

Mitigation and monitoring measures for proposed high level bridge construction through Son Gharial Sanctuary on Bahri-Hanumana road state highway-52 near Jogdah, Madhya Pradesh



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Introduction

Construction of the overhead bridge on the Bahri-Hanumana SH-52 at Jogdah in the Son Gharial Sanctuary received conditional clearance at the 28th meeting of the Standing Committee of the National Board for Wildlife (SC-NBWL), held on March 20, 2013 (Annexure 7). The proposed bridge is 12m wide and 683m long with 19 pillars. The bridge, in its entirety, will be constructed within the boundary of the Son Gharial Sanctuary. The Hon'ble Supreme Court vide order (IA No. 3709-3711, WP(C) No. 202 of 1995) has imposed a condition that "while constructing the new bridge, the user agency will ensure that no debris is dumped or allowed to flow into the river to prevent adverse impact on the aquatic habitat and aquatic wildlife of the Sanctuary, and the conditions on which the project has been cleared by the standing committee of the National Board for Wildlife including compliance with the conditions stipulated by the Chief Wildlife Warden will be complied with". The SC-NBWL has recommended the proposal "subject to the condition that the CWLW shall ensure that the construction of the bridge does not affect the nesting sites of gharials, crocodiles and turtles and such other conditions, as may be stipulated by the CWLW". The Joint director of Sanjay Tiger Reserve, Sidhi, Govt. of Madhya Pradesh (MP) requested the Director, Wildlife Institute of India to provide expert opinion for finalising the conditions stipulated by CWLW (Annexure 6). Therefore, the Wildlife Institute of India agreed to provide the required recommendations and mitigation measures for the bridge construction in the proposed bridge construction area (Annexure 8-13).

The Chief Wild Life Warden, Govt. of Madhya Pradesh had stipulated the following conditions for compliance while appraising the bridge construction project (entry no. iii in Annexure 5).

1. No labour camp shall be set up within Sanctuary limits.
2. No construction raw material shall be sourced from within Sanctuary limits.
3. The user agency shall abide by all the sections of Wildlife Protection Act, 1972.
4. Construction-related waste must not be dumped in the Sanctuary during the bridge construction.
5. The use of Sanctuary land for storing and transporting construction materials is prohibited.
6. As per Orders of the Hon'ble Supreme Court of India, mitigation measures proposed by the Wildlife Institute of India, Dehradun towards reducing adverse impacts on aquatic biodiversity will be implemented at the cost of the user agency.

Effects of bridge construction on the river ecosystem

Humans have always altered their surroundings to better adapt them by creating various developmental activities such as dams, bridges, roads and other infrastructures (Biswas and Chatargee 2018; Wakefield 2020). The construction activities like bridges and roads can negatively affect the nearby habitats of various wild flora and fauna (Pathak et al. 1988; Rajvanshi et al. 2001; Raman 2011). The construction of bridges often requires diversion or blockage of river water upstream and downstream of the construction site (Palmer et al. 2020). Changes to stream hydrology in an environment like the Son Gharial Sanctuary, which is already under severe anthropogenic stress (Dilawar & Sharma 2016), will only have a detrimental impact on how the prime habitat at Jogdah is used.

The proposed bridge is a basic type of bridge using pillars. The construction of these bridges requires drilling and blasting in the river bed. This might result in the mass loosening of soil and gravel and the flow of debris downstream towards the Jogdah. Blasting and drilling activities will produce a lot of noise and vibrations in the river and will likely impact the native wildlife in the area negatively. Moreover, the movement of heavy machinery and vehicles transporting raw material will also add to the water and noise pollution at the site.

Suspended solids directly impact the availability of direct sunlight in the water, affecting aquatic vegetation's ability to photosynthesize (Gallegos, 2001). Similar harmful effects on the local fish species have been linked to the accumulation of suspended particles in the area. The species that depend on fish are probably negatively impacted by the depletion of the prey base. Important fish-eating animals include the critically endangered Gharial *Gavialis gangeticus*, the endangered Indian skimmer *Rynchops albicollis* and other species groups such as softshell turtles, and several waterbirds.

Son Gharial Sanctuary

The Son river is the largest southern tributary of the River Ganga. It originates near the Amarkantak in MP, and after a course of 784 km towards the west, it joins the Ganga river in Patna in Bihar. The river is among the few rivers in Northern India supporting the wild Gharial population. The Son Gharial Sanctuary (SGS) was established under Project Crocodile in 1981 to focus on Gharial conservation and population recovery efforts. This is the second-longest riverine sanctuary in the country after the National Chambal Sanctuary (Nair & Katdare 2013). The sanctuary covers 210 km of stretch, including 161 km of Son

river, 23 km of Banas river and 26 km of Gopad river in MP. The sanctuary used to be one of the few locations in the world that could sustain a naturally breeding Gharial population. Apart from Gharial, SGS also supports breeding populations of the Endangered Indian Narrow-headed softshell turtle *Chitra indica*, and the Endangered Indian Skimmer *Rynchops albigollis*, Mugger *Crocodylus palustris* etc.

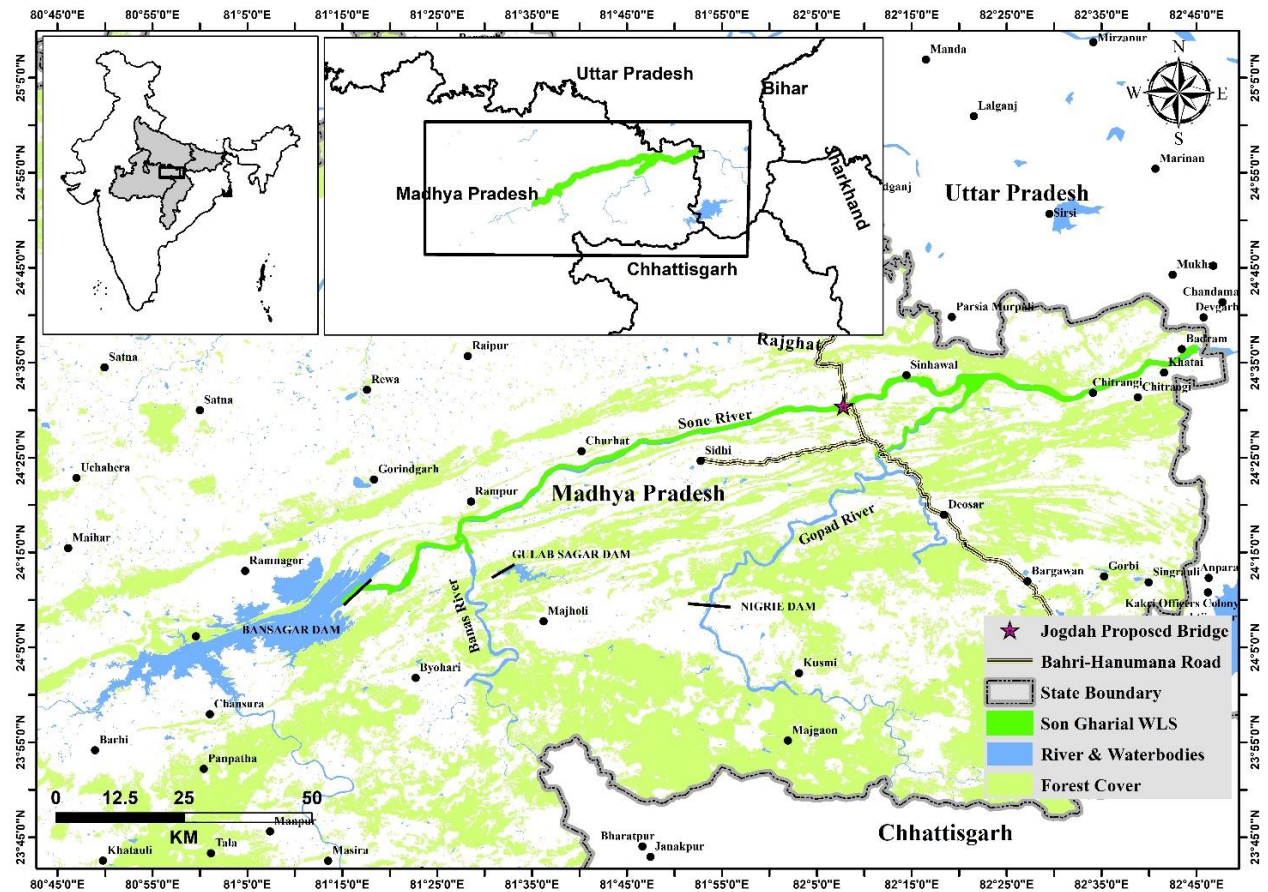


Figure 1. Location of Son Gharial Wildlife Sanctuary and proposed bridge

However, the Bansagar Dam, which marks the western boundary of the SGS, has significantly altered the Sanctuary's hydrology by its water regulation, posing a serious threat to the Sanctuary's ecological integrity (Annexure 1 P). Subsequently, Nair et al. (2016) found that the water flow in the SGS is at a critically low level to sustain the requirements of Critically Endangered Gharials and other aquatic species, and suggested maintaining water level downstream of the dam to support the survival of the aquatic fauna.

Currently, the Son-Banas River confluence area is the only place where Gharials can be found. Downstream from Jogdah, there were a few deep pools where Gharials could be found, but only Jogdah was used for nesting. Since 2016 after the death of the breeding male Gharial in fishing nets, no nesting activity has been observed in SGS. However, this year

during our survey we have recorded an active nesting site of Gharial in Jogdah. Due to declining Gharial populations, inadequate water flow, and illicit activities like mining and fishing, the sanctuary's conservation potential has not been fully achieved.

The construction of the proposed high-level bridge on the Bahri – Hanumana road, SH-52 can pose a serious threat to achieving the above-mentioned objectives for the conservation of Gharial and other aquatic species.

Jogdah Deep Pool

Jogdah is the most crucial deep pool among the several deep pools of the SGS. It starts from downriver from the existing bridge at Jogdah and is approximately 2.4 km long water pool. It has around 140.67 ha area (2.01%) of Deepwater and 504.1 ha (7.2%) of shallow water with 189.27 ha area of sand (Nair et al. 2016). The study by Nair et al. (2016) revealed that the deep water and sand areas are decreasing in the Jogdah pool, raising concerns for conservationists. Yet the maximum number of Gharial and Muggers have been reported from the region (Khobragade and Sharma 2019). Along with the only breeding site of Gharial in SGS and a Mugger breeding site in the area with other species of conservation importance such as the Indian narrow-headed softshell turtle (*Chitra indica*) and the Indian Skimmer (*Rynchops albicollis*) (Nair & Katdare 2013, Dilawar & Sharma 2016).

Field survey June to July 2022

The present study was conducted during the month of June and July, 2022. We performed transect walks (each of minimum 5 km) and sign survey on the east and west direction of the proposed Jogdah bridge along the north and south river banks of the Son River. The survey was conducted with the aim to assess the faunal diversity and its abundance and identification of important breeding and roosting sites of the birds and reptiles.

We have also visited the sanctuary's Rajghat area, around 50 km downstream from the bridge construction site and documented the breeding locations of threatened wildlife species.

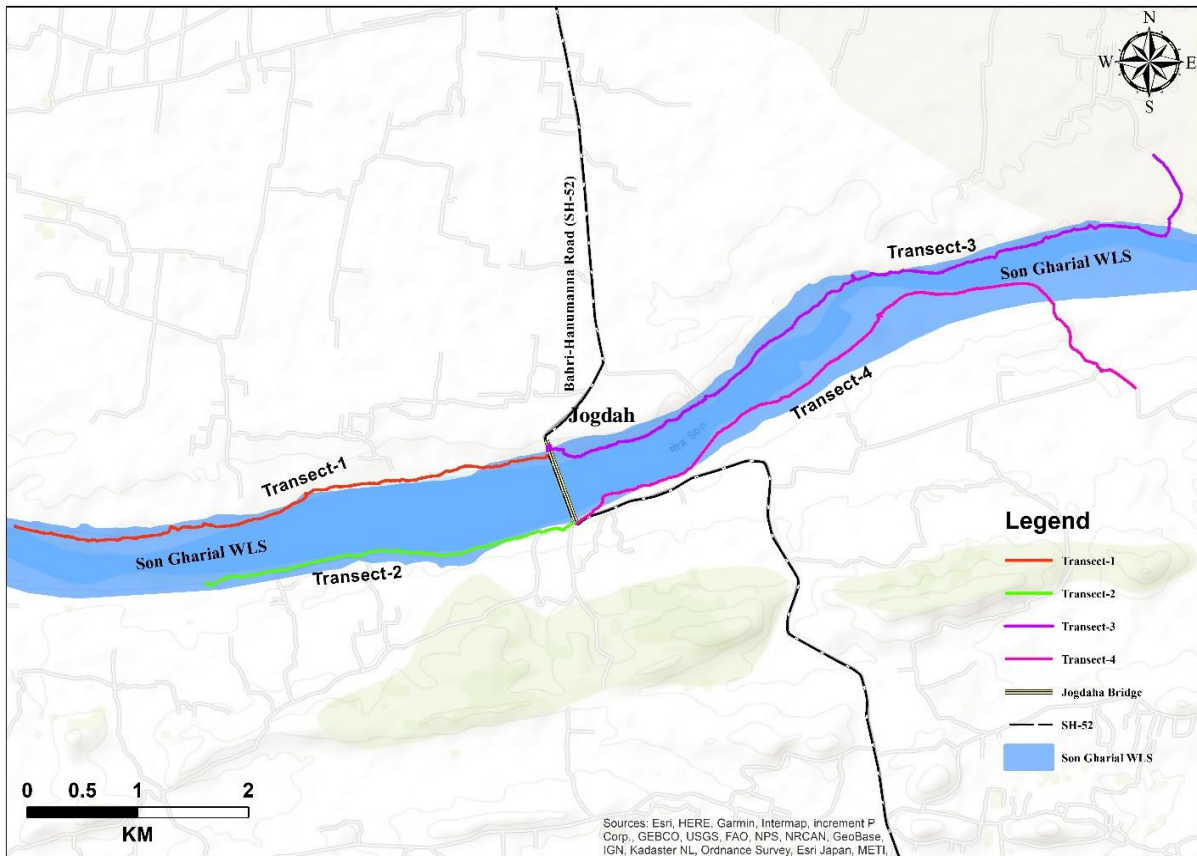


Figure 2. Transects locations at proposed bridge site in Jogdaha along both sides of the river

Altogether 1279 individuals of 70 species of birds belonging to 38 families and 17 orders were recorded within 5 km each side of the proposed bridge from either riverbank. Globally threatened species such as Endangered Egyptian Vulture *Neophron percnopterus*, Black-bellied Tern *Sterna acuticauda*, Vulnerable species River Tern *Sterna aurantia*, and Near Threatened species Great Thick-knee *Esacus recurvirostris*, Black-necked Stork *Ephippiorhynchus asiaticus* and a large number of River Lapwing *Vanellus duvaucelii* were recorded from the study area. A roosting site of Black-crowned Night-heron *Nycticorax nycticorax* was also recorded from the north bank of the river. Among the recorded species a total of 48 species have protection status under the Indian Wild Life Protection Act 1972 (WLPA). Two species such as Indian Peafowl *Pavo cristatus* and Shikra *Accipiter badius* are in Schedule I category which are accorded the highest level of protection under WLPA (Annexure 2).

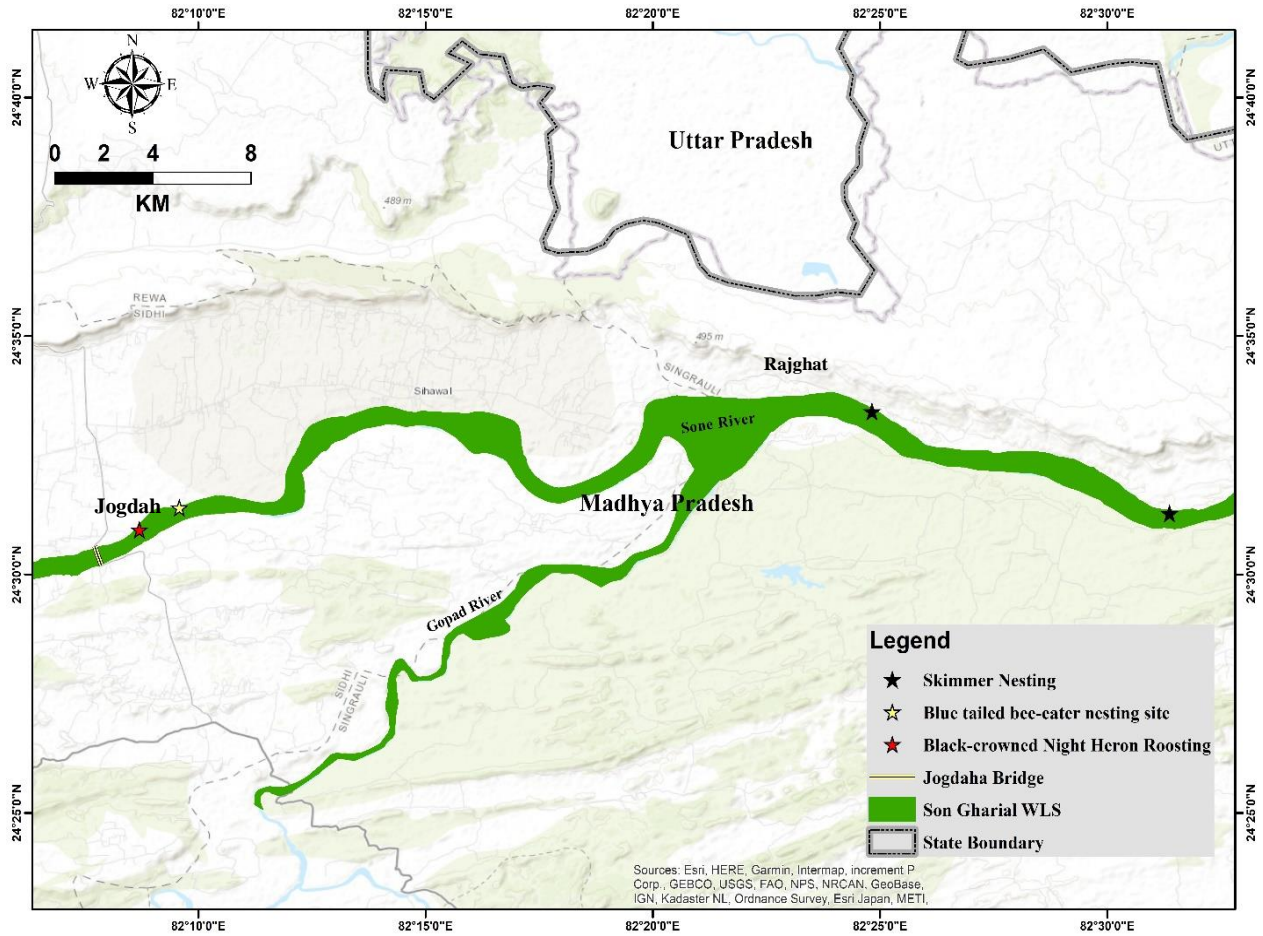


Figure 3. Locations of birds nesting and roosting sites in Jogdaha and Rajghat area.

Among the wild mammals, two individuals of Indian grey mongoose *Herpestes edwardsii* and a Golden Jackal *Canis aureus* were recorded through direct sightings, both species are under Schedule II of WLPA. We have also recorded the signs of wild pig digging from several places towards the downstream of the river from the bridge. The species falls under the Schedule II category of WLPA (Annexure 3).

Among the reptiles Critically endangered Gharial *Gavialis gangeticus*, Endangered Indian Narrow-headed Softshell Turtle and Vulnerable Mugger *Crocodylus palustris* were recorded with two, one and two adult individuals respectively. An active Gharial nesting site was recorded with 50 hatchlings. A female Gharial was present at the nesting site guarding the hatchlings in Jogdaha. A Mugger crocodile nesting site was also recorded within 10 meter distance from the Gharial nesting site. Active nesting of Mugger was not observed during the survey period, however, eggshells were found at the site (Annexure 1 E-J).

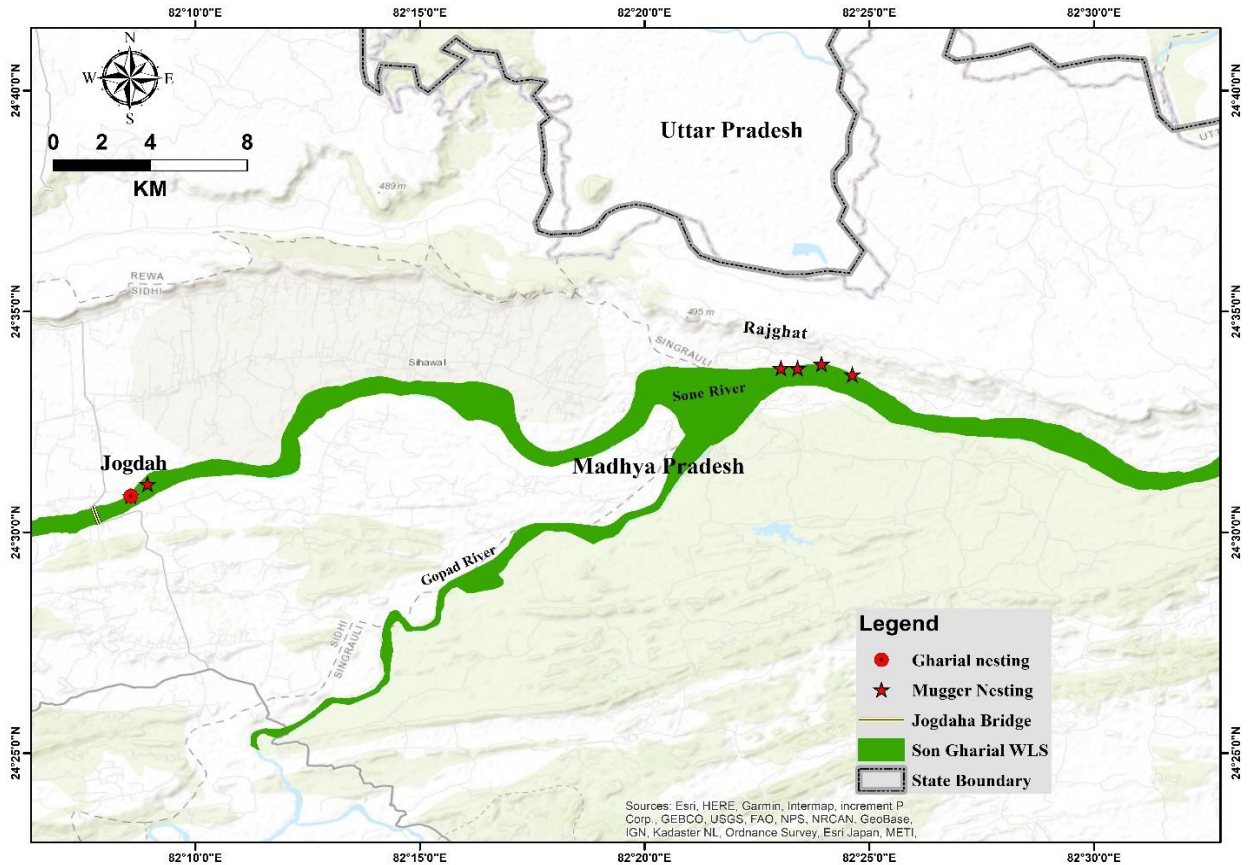


Figure 4. Gharial and Mugger nesting locations in Jogdah and Rajghat area.

A globally Near threatened species, Bengal monitor lizard *Varanus bengalensis* and an individual of Chequered Keelback snake were recorded from the north bank of the river on the west side of the proposed bridge and east side of the bridge, respectively (Annexure 4). In addition, we also visited the Rajghat area around 50 km downstream from the proposed bridge construction site and recorded four nesting sites of Mugger and two Indian Skimmer nesting sites (Annexure K-M). However, all these sites were not active at the time of survey. Bridge construction in the proximity of the ideal breeding habitat of Gharial and Mugger will severely reduce and affect the chances of the individuals survival and breeding at Jogdah. Hence regular monitoring and mitigation measures are essential during the construction and post-construction of the bridge in the Son river near the Jogdah.

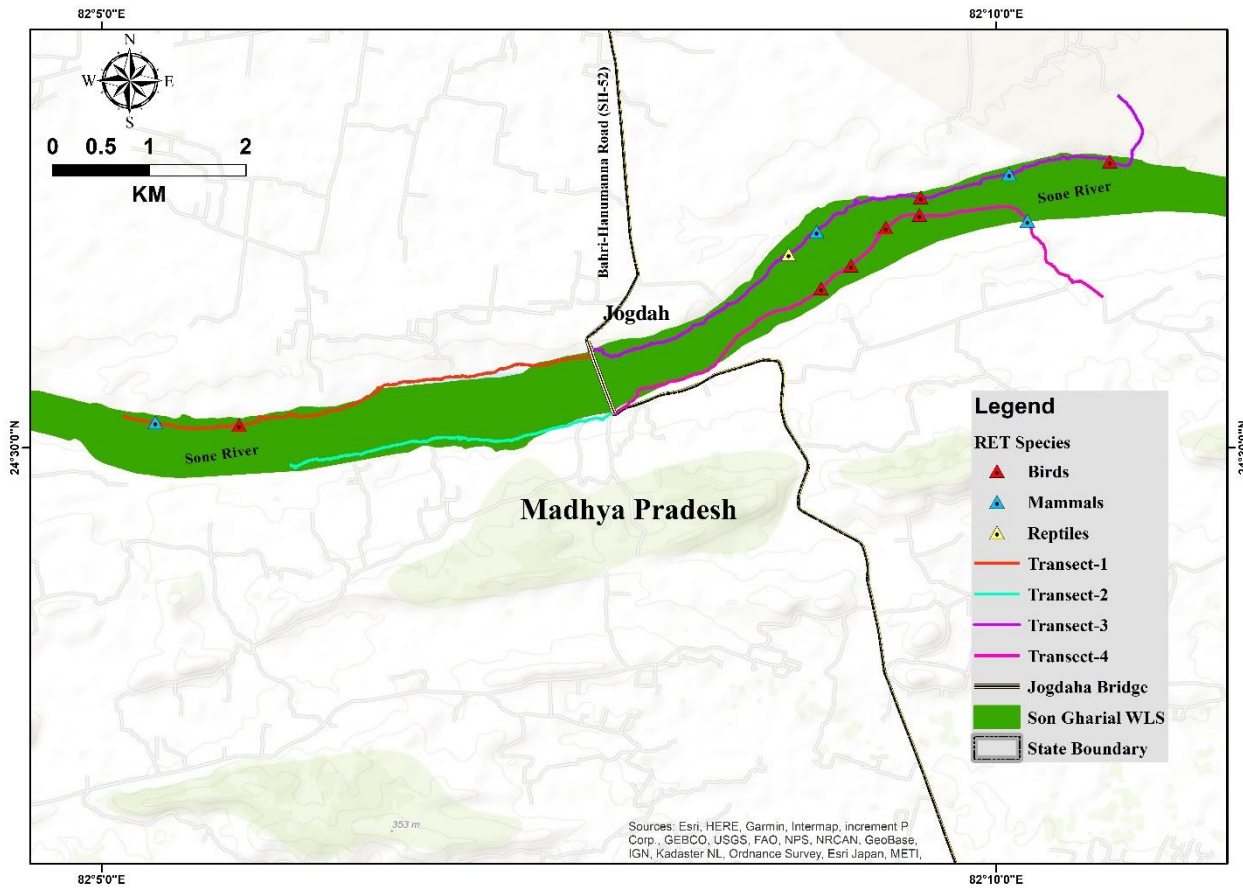


Figure 5. RET species locations along the transects walked

Monitoring Measures

Three phases of monitoring pre-construction, during construction and post-construction regularly are recommended. On-field forest department staff should be trained in the use of essential field equipments for monitoring. Baseline information should be gathered before the commencement of construction work; subsequently, periodic field visits (once in 3 or 4 months) should be carried out for monitoring purposes.

- 1- **Pre-construction monitoring** – An assessment should be carried out to determine the current status of the river, particularly the area immediately surrounding the proposed bridge location. Thresholds for water and noise pollution should be established before the construction activity begins. A baseline of water quality should be determined by testing the water at Jogdaha for various parameters, viz., conductivity, pH, turbidity, Dissolved Oxygen (DO), faecal coliforms, Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), total dissolved solids, total suspended solids and heavy metals. Noise levels at Jogdaha during various times of the day should be determined and recorded.

- 2- **During construction** - Observe and identify changes in wildlife presence and abundance, animal behaviour, noise pollution, and water pollution in the environment. Real time observation in changes will help in informing any necessary alterations in the construction activities.

2.a.- Active monitoring protocol: After accidental death of the two adult Gharial males in fishing nets in 2015, Gharial nesting in Jogdah has not been observed till last year. The Deori Gharial Rearing Centre at Morena has released a total of 32 juvenile Gharials at Jogdah during the past few years, in an effort to revive the Gharial population in the river. By preserving the ecological integrity of the deep pool at Jogdah, we can ensure the survival of these individuals including Gharial as well as Mugger.

After a long gap of around six years, the Gharial nesting occurred in the Jogdah deep pool this year. An aquatic fauna survey report in 2019 has also reported the highest number (42) of Gharial in the Jogdah region to Rampura and also 13 individuals of Mugger were reported from the region (Khobragade and Sharma 2019). It is thus important to observe the responses of the Gharial population at Jogdah. Population estimation, survey during breeding and radio telemetry are some valid methods of monitoring. Any alterations in behaviour initiated can be examined in light of the disturbances.

2.a.1. Water quality monitoring: Testing the water at Jogdah for various parameters, such as conductivity, pH, turbidity, DO, faecal coliforms, BOD, COD, total dissolved solids, total suspended solids, and heavy metals, should be carried out to establish a baseline of water quality.

Once bridge construction commences, the water quality should be checked on a regular basis (once in every three months). Testing of the water should be done both upstream and downstream of the construction site to keep track of any changes in the parameters stated above that could indicate deteriorating water quality.

Local residents of the area rely on the Son River as a source of water for drinking and domestic purpose, hence it is important to guarantee that the "Water Quality Criteria" of the Central Pollution Control Board are met.

Designated-Best-Use	Class of Water	Criteria
Drinking Water Source without conventional treatment but after disinfection	A	a) Total Coliforms Organism MPN/100 ml shall be 50 or less b) pH between 6.5 and 8.5 c) Dissolved Oxygen 6mg/l or more d) Biochemical Oxygen Demand 5 days 20°C 2mg/l or less
Propagation of Wild life and Fisheries	D	a) pH between 6.5 to 8.5 b) Dissolved Oxygen 4mg/l or more c) Free Ammonia (as N) 1.2 mg/l or less

2.a.2. Noise level monitoring: As of now construction work is going on for the bridge, and there is movement of heavy machinery. There must be drilling and blasting activities happened in the region during the construction of pillar for the bridge and the noise level must have been high during that time, and it could have affected the native wildlife in the region. Therefore, it is important to evaluate both surface and underwater vibrations and noise levels. Readings taken prior to construction should be used as a baseline to track the rate of rise as work progresses. Utilizing hydrophones and real-time noise monitoring equipment, and routine monitoring should be done.

According to the Noise Pollution (Regulation and Control) Rules from 2000, the Son Gharial Sanctuary is a "Silence Zone." Following are the thresholds listed by the act:

Area Code	Category of Area / Zone	Limits in dB(A) Leq*	
		Day time (6 AM - 10 PM)	Night time (10 PM - 6 AM)
(D)	Silence Zone	50	40

However, during our survey in June and July 2022, we noticed the bridge construction work had already begun. Pillars for the bridge were already constructed and the upper portion construction has also been started. So monitoring phase of pre-construction and during construction is not possible to perform now.

2.b. Post – construction monitoring- It will facilitate a thorough assessment of the bridge construction's effect on the local flora and fauna. After the bridge construction is finished, the aforementioned activities may continue for few years. Construction of a bridge may have

long-lasting and, in some cases, permanent effects. Continuing to monitor the ecology of the region will help in understanding the cumulative impacts of the bridge construction.

The forest department has to actively monitor the population status, breeding behaviour and threat assessment of critical species such as Gharial, fresh water turtles and riverine birds post bridge construction.

3. Maintaining River Flow - Local wildlife, such as Gharials, Muggers, turtles, etc., are likely to move away due to the continued disturbance. According to findings from earlier studies, the flow of the river is in poor condition and thus it is, necessary to provide a safe way out for resident animals. (Nair & Katdare 2013, Nair et. al. 2016, Son Action Plan, 2019).

Ideal water levels also often trigger the movement of animals, as was seen by the presence of the juvenile Gharial close to the bridge and observed during unseasonal water releases from the Bansagar dam (Nair & Katdare 2014).

But it should be mentioned that no other location downstream of Jogdah provides an ideal habitat. The lateral link between the existing deep water pools has been broken down by low water levels. Numerous locations have become accessible for various human activities because of reduced water levels. Illegal activities such as fishing is currently done in deep pools, which directly threatens the existence of Gharials (Annexure 1 N, O). The two male Gharials at Jogdah, as previously mentioned got killed after being entangled in fishing nets. Whereas sudden increased flow of water in the river also disturb their habitats as it submerges its nesting site (sand), displacement of the sand, and hatchlings also have high chances of being swept away etc. Hence, it is important to maintain adequate river flow throughout the year for providing a suitable habitat to the Gharial in the Son river.

In order to increase lateral connectivity and the conditions of the existing habitat, the forest department should see to it that the suggestions made in the Son Action Plan of 2019 (filed to the NGT) and the study report of Nair et al. 2016 are put into practice.

4. Concluding Remarks

- i. The Son Gharial Sanctuary Action plan (2019) has suggested suspended bridges only and construction to be carried out only during the non-breeding seasons of the endangered wildlife.
- ii. However, during the field survey in the month of June and July 2022, it was found that the pillars were already erected, and the bridge construction was under progress (Annexure 1 A-D).
- iii. Jogdah clearly needs a new bridge. However, its ecological importance as the home to Gharials, which are critically endangered worldwide, should take precedence in this case.
- iv. Priority should be given to the deep pool at Jogdah's relative contribution to preserving the SGS's ecological integrity.
- v. The effects of such an activity, giving rise to a sustained disturbance in the form of water and noise pollution may be in the long term, extending well beyond the duration of the construction.
- vi. Installation of mesh nets along the bridge to prevent throwing of wastes into the river.
- vii. Sign boards can be erected on both sides of the bridge depicting the ecological importance of the river and the breeding site of the Gharial.
- viii. All the above recommendations including mitigation measures will require institutionalized and co-ordinated monitoring. The state forest department may constitute an independent committee for regularly monitoring and implementing the suggested mitigation measures. This committee will prepare quarterly or half-yearly reports regarding the implementation of the suggested recommendations and mitigation measures through regular field visits.

A monitoring committee with the following member may be constituted as proposed:

1. Field Director (FD), Sanjay Tiger Reserve, Madhya Pradesh.
2. Representative of Wildlife Institute of India.
3. Member knowledgeable in wildlife/ecology of the local area as local prominent or non-governmental organization engaged in river ecology in and near the Sidhi district of MP.
4. Gram panchayat/Community leaders/representatives (01) of the villages affected by bridge construction or dependent on Sone river near the Jogdah area.

- ix. A financial outlay for a five-year period (during and post construction) wildlife monitoring with special emphasis on Gharial, freshwater turtles and riverine birds may be prepared by the Forest Department as per the prevailing cost in the area. This financial outlay may include engaging a project biologist, procuring essential field equipments, forest patrolling staff emoluments, vehicle for patrolling staff be budgeted. This regular monitoring will have to be carried out by the Son Gharial Sanctuary Management and entire cost towards this shall be borne by the user agency.

Mitigation measures

- i. The flow of water into the Jogdah pool should not, at any time, be stopped or diverted, it should be at the adequate suggested minimum environmental flow such that it facilitates breeding activities of the Gharial and other inhabiting biodiversity. Such an ecological flow regime must also consider the flow of sediments and nutrients to maintain crucial ecosystem functions.
- ii. It should be imperative to install noise reducing structures in the form of mufflers, screens and ceasing immediate use of machinery violating noise thresholds.
- iii. Based on the seasonal activity patterns of local animals, the construction activities should be carried out within particular time ranges outside the breeding season of endangered wildlife, as advised by the forest department.
- iv. The user agency must ensure the construction camp, where the manual labour force is housed, is self-sufficient as per Sections 33 and 34 of The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and Section 5 of the Madhya Pradesh Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2002. The use of the river for food fishing or water extraction for daily requirements by labourers must be prohibited. To avoid faecal contamination of the river, restrooms and lavatory should be available at or near the campsite. Similar to this, the user agency must take the necessary steps to dispose of waste properly and separately away from riverine habitats, following established norms and guidelines.
- v. The user agency must ensure that no garbage or construction material is dumped into the river or within its ecosensitive zone. Nevertheless, it must routinely clean the river bank and river water around the building site.
- vi. The concerned forest department managing the area, must actively monitor during and post construction work for wildlife status, distribution and abundance.

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Annexure 1 – Photo Album



A. Construction work on the new bridge adjacent to the old bridge



B. Pillars already erected along the river adjacent to the old bridge



C. Construction work on the bridge being carried out



D. Traffic during vehicular movement in the old bridge



E. Gharial view Point Jogdah



F. Hatchlings of the Gharial at Jogdah site



G. Cameras installed by forest department at Jogdah site to monitor the Gharial activities



H. Mugger basking on the banks of the river



I. Mugger basking near the nesting site in the river



J. Indian Softshell turtle on the banks of the river



K. Breeding location of Indian Skimmer (Rajghat)



L. Mugger crocodile hatchlings along the banks of the Son River



M. Fencing along the banks of the river to prevent the Mugger movement



N. Fishing nets close to the nesting site of Gharial and Mugger



O. Fishing activity within the river



P. View of the Bansagar dam on the son River

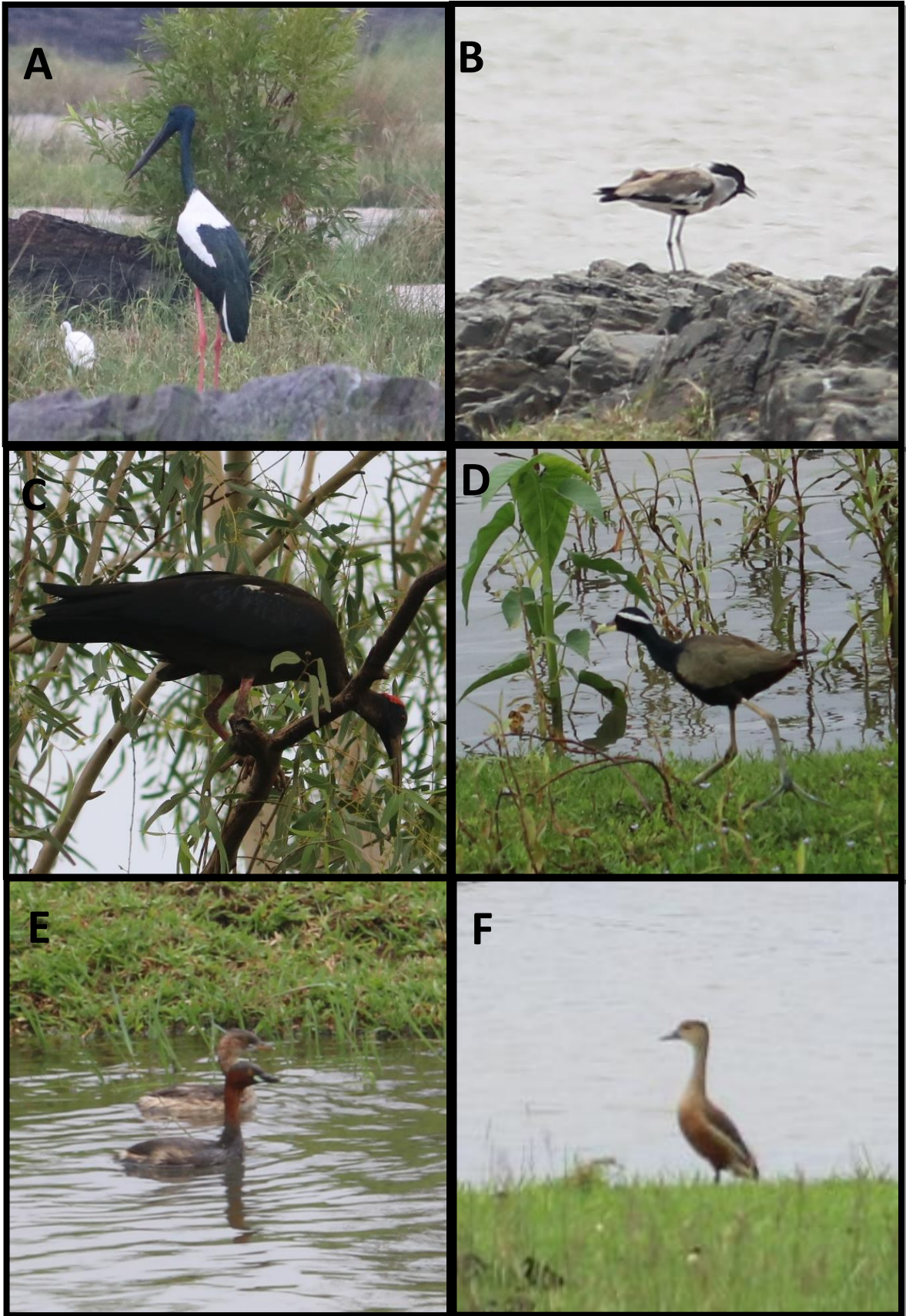
Annexure- 2: List of bird species documented during the Survey

Family/Common Name	Scientific name	IUCN Status	Global Population trend	WLPA Schedule
Accipitridae				
Black Kite	<i>Milvus migrans</i>	LC	S	
Egyptian Vulture	<i>Neophron percnopterus</i>	EN	D	IV
Shikra	<i>Accipiter badius</i>	LC	S	I
Anatidae				
Cotton Pygmy-goose	<i>Nettapus coromandelianus</i>	LC	S	IV
Knob-billed Duck	<i>Sarkidiornis melanotos</i>	LC	D	IV
Lesser Whistling duck	<i>Dendrocygna javanica</i>	LC	D	IV
Bucerotidae				
Indian gray Hornbill	<i>Ocyrceros birostris</i>	LC	S	I
Burhinidae				
Great Thick-knee	<i>Esacus recurvirostris</i>	NT	D	
Charadriidae				
Little ringed Plover	<i>Charadrius dubius</i>	LC	S	
Red-wattled Lapwing	<i>Vanellus indicus</i>	LC	U	I
River Lapwing	<i>Vanellus duvaucelii</i>	NT	D	I
Glareolidae				
Small Pratincole	<i>Glareola lactea</i>	LC	U	
Jacanidae				
Bronze-winged Jacana	<i>Metopidius indicus</i>	LC	U	IV
Laridae				
Black-bellied Tern	<i>Sterna acuticauda</i>	EN	D	I
River Tern	<i>Sterna aurantia</i>	VU	D	I
Ciconiidae				
Asian Openbill	<i>Anastomus oscitans</i>	LC	U	IV
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	NT	D	IV
Columbidae				
Rock Pigeon	<i>Columba livia</i>	LC	D	
Laughing Dove	<i>Streptopelia senegalensis</i>	LC	S	IV
Red-collared Dove	<i>Streptopelia tranquebarica</i>	LC	D	IV
Spotted Dove	<i>Streptopelia chinensis</i>	LC	I	IV
Yellow-footed Green Pigeon	<i>Treron phoenicopterus</i>	LC	I	IV
Alcedinidae				
Common Kingfisher	<i>Alcedo atthis</i>	LC	U	IV
Pied Kingfisher	<i>Ceryle rudis</i>	LC	U	IV
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	LC	I	IV
Coraciidae				
Indian Roller	<i>Coracias benghalensis</i>	LC	I	IV
Meropidae				
Blue-tailed Bee-eater	<i>Merops philippinus</i>	LC	S	
Green Bee-eater	<i>Merops orientalis</i>	LC	I	
Cuculidae				
Asian Koel	<i>Eudynamys scolopaceus</i>	LC	S	IV
Greater coucal	<i>Centropus sinensis</i>	LC	S	

Phasianidae				
Indian Peafowl	<i>Pavo cristatus</i>	LC	S	I
Rallidae				
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	LC	U	IV
Alaudidae				
Ashy-crowned Sparrow Lark	<i>Eremopterix griseus</i>	LC	S	IV
Rufous-tailed Lark	<i>Ammomanes phoenicura</i>	LC	S	IV
Cisticolidae				
Ashy Prinia	<i>Prinia socialis</i>	LC	S	
Common Tailorbird	<i>Orthotomus sutorius</i>	LC	S	
Plain Prinia	<i>Prinia inornata</i>	LC	S	
Corvidae				
Large-billed Crow	<i>Corvus macrorhynchos</i>	LC	S	
House Crow	<i>Corvus splendens</i>	LC	S	V
Dicruridae				
Black Drongo	<i>Dicrurus macrocercus</i>	LC	U	IV
Hirundinidae				
Wire-tailed Swallow	<i>Hirundo smithii</i>	LC	I	
Laniidae				
Great gray Shrike/Southern gray Shrike	<i>Lanius excubitor</i>	LC	S	
Long-tailed Shrike	<i>Lanius schach</i>	LC	U	
Leiothrichidae				
Jungle Babbler	<i>Argya striata</i>	LC	S	IV
Large gray Babbler	<i>Argya malcolmi</i>	LC	S	IV
Locustellidae				
Striated Grassbird	<i>Megalurus palustris</i>	LC	U	
Motacillidae				
Paddyfield Pipit	<i>Anthus rufulus</i>	LC	S	IV
White-browed Wagtail	<i>Motacilla maderaspatensis</i>	LC	S	
Muscicapidae				
Indian Robin	<i>Copsychus fulicatus</i>	LC	S	IV
Oriental magpie Robin	<i>Copsychus saularis</i>	LC	S	IV
Nectariniidae				
Purple Sunbird	<i>Cinnyris asiaticus</i>	LC	S	IV
Oriolidae				
Indian golden Oriole	<i>Oriolus kundoo</i>	LC	U	IV
Pycnonotidae				
Red-vented Bulbul	<i>Pycnonotus cafer</i>	LC	I	IV
Sturnidae				
Asian pied Starling	<i>Gracupica contra</i>	LC	I	IV
Brahminy Starling	<i>Sturnia pagodarum</i>	LC	U	IV
Chestnut-tailed Starling	<i>Sturnia malabarica</i>	LC	U	IV
Common Myna	<i>Acridotheres tristis</i>	LC	I	IV
Vangidae				
Bar-winged Flycatcher-shrike	<i>Hemipus picatus</i>	LC	D	IV

Ardeidae				
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	LC	D	IV
Cattle Egret	<i>Bubulcus ibis</i>	LC	I	IV
Indian pond Heron	<i>Ardeola grayii</i>	LC	U	IV
Intermediate Egret	<i>Ardea intermedia</i>	LC	D	IV
Little Egret	<i>Egretta garzetta</i>	LC	I	IV
Striated Heron	<i>Butorides striata</i>	LC	D	IV
Threskiornithidae				
Red-naped Ibis	<i>Pseudibis papillosa</i>	LC	D	IV
Megalaimidae				
Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	LC	I	IV
Podicipedidae				
Little Grebe	<i>Tachybaptus ruficollis</i>	LC	D	IV
Psittaculidae				
Rose-ringed Parakeet	<i>Psittacula krameri</i>	LC	I	IV
Strigidae				
Spotted Owlet	<i>Athene brama</i>	LC	S	IV
Phalacrocoracidae				
Little Cormorant	<i>Microcarbo niger</i>	LC	U	IV

Abbreviations. IUCN status- **EN**: Endangered, **VU**: Vulnerable, **NT**: Near Threatened, **LC**: Least Concern. Global population trend- **I**: Increasing, **S**: Stable, **D**: Decreasing, **U**: Unknown. **WLPA**: Wildlife Protection Act.



A: Black-necked Stork*, **B:** River Lapwing*, **C:** Red-naped Ibis, **D:** Bronzed-winged Jacana, **E:** Little Grebe, **F:** Lesser whistling duck
 *: Near Threatened



G: Little Cormorant, **H:** Indian pond Heron, **I:** Little-ringed Plover, **J:** Pied Kingfisher, **K:** White-browed Wagtail, **L:** Blue-tailed Bee-eater

Annexure- 3: List of mammal Species observed during the Survey

Family	Common Name	Scientific name	IUCN Status	WLPA Schedule	Mode of record
Herpestidae	India Grey Mongoose	<i>Herpestes edwardsii</i>	LC	II	Direct
Canidae	Golden Jackal	<i>Canis aureus</i>	LC	II	Direct
Suidae	Wild pig	<i>Sus scrofa</i>	LC	III	Indirect (Digging)

Abbreviations. IUCN status- **LC**: Least Concern. **WLPA**: Wildlife Protection Act.

Annexure- 4: List of Reptile Species observed during the Survey

Family	Common Name	Scientific name	IUCN Status	Population trend	WLPA Schedule
Trionychidae	Indian Softshell Turtle	<i>Nilssonia gangetica</i>	EN	D	I
Varanidae	Bengal monitor Lizard	<i>Varanus bengalensis</i>	NT	D	I
Crocodylidae	Mugger	<i>Crocodylus palustris</i>	VU	S	I
Gavialidae	Gharial	<i>Gavialis gangeticus</i>	CE	I	I
Natricidae	Chequered Keelback	<i>Fowlea piscator</i>	LC	S	II

Abbreviations. IUCN status- **CE:** Critically Endangered, **EN:** Endangered, **VU:** Vulnerable, **NT:** Near Threatened, **LC:** Least Concern. Global population trend- **I:** Increasing, **S:** Stable, **D:** Decreasing. **WLPA:** Wildlife Protection Act.

Annexure -5: Letter by Chief Conservator of Forests & Field Director, Sanjay Tiger Reserve to the Executive Engineer, Public Works Department, Bridge Construction Division dated 02.11.2020 communicating various compliance conditions along with their field implementation status.

कार्यालय, मुख्य वन संरक्षक एवं क्षेत्र संचालक, संजय टाइगर रिजर्व, सीधी (म०प्र०)
 शिवाजी नगर, नौदिया, जिला-सीधी, 486661, मध्यप्रदेश
 दूरभाष नंबर-9425768669
 E.mail. fdesajnp.sdh@mp.gov.in, ddsajnp.sdh@mp.gov.in.

Abdul Ansari,
9412662032. DD.

क्रमांक/मा०चि०/2020/ 6079 सीधी, दिनांक : 2 / 11 / 2020

प्रति,
 कार्यपालन यंत्री
 लो.नि.वि. सेतु निर्माण संभाग रीवा(म०प्र०)

विषय :- सोनघड़ियाल अभयारण्य के अंतर्गत बहरी-हनुमना राजमार्ग क्रमांक-52 एन्युटी /बीओटी योजना के अंतर्गत टू-लेन विथ पेड शोल्डर एवं पुल नवनिर्माण के संबंध में।

संदर्भ :- 1. माननीय सर्वोच्च न्यायालय का आदेश दिनांक 06.01.2014
 2. प्रधान मुख्य वनसंरक्षक(वन्यप्राणी) मध्यप्रदेश भोपाल का पृ.क्र./व.प्रा./मा.चि./607 दिनांक 29.01.2014, पत्र क्र./2331 दिनांक 21.04.2014 एवं पत्र पृ. 6365 दिनांक 17.10.2014
 3. अपर प्रधान मुख्य वनसंरक्षक (मू-प्रबंध) म.प्र. भोपाल का पत्र पृ.क्रमांक/1913 दिनांक 24.06.2020
 4. मुख्य वनसंरक्षक एवं क्षेत्र संचालक, सं.टा.रि. सीधी का पत्र क्रमांक/मा.चि./5250 दिनांक 22.10.2014, 3055 दिनांक 26.05.2017
 5. कार्यपालन यंत्री, लो.नि.वि. सेतु निर्माण संभाग रीवा(म०प्र०) का पत्र क्र./50 दिनांक 11.04.2017

विषयांतर्गत माननीय सर्वोच्च न्यायालय का आदेश दिनांक 06.01.2014, राष्ट्रीय वन्यप्राणी बोर्ड की बैठक दिनांक 20.03.2013, राज्य वन्यप्राणी बोर्ड की बैठक दिनांक 08.07.2014 व प्रधान मुख्य वनसंरक्षक(वन्यप्राणी) म.प्र. भोपाल के संदर्भित पत्रों में सोनघड़ियाल अभयारण्य के अंतर्गत बहरी-हनुमना राजमार्ग क्रमांक-52 एन्युटी /बीओटी योजना के अंतर्गत टू-लेन विथ पेड शोल्डर एवं पुल नवनिर्माण की सशर्त अनुमति जारी की गई, जिसका विवरण व पालन की स्थिति निम्नानुसार है :-

क्र.	शर्त	वास्तविक तथ्य
(i)	Approval under the Forest (Conservation) Act, 1980 for the forest land involved, if any, will be obtained and the NPV payable for use of forest land and the non-forest land falling in the Sanctuary area as per the rates prescribed by this Hon'ble Court will be deposited in the compensatory Afforestation Fund,	1. निर्धारित शर्त के परिपेक्ष्य में इस कार्यालय के पत्र क्रमांक/मा.चि./2456 दिनांक 19.05.2020 से अनुमति के संबंध में आवेदक संस्था से जानकारी/अभिलेख चाहा गया है, जिसके संदर्भ में कार्यपालन यंत्री लोक निर्माण विभाग सेतु निर्माण संभाग रीवा के पत्र क्रमांक/978 दिनांक 28.05.2020 के साथ संलग्न वनमण्डलाधिकारी, सीधी के पत्र क्रमांक/मा.चि./2540 दिनांक 23.05.2020 के साथ संलग्न पत्र क्रमांक/मा.चि./65 दिनांक 02.01.2014 की प्रति संलग्न की गई है, जिसमें बहरी से हनुमना राज्यमार्ग क्रमांक 52 वनमण्डल सीधी-रीवा की सीमा तक सर्वे ऑफ इंडिया के ट्रोपोशीट के आधार पर वर्ष 1980 के पूर्व से निर्मित पक्का मार्ग होने व वर्तमान उपलब्ध चौड़ाई 10 मीटर में प्रभावित वनभूमि में निम्नानुसार उन्नयन कार्य की सशर्त अनुमति जारी की गई है:-
		कक्ष क्र. मार्ग की लं. (कि.मी. में) पूर्व निर्मित मार्ग की वर्तमान में उपलब्ध चौ. मी में Row सहित
		P-932 0.270 10 मी.

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		P-912	0.125	--
		P-899	1.800	--
		Total-	2.195	
		<p>जारी अनुमति में उल्लेख है, कि मार्ग का शेष भाग राजस्व क्षेत्र है।</p> <p>2. गूगल मानचित्र में परीक्षण पर सोन नदी अमिलिया साइड 8.40 कि.मी. पर वनमण्डल का कक्ष क्रमांक 1593 तथा सोन नदी बहरी साइड 0.846 कि.मी. पर वनमण्डल का कक्ष क्रमांक 912 का आंशिक क्षेत्र प्रभावित है।</p> <p>3. अपर प्रधान मुख्य वनसंरक्षक (भू-प्रबंध) म.प्र. भोपाल से प्राप्त निर्देशानुसार आवेदक संस्था के पत्र क्रमांक/1261 दिनांक 24.06.2020 से प्रस्तावित पुल निर्माण स्थल का मानचित्र प्रेषित किया गया। प्रेषित मानचित्र के अनुसार पुल के अमिलिया साइड ग्राम जोकहा तथा बहरी साइड ग्राम डढ़िया की भूमि प्रभावित है।</p> <p>4. NPV की राशि रुपये 5.070 लाख कैम्पा मद में जमा किया जाना अपेक्षित है, जमा किये जाने हेतु बैंक डिपॉजिट से संबंधित चालान की प्रति संलग्न है।</p>		
(ii)	The conditions on which the project has been cleared by the standing committee of the National board for Wildlife including compliance with the conditions stipulated by the Chief Wildlife Warden will be complied with.	<p>अधिरूपित शर्त के संबंध में प्रधान मुख्य वनसंरक्षक (वन्यप्राणी) म0प्र0 भोपाल के पत्र पृ.क्रमांक/मा.चि./1595 दिनांक 12.03.2014 , क्रमांक/2331 दिनांक 21.04. 2014 एवं पत्र क्रमांक/6364 दिनांक 17.10.2014 द्वारा अधिरूपित शर्तों एवं मानीटरिंग प्रोटोकॉल तथा घड़ियाल एवं अन्य जलीय जीव प्रजनन स्थल जोगदह पर पुल निर्माण अवधि के दौरान प्रदूषण एवं अन्य विपरीत प्रभावों के संबंध सतत मॉनीटरिंग प्रोटोकॉल तैयार करने पर होने वाले व्यय का वहन आवेदक संस्थान द्वारा किये जाने हेतु आवेदक संस्था से वचन पत्र प्रस्तुत है।</p>		
(iii)	The conditions stipulated by the Chief wildlife Warden, Madhya Pradesh Forest Department will be complied with.	1.	अभयारण्य की सीमा में कोई श्रमिक कैम्प नहीं लगाये जायेंगे।	आवेदक संस्था द्वारा वचन पत्र प्रस्तुत है।
		2.	अभयारण्य की सीमा से कोई निर्माण सामग्री नहीं ली जायेगी।	आवेदक संस्था द्वारा वचन पत्र प्रस्तुत है।
		3.	निर्माण एजेन्सी द्वारा वन्यप्राणी (संरक्षण) अधिनियम 1972 की धाराओं का पालन किया जायेगा।	आवेदक संस्था द्वारा वचन पत्र प्रस्तुत है।
		4.	पुल निर्माण के दौरान इस बात की पर्याप्त सावधानी रखी जायेगी कि निर्माण संबंधी कचरा अभयारण्य में प्रवाहित न हों।	आवेदक संस्था द्वारा वचन पत्र प्रस्तुत है।
		5.	निर्माण एजेन्सी अभयारण्य की किसी भी भूमि का उपयोग आवागमन, निर्माण सामग्री परिवहन या निर्माण सामग्री को संग्रहित करने के लिए नहीं करेगी।	आवेदक संस्था द्वारा वचन पत्र प्रस्तुत है।
		6.	माननीय उच्चतम न्यायालय द्वारा आदेशित पुल निर्माण के दौरान जलीय जीवों पर विपरीत प्रभाव को कम करने हेतु वन्यजीव संस्थान, देहरादून द्वारा प्रस्तावित Mitigation Measures का पालन एवं खर्च वहन करना।	आवेदक संस्था द्वारा वचन पत्र प्रस्तुत है।
(iv)	While constructing the new bridge the user agency will ensure that no debris is dumped or allowed to flow in to the river to prevent adverse impact on the aquatic habitat and aquatic wildlife of the sanctuary; and .	<p>आवेदक संस्था द्वारा वचन पत्र प्रस्तुत है।</p>		

(v) 5% of the project cost for the portion falling within the sanctuary will be deposited in the compensatory Afforestation Fund for undertaking conservation and protectiona measures in the National park/ Wildlife Sanctuary.	आवेदक संस्था के पत्र पृ० क्रमांक/576 दिनांक 04.03.2014 से बहरी, हनुमना राजमार्ग क्रमांक 52 के उन्वयन कार्य सोन घड़ियाल मगर अभयारण्य में सोन नदी पर प्रस्तावित बृहद पुल निर्माण की अनुमति के संबंध में माननीय सर्वोच्च न्यायालय के आदेश दिनांक 06.01.2014 के शर्त क्र० 5 के पालन में अभयारण्य क्षेत्र के अंतर्गत निर्माण कार्य की लागत 9.5 करोड़ की 5 प्रतिशत राशि 47.5 लाख जमा किया गया है।
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वन्यजीव संस्थान, देहरादून द्वारा निर्माण स्थल पर जलीय जीवों पर विपरीत प्रभाव को कम करने हेतु Mitigation Measures तैयार किया जाना प्रस्तावित है, जिसके लिए वन्यजीव संस्थान, देहरादून से पत्राचार किया जा चुका है, जिसका पालन करना अनिवार्य रहेगा, निर्माण कार्य सूर्योदय से सूर्यास्त के मध्य किया जायेगा। शर्त क्रमांक 1(4) के अनुसार शेष राशि कैम्पा मद में जमा करने तथा शर्त क्रमांक 3(6) अनुसार Mitigation Measures प्राप्त करने के उपरांत ही कार्य प्रारंभ करें, घड़ियाल एवं अन्य जलीय जीवों तथा प्रजनन स्थलों पर किसी प्रकार का विपरीत प्रभाव अथवा क्षति पाये जाने पर निर्माण कार्य तत्काल बंद किया किया जाकर नियमानुसार कार्यवाही की जावेगी।

(डॉ. ए. अंसारी)
मा.व.से.

संयुक्त संचालक,
संजय टाईगर रिजर्व, सीधी


पृ०क्रमांक/मा०चि०/2020 6020
प्रतिलिपि :-

सीधी, दिनांक : 2/7/2020

1. प्रधान मुख्य वनसंरक्षक(वन्यप्राणी) मध्यप्रदेश भोपाल की ओर उपरोक्त संदर्भित पत्रों के तारतम्य में सूचनार्थ सम्प्रेषित।
2. अपर प्रधान मुख्य वनसंरक्षक (भू-प्रबंध) म.प्र. भोपाल की ओर उपरोक्त संदर्भित पत्र के तारतम्य में सूचनार्थ सम्प्रेषित।
3. निदेशक, वन्यजीव संस्थान, देहरादून की ओर इस कार्यालय के पत्र क्रमांक/मा.चि./4935 दिनांक 16.09.2020 के संदर्भ में सूचनार्थ सम्प्रेषित।
4. मुख्य वनसंरक्षक एवं क्षेत्र संचालक, संजय टाईगर रिजर्व, सीधी की ओर सूचनार्थ सम्प्रेषित।
5. अधीक्षक/परिक्षेत्राधिकारी, सोनघड़ियाल अभयारण्य, सीधी की ओर अग्रेषित। आप निर्माण स्थल का समय-समय पर निरीक्षण कर अधिरोपित शर्तों का पूर्णतः पालन कराना सुनिश्चित करें।

संयुक्त संचालक,
संजय टाईगर रिजर्व, सीधी

Annexure -6: Letter sent from Joint Director Sanjay Tiger Reserve to Wildlife Institute of India to send a team of experts to propose mitigation measures


OFFICE OF THE CCF & FIELD DIRECTOR, SANJAY TIGER RESERVE
Near- Shivaji Nagar, Naudhiya, Distt.- Sidhi, Pincode- 486661, Madhya Pradesh
Ph. No.-07822-252409, Fax No.-07822-252409, 250121, Mobile- 9424793668, 9424793669
E-mail- fdsajnp.sdh@mp.gov.in, website- www.sanjaytigerreserve.in

W.D.M./2020/ 11935 Sidhi, Date : 16/9/2020

The Director,
Wildlife Institute of India
Chandrabani, Dehradun
UK-248002
Email: wii@wii.gov.in

Subject: Study and suggestion of Mitigation and monitoring measures to be proposed for construction of High Level Bridge on river Son under Son Ghariyal sanctuary Sidhi (M.P.)

Ref: 1-Telephonic Discussion with CWLW, M.P. Bhopal.
2-Minutes of 28th meeting of SG of NBWL held on 20th March 2013
3- Hon'ble Supreme Court ordered Date 06/01/2014, from IA Nos 3709-3711

--00--

Dear Sir,

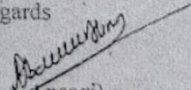
It is hereby informed that NBWL recommended the Construction of high level Bridge S1-S2 on Son River falling under Son ghariyal wildlife sanctuary Sidhi. Hon'ble Supreme Court grant permission for the same conditionally.

One of the conditions imposed by Hon'ble Supreme Court ordered states "While constructing the new bridge the user agency will ensure that no debris is dumped or allowed to flow in to the river to prevent adverse impact on the aquatic habitat and aquatic fauna of the sanctuary.

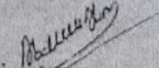
In this regards I request you to kindly send a team of experts to propose appropriate mitigation measures, so that the safety of the aquatic fauna is ensured.

Enclosed - As above.

Thanking you

Regards

(Dr. A. Ansari)
Joint Director
Sanjay Tiger Reserve, Sidhi
Sidhi, Date : 16/9/2020

End.No./D.M./2020/ 11936
Copy To: - 1. PCCF (WL) & CWLW, Bhopal, M.P. for kind information and necessary action.
2. Dr. Ruchi Badola, Scientist -G, Wildlife Institute of India Dehradun for kind information.
3. Field Director and chief conservator of forest STR for its kind information.


Joint Director
Sanjay Tiger Reserve, Sidhi

Annexure -7: Minutes of 28th meeting of SC of NBWL held on 20th March 2013

Minutes of 28th meeting of SC of NBWL held on 20th March 2013

The Secretary, PWD informed that the structure would fall within the areas of both Madhya Pradesh and Rajasthan as the Chambal river separates these two states.

The Chief Wildlife Warden, Rajasthan informed that he was not aware of such a proposal being referred to them for consideration.

The Committee, after discussion decided that the user agency may forward the proposal to the Chief Wildlife Warden, Rajasthan, who shall seek the recommendations of the Rajasthan State Board for Wildlife. Thereafter, a consolidated proposal shall be submitted to the Standing Committee of NBWL for its consideration.

4.2 (30) Proposal for construction of New High Level Bridge and approach road across Sone river in km.6+600 to 10+100 near Jogdha on Bahari-Hanumana Road-SH-52 passing through Son Gharial Sanctuary, Madhya Pradesh.

The Member