife Institute of India



ONLINE REPLY

No. WII/RTI/CPIO/2018-19 (Qtr-I)/3

Dated 08.05.2018

To,

Shri Gaurav Bansal,  
A-26 Basement, Jangpura Extension,  
Near DAV School,  
New Delhi – 110 014

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

**Ref: Your Online RTI Request vide registration No. WLIOI/R/2018/50008 dated 09.04.2018.**

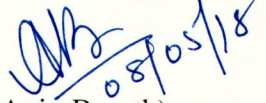
Sir,

Please refer to your **RTI Request** on the above cited subject and reference under RTI Act, 2005. In this context, the point-wise reply to your queries has been received from concerned authority of the Institute and the same is attached herewith in 15 pages in **.pdf file**.

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. 0135-2640910 or 2646102”** within a period of one month.

Thanking you,

Yours faithfully,

  
( Dr. Anju Baroth)  
CPIO & NO, RTI

Encl: as above.

RTI Registration No: WLIO1/R/2018/50008

Applicant name: Shri. Gaurav Bansal.

Questions	Reply
1. Whether a team of your Institute conducted the Survey of HASTINAPUR WILDLIFE SANCTUARY.	Yes. A team from Wildlife Institute of India, Dehradun has conducted a survey of Hastinapur Wildlife Sanctuary.
2. If yes, please provide the details of the team which conducted the said survey.	The WII team comprised Dr. Bivash Pandav, Scientist F, Dr. Samrat Mondol, Scientist D, Shri. Vinod Kumar D.K, IFS (Scientist D) and Dr. Panna Lal, GIS expert, along with researchers from the institute.
3. Whether the said WII team, which has conducted the survey of HASTINAPUR WILDLIFE SANCTUARY, has forwarded any Report to the Forest Department of State of Uttar Pradesh or any other Department of State of Uttar Pradesh.	Yes, WII has submitted a report after the survey of Hastinapur Wildlife Sanctuary.
4. If yes, please provide the certified Copy of the report submitted by the TEAM OF YOUR INSTITUTE to FOREST DEPARTMENT, STATE OF UP or any other department of State of Uttar Pradesh.	A copy of the report is attached with this reply.

*Smt Mondol*

**ATTESTED**  
*[Signature]*  
08/05/18

CPIO, Wild Life Institute of India, Dehradun



65



भारतीय वन्यजीव संस्थान  
Wildlife Institute of India

NO. WII/AECB/SM/2015/01

01 May 2018

To,  
The Principal Chief Conservator of Forests (Wildlife)  
and the Chief Wildlife Warden  
Government of Uttar Pradesh  
Aranya Bhavan  
Government of Uttar Pradesh  
17, Rana Pratap Marg  
Lucknow 226001, Uttar Pradesh  
Email: [cwlvup@gmail.com](mailto:cwlvup@gmail.com)

Sub: Submission of report based on survey of critical wildlife habitats in  
Hastinapur Wildlife Sanctuary, Uttar Pradesh

Reference: Your office letter no. 1951/26-11 dated 12 December 2017

Sir,

With respect to the above mentioned letter under reference, I am pleased to submit a copy of the report based on our survey of critical wildlife habitats in Hastinapur WLS. Our survey indicates that critical wildlife areas within the designated Hastinapur WLS are highly restricted and are primarily confined to wetland and grassland habitats along river Ganga as well as its tributaries. We are of the opinion that management efforts should concentrate on these identified critical wildlife habitats rather than spreading thin over a large sanctuary that is predominantly under intense human use.

Thanking you.

Yours faithfully,

[Dr. V.B. Mathur]  
Director

Encl.: As above

ATTESTED  
  
CPIO, Wild Life Institute of India, Dehradun

पत्रपेटी सं० 18, चन्द्रबनी, देहरादून - 248001, उत्तराखण्ड, भारत  
Post Box No. 18, Chandrabani, Dehradun - 248001, Uttarakhand, INDIA  
ई.पी.ए.बी.एक्स : +91-135-2640114, 2640115, 2646100 फ़ैक्स : 0135-2640117  
EPABX : +91-135-2640114, 2640115, 2646100; Fax : 0135-2640117;  
ई-मेल / E-mail: [wii@wii.gov.in](mailto:wii@wii.gov.in), वेब / website: [www.wii.gov.in](http://www.wii.gov.in)



**Identification of critical wildlife habitats with specific reference to swamp deer in Hastinapur Wildlife Sanctuary, Uttar Pradesh**

**Summary:**

Hastinapur Wildlife Sanctuary in Uttar Pradesh is spread over an area of 2,073 sq km encompassing Bijnor, Amroha, Muzafarnagr, Meerut and Hapur forest divisions. Vast tracts of this sanctuary lie within high human use area. The flagship species of the sanctuary, swamp deer, continues to inhabit suitable habitats within Hastinapur. A survey was carried out during 2017 and 2018 to identify critical swamp deer and other wildlife habitats in Hastinapur WLS. A species distribution model was used to predict potential swamp deer habitats within the sanctuary. These potential habitats were intensively surveyed to establish presence of swamp deer and document the status of their habitat. Our survey clearly indicates that the swamp deer within Hastinapur WLS are confined to grassland and wetland habitats along Ganga and its tributaries. These critical swamp deer habitats are highly fragmented and are subjected to severe anthropogenic pressure in terms of livestock grazing and other associated human activities. Instead of trying to manage a large wildlife sanctuary that is predominantly under intensive human use, we recommend the management to focus their attention on these critical swamp deer habitats and intensively manage them.

**Introduction:**

The Hastinapur Wildlife Sanctuary is situated between 28° 46' and 29° 35'N latitude and 77° 30' and 78°30' E longitude in Uttar Pradesh state of India (Figure 1). It encompasses an area of 2073 km<sup>2</sup> along the banks of Ganga in five forest divisions of Uttar Pradesh, namely Muzaffarnagar, Bijnor, Meerut, Hapur and Amroha. The altitude of the area ranges between 130 and 150 m above the sea level ( Khan and Khan 1999). The sanctuary is one of the most important protected areas in north India conserving the endangered Gangetic grassland biome.

**ATTESTED**  
*[Signature]*  
08/05/18  
CPIO, Wild Life Institute of India, Dehradun

ATTESTED

CPIO, Wild Life Institute of India, Dehradun



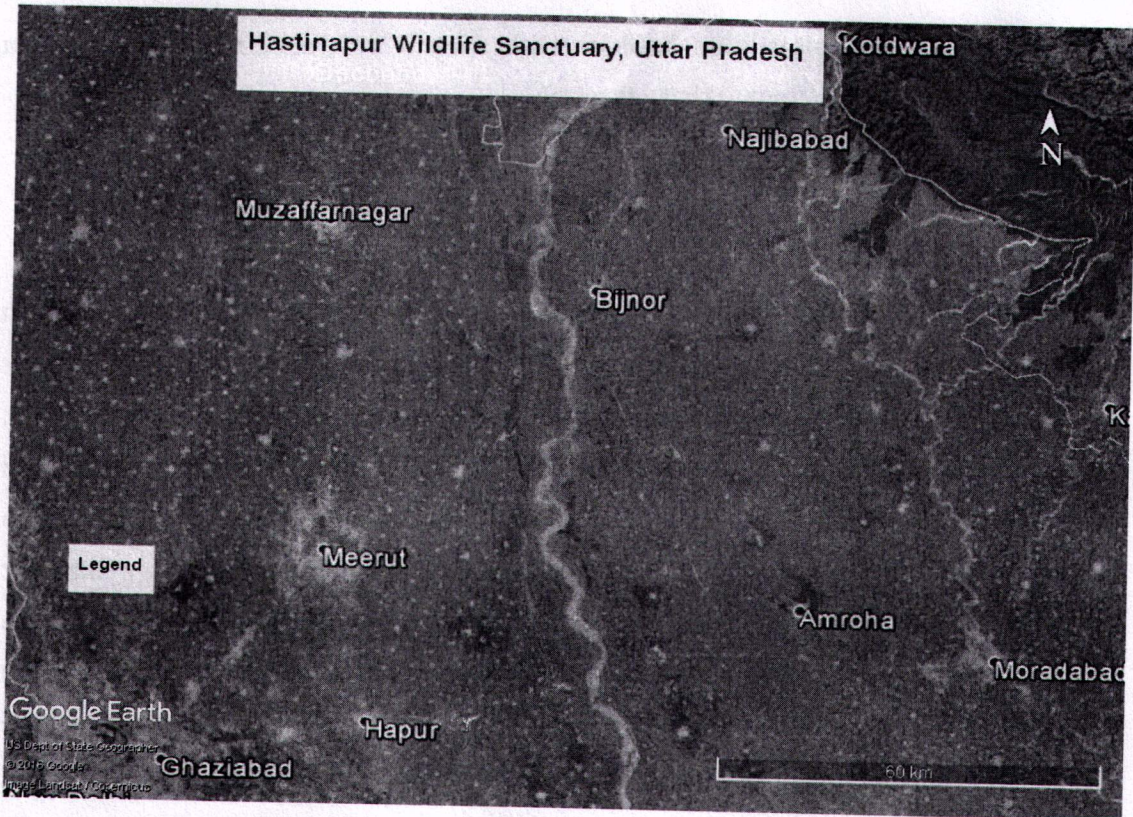


Figure 1: Location of Hastinapur Wildlife Sanctuary

The vegetation of the sanctuary can be classified into three main types namely;

- i) Tall wet grasslands in low laying areas. These grasslands remain inundated for most part of the year and are dominated by grass species like *Saccharum spontaneum*, *Eriathus revennae* and *Phragmites* sp. along with dicot species *Nymphoides cristatum* and *Vicoa vestila*.
- ii) Short wet grasslands, which remain dry from mid-winters till the onset of monsoon. Major grass species found in short wet grasslands are *Imperata cylindrica*, *Paspalidium* and *Typha* sp. and their dicot associates are *Bacopa monieri*, *Rananculus cantonensis* and *Polygonum lanigerum*.
- iii) Dry scrub grasslands or 'Khola' are the regions found on raised grounds amidst the Ganga and on highlands. Major species growing in dry scrub grasslands are *Tamarix* sp., *Veteveria ziznoides* and *Dichanthium annulatum* while commonly occurring tree species are *Accacia spp.*, *Dalbergia sissoo* and *Bombax cieba*. At few places on the highlands, the forest department has raised *Eucalyptus*, *Accacia*, *Syzygium* and *Dalbergia* plantations as part of Social Forestry Scheme.

ATTESTED

CPIO, Wild Life Institute of India, Dehradun



The grasslands and plantation occupy only about 17% of the total area of the sanctuary (Tall wet grasslands-6%, short wet grasslands-4%, dry scrub grasslands-5% and plantation-2%, respectively). The rest of the Sanctuary is human dominated (mostly agriculture and human habitations).

**The need for strategising protection of Hastinapur Wildlife Sanctuary:**

This sanctuary represents some of the last standing grasslands along Ganga which require immediate protection. These grasslands are home to a number of endangered species like the swamp deer and the hog deer. The sanctuary also has reserve forests which are home to large mammalian species like leopard, hyena and nilgai. Currently the sanctuary is under tremendous burgeoning human pressures which are detrimental for sustenance of wildlife. High grazing pressure, repeated fire and extraction of plants, cutting of trees etc. are some of the factors responsible for high disturbances in this area. The grasslands found here are severely fragmented with human presence throughout the year. Critical analysis and mapping of remaining wildlife habitats are required to strategise protection of endangered species in the sanctuary.

**Initial survey and Species distribution modelling for swamp deer:**

The Wildlife Institute of India has initiated a research program supported by Uttarakhand Forest Department on swamp deer movement pattern and inbreeding status along the upper Gangetic plains. Swamp deer is the state animal of Uttar Pradesh which is distributed across the protected areas of Dudhwa National Park, Hastinapur sanctuary, Bijnor forest division, Pilibhit forest division, Kishanpur Wildlife Sanctuary and Katarniaghat Wildlife Sanctuary. There are two swamp deer habitat blocks currently found in Uttar Pradesh: the upper block restricted within the Sharda river basin, and the lower block along the upper Gangetic plains. The upper block habitat is connected to the southern Nepal population, another stronghold of the subspecies. The Sharda basin swamp deer populations mostly reside inside protected area of Dudhwa and Pilibhit Tiger Reserve, and receive good protection. Much ecological information on swamp deer is also available from this region. However, swamp deer information from the lower habitat block around upper Gangetic plains of Uttar Pradesh and Uttarakhand is limited. There are reports of swamp deer presence in the Jhilmil Jheel Conservation Reserve, Uttarakhand (population rediscovered in 2005) and Bijnor barrage area of Hastinapur Wildlife Sanctuary, Uttar Pradesh (Duckworth et al. 2015). The area between these two regions are human dominated and receive limited protection measures.

**ATTESTED**

*[Signature]*  
CPIO, Wild Life Institute of India, Dehradun



61

Last swamp deer survey in this region in 1995 reported very limited presence of swamp deer along the upper Gangetic plains. Given the importance of this Gangetic plain block for swamp deer conservation, the Wildlife Institute of India has conducted a pilot survey between Jhilmil Jheel Conservation Reserve and Bijnor barrage area during 2016-2017 (Paul et al. 2018). As swamp deer is an obligate grassland species, its presence can be easily correlated with the remaining grassland habitats in this region. We divided the study area into 10 different survey zones and conducted extensive surveys to identify both direct as well as indirect evidences of swamp deer presence. Our surveys revealed multiple swamp deer harbouring areas within non-protected wetlands along the whole stretch of upper Ganges and a previously unreported population in Jamanpur, near Afzalgarh town, Uttar Pradesh. Data on disturbances were also collected with a focus on habitat conversion, livestock grazing, poaching, conflict and other types of anthropogenic activities in the survey areas. We found swamp deer evidences from multiple survey zones encompassing Hastinapur Wildlife Sanctuary. These areas are locally known as:

- 1) Balia Khadar (Zone 6)
- 2) Almawala Jheel (Zone 9)
- 3) Rauli Ghat (Zone 8)
- 4) Bijnor Barrage area (Zone 7)

During the survey we were able to map the grassland regions found within this surveyed region. All swamp deer evidence points along with the grassland patches are shown in Figure 2.

**ATTESTED**  
*[Signature]*  
CPIO, Wild Life Institute of India, Dehradun

**ATTESTED**

CPIO, Wild Life Institute of India, Dehradun



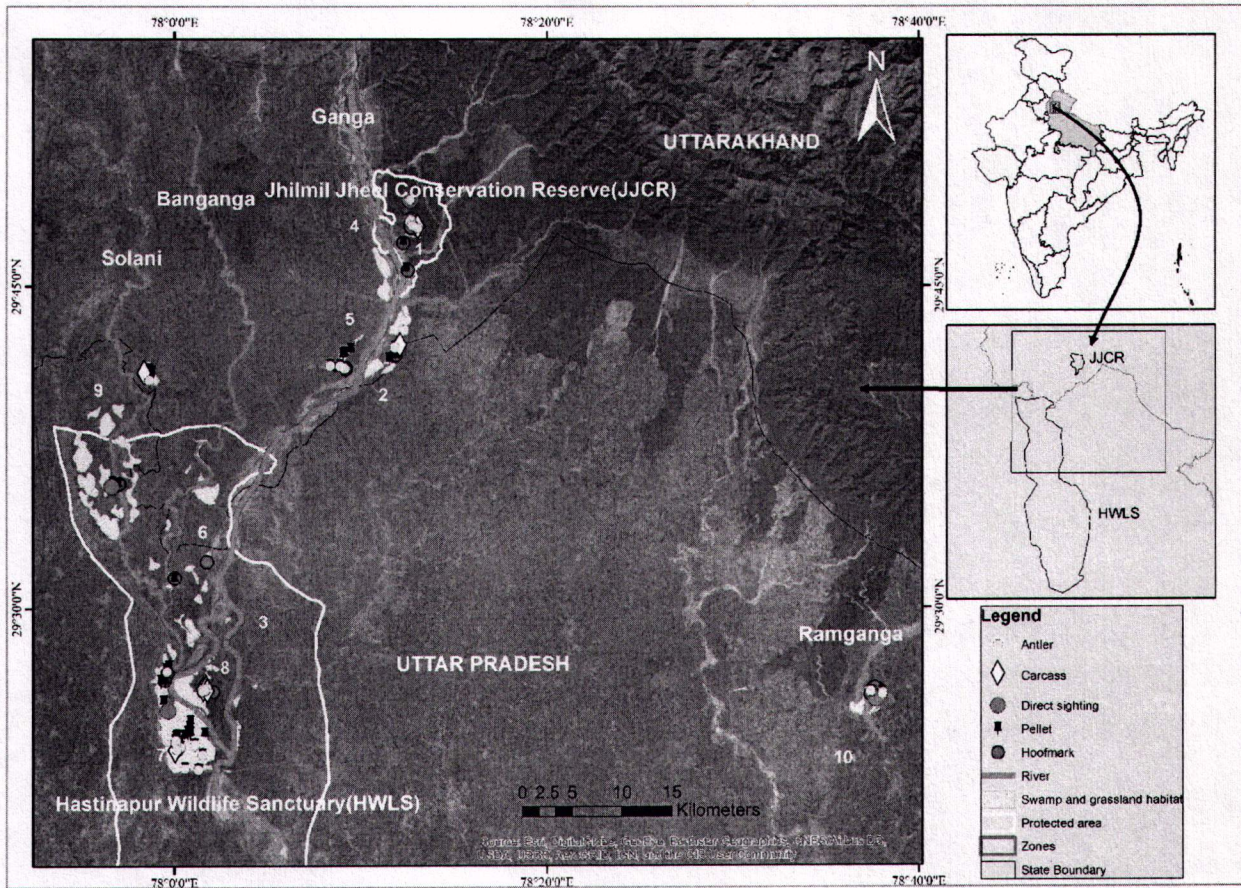


Figure 2: Results of surveys between JJCR and HWLS conducted in 2016-2017

In addition to survey between JJCR and HWLS, we conducted extensive surveys in the Sharda basin to cover all known swamp deer habitats (Pilibhit Tiger Reserve, Kishanpur Wildlife Sanctuary, Dudhwa National Park and Katerniaghat Wildlife Sanctuary) in collaboration with Uttar Pradesh Forest Deptment. Using the presence points of swamp deer from all these surveys a species distribution model was developed to identify potential species habitat in different parts of Uttar Pradesh (Figure3). The predictive model indicated potential swamp deer presence in areas below Bijnor barrage upto Farukhabad. However, the habitats predicted in many of these areas are fragmented and requires validation through intensive surveys. Also it will be critical to map these habitats and study swamp deer connectivity for long term conservation of the species and its habitats.

**ATTESTED**  
 CPIC, Wild Life Institute of India, Dehradun  
 08/05/18

ATTESTED

CPIC, Wild Life Institute of India, Dehradun



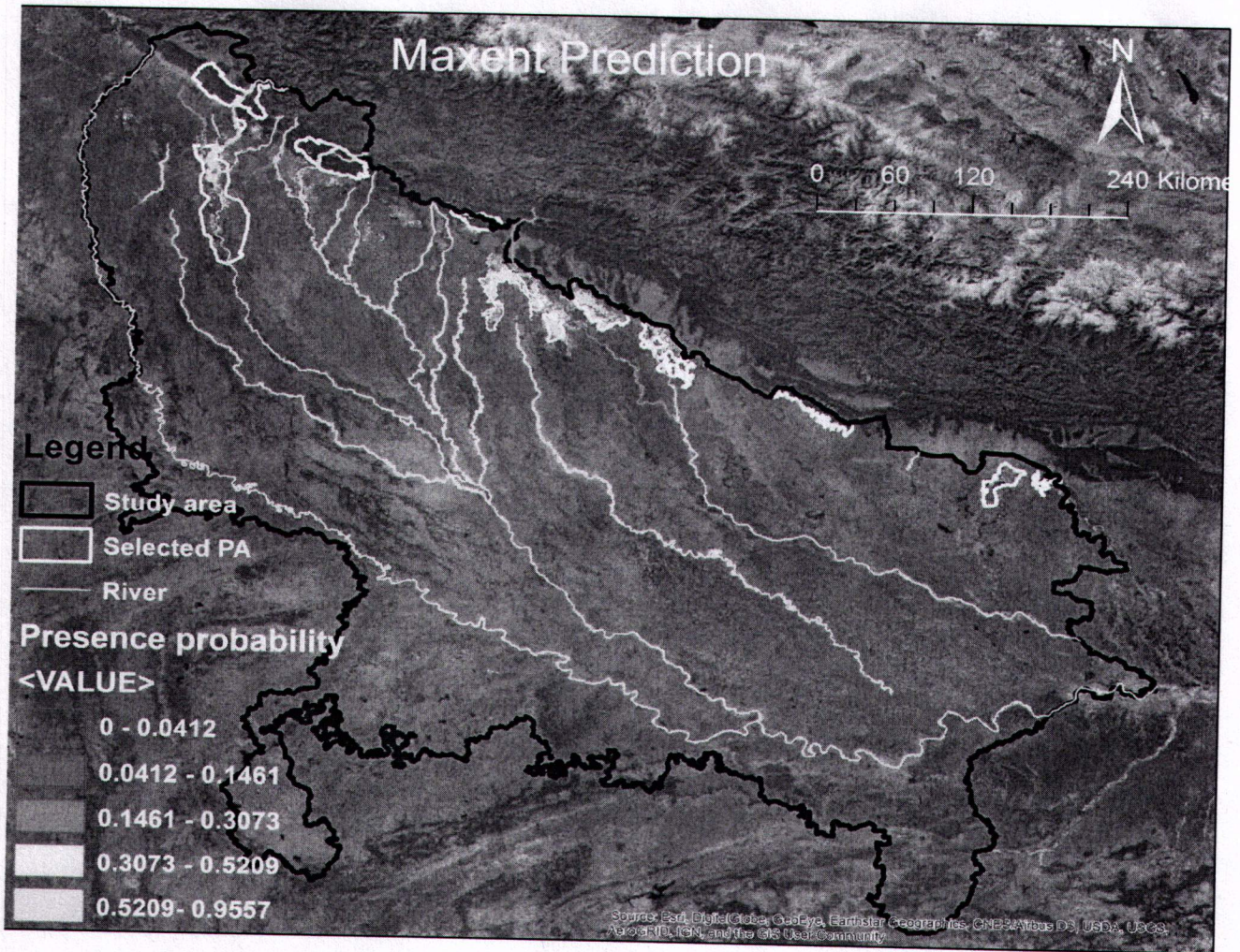


Figure 3: Probable swamp deer distribution from MaxEnt modeling

**Confirmatory ground surveys for swamp deer presence within the sanctuary south of Bijnor Barrage:**

As part of confirmatory surveys of the habitat modelling work, we conducted extensive surveys between Bijnor barrage and Garhmukteshwar along the right bank of Ganges in collaboration with Uttar Pradesh Forest Department in April-May 2017. Subsequently we also carried out extensive surveys in the left bank of Ganges to look for swamp deer. Swamp deer evidences (both direct as well as indirect) were found in parts of Muzafarnagar, Meerut, Bijnor and Hapur Forest Divisions (Figure 4), confirming the effectiveness of the predictive model indicating swamp deer habitats. Though we found pellet samples in Kali dhab area of Amroha forest division, genetic analysis needs to be done to confirm them as swamp deer. In addition to swamp deer evidences, data were collected on wildlife habitats and other species

**ATTESTED**

CPIO, Wild Life Institute of India, Dehradun



like hog deer. In Figure 4, the yellow circle presents the swamp deer evidences found during confirmation survey following the prediction given by Maxent.

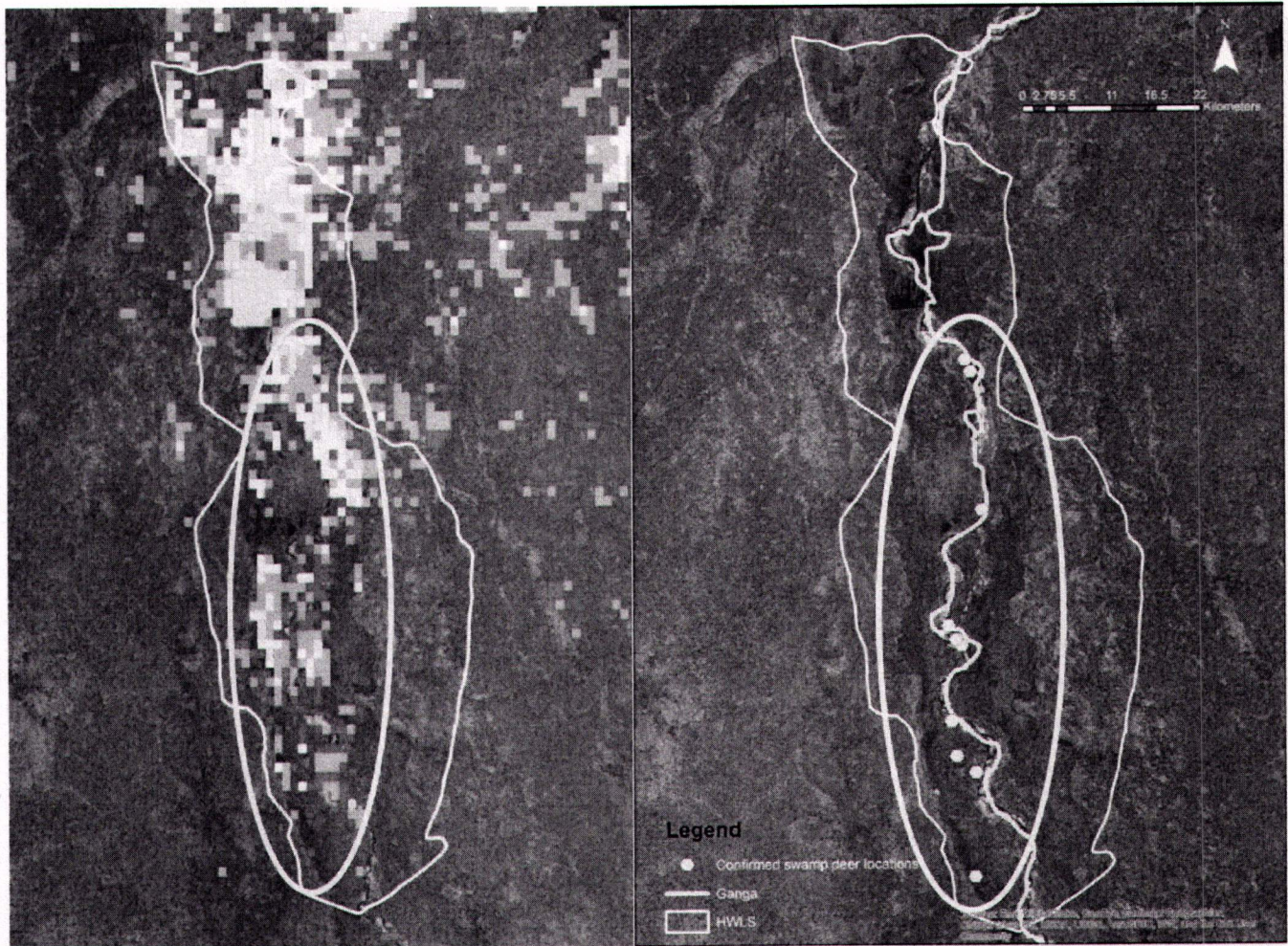


Figure 4: Swamp deer evidences between Bijnor barrage and Garhmukhteshwar (yellow circle). We surveyed the circled area (right bank of Ganga) based on predictive species distribution model and yellow points in the right pane of the figure shows area with confirmed swamp deer presence.

**Results:**

Our surveys clearly indicate patchy distribution of swamp deer within the limits of Hastinapur WLS. Swamp deers are not widely distributed throughout the designated boundaries of Hastinapur WLS and are restricted only to suitable grassland and wetland habitats along river Ganga that are currently subjected to severe anthropogenic disturbances.

ATTESTED  
CPIO, Wild Life Institute of India, Dehradun



59

We found more evidences of swamp deer on the right bank than left bank. From our surveys we conclude that the wildlife habitats within Hastinapur WLS (forest and specifically the grassland patches) are highly fragmented with high anthropogenic disturbances (Figures 5 and 6). Details of all the areas are provided in Table 1 and 2. We believe that this work will help in formulation of conservation strategies within such a human dominated landscape. Based on our survey it will be easier to delineate the wildlife zones within Hastinapur WLS so that appropriate management interventions can be made to protect these critical areas.



Figure 5: Mapped wildlife habitats of HWLS ( includes grasslands and reserve forests)

**ATTESTED**

*[Handwritten Signature]*  
CPIC, Wild Life Institute of India, Dehradun

CPIC, Wild Life Institute of India, Dehradun





Figure 6: Zone wise numbering of habitats (details in Table 1 and 2)

**ATTESTED**  
*[Signature]*  
CPIO, Wild Life Institute of India, Dehradun

ATTESTED

Wild Life Institute of India, Dehradun



Table 1: Details of critical wildlife habitats on right bank of Ganges in HWLS

Zone no	Local Place	Forest Division	Habitat Characteristics	Wildlife evidence	Disturbances Recorded
1	Almawala, Joggawala Jheel	Muzaffarnagar Forest Divison(MuFD)	Wetlands comprising of Typha sp and Phragmites sp.	Swamp deer/Hog deer	Encroachment, wetland interspersed with crop fields
2	Baliakhadar complex	MuFD	Fragmented grasslands dominated by Saccharum sp.	Hog deer mainly	Encroachment
3	Rauli Ghat	MuFD	Wetland comprising of Typha sp and Phragmites sp.	Swamp deer	Less dis
4	Bijnor barrage area	MuFD	Good habitat comprising of Phragmites and Typha in wet parts and Saccharum in dry parts	Swamp deer/Hog deer	Best swamp deer habitat but disturbance from human activities
5	Shivpuri area	MuFD	Reserve forest	Nilgai, no swamp deer	Human activities
6	Ramraj	MuFD	Boodiganga Jheel	Hog deer	Extremely fragmented with lots of disturbance
7	Dharampur	MuFD	Grassland dominated by Sacharum sp	Swamp deer mainly	Live stock grazing
8	Majahidpur	MuFD/MeerutFD	Grassland dominated by Sacharum sp	Hog deer	Lot of human activities
9	Mahamudpur-Hastinapur-Nangla Gusai	MuFD/MeerutFD	Long stretches of reserve forest	Nilgai but no swamp deer	Encroachment
10	Hadipur Gaori	MeerutFD	Small grassland dominated by Saccharum sp	Hog deer	Surrounded by cropfields on all sides
11	Jalalpur/Hatoopora Khadar	MeerutFD	Grassland dominated by Saccharum sp	Swamp deer	Good habitat but human presence is prevalent

ATTESTED

CPIO, Wild Life Institute of India, Dehradun



(54)

12	Tarbiyatpur	MeerutFD	Grassland dominated by Saccharum sp	Hog deer mainly	Extremely fragmented grasslands
13	Kutubpur	Meerut FD/HapurFD	Small grassland patch	None	Severe disturbances
14	Kotla Jheel	Hapur FD	Jheel dominated by Typha sp and Phragmites sp.	Swamp deer	Swamp deer habitat but live stock present
15	Gadawali	Hapur FD	Forest patch	None	Surrounded by cropfields on all sides

Table 2: Details of the wildlife habitats on left bank of Ganges in HWLS

Zone no	Local Place	Range, Division	Habitat Characteristics	Wildlife evidence	Disturbances Recorded
16	Area adjacent to Bijnor Barrage area across Ganga	Bijnor FD	Grassland dominated by Saccharum sp	None	Human presence, cropfields, Gujjar huts
17	Jeevanpuri Khadar	Bijnor FD	Grassland dominated by Saccharum sp with Eucalyptus plantations present	Swamp deer/Hog deer	Encroachment, Gujjar huts in swamp deer habitat
18	River island opposite to Jeevanpuri Khadar	Bijnor FD	Grassland dominated by Saccharum sp but moist areas also present	Swamp deer/Hog deer	Relatively less disturbed
19	Daranagarganj Khadar	Bijnor FD	Grassland comprising of Saccharum sp and Typha sp	None	Highly disturbed
20	Jahanabad Khadar	Bijnor FD	Grassland dominated by Saccharum sp	Hog deer	Human activities
21	Jheel	Bijnor FD	Wetlands comprising of Phragmites sp	Swamp deer but genetic confirmation needed	Extremely fragmented with lots of disturbance
22	Kalyanpur Khadar	Bijnor FD	Grassland mainly dominated by Saccharum sp but trees also present in some areas	Swamp/Hog deer genetic confirmation needed	Live stock grazing, roads passing through grasslands

ATTESTED

ATTESTED

CPIO, Wild Life Institute of India, Dehradun



53

23	Faizipur Khadar	Bijnor FD	Reserve forest but grass cover underneath	Hog deer, Nilgai	Lot of human activities
24	Sujatpur Khadar	Bijnor FD	Grassland dominated by Saccharum sp	Hog deer	Encroachment, cropfields present
25	Rahmanpur Khadar	Bijnor FD	Grassland and reserve forest complex	None	Surrounded by cropfields on all sides
26	Dattiana Forest	Bijnor FD	Grassland and reserve forest complex	Hog deer	Livestock grazing
26	Rusulpur	Amroha FD	Reserve forest	None	Less disturbed
27	Kali dhab, Bastora rani Khadar	Amroha FD	Big Grassland dominated by Saccharum sp	Swamp deer /Hog deer but genetic confirmation needed	Very big grassland patch but extreme live stock grazing present

**Conclusion:**

Our survey shows that critical wildlife areas within the designated 2,073 sq km of Hastinapur WLS are highly restricted and are primarily confined to wetland and grassland habitats along river Ganga. These grassland and wetland habitats along Ganga, though fragmented, continue to support populations of swamp deer. A large proportion of Hastinapur WLS lies within very high human use area. Instead of diluting efforts in managing a large wildlife sanctuary that is predominantly under human use, management interventions should focus on intensively managing these identified critical wildlife habitats. Connectivity between these fragmented patches along Ganga should be strengthened and protection activities should be intensified in these critical wildlife habitats within the designated Hastinapur WLS. Hastinapur WLS, so far, has served its purpose in sustaining swamp deers. However, vast tracts of land within the sanctuary are not significant swamp deer habitats and management of swamp deer within Hastinapur WLS need careful consideration.

**References:**

DUCKWORTH, J.W., KUMAR, N.S., POKHERAL, C.P., BARAL, H.S. & TIMMINS, R.J.  
(2015) *Rucervus duvaucelii*. *The IUCN Red List of Threatened Species v.3.1*.

**ATTESTED**

CPIO, Wild Life Institute of India, Dehradun



KHAN, A. & KHAN, J.A. (1999) Conservation of swamp deer (*Cervus duvauceli duvauceli*) in Hastinapur Wildlife Sanctuary. *Proceedings of 4<sup>th</sup> International Deer Biology Congress*, Hungary, 194-199.

PAUL, S., PANDAV, B., MOHAN, D., HABIB, B., NIGAM P., MONDOL, S. (2018) Current distribution and status of swamp deer (*Rucervus duvaucelii duvaucelii*) along upper Gangetic plains in north India. *Oryx* (*in press*).

QURESHI, Q., SAWARKAR, V.B., RAHMANI, A.R. & MATHUR, P.K. (2004) Swamp deer or barasingha (*Cervus duvauceli* Cuvier, 1823) In *Ungulates of India* (Eds.: K. Sankar and S.P. Goyal) *Envis Bulletin: Wildlife and Protected Areas*, Vol.07, No. 1, Wildlife Institute of India, Dehradun, India, pp. 181-192.

ATTESTED  
*[Signature]*  
08/05/18

CPIO, Wild Life Institute of India, Dehradun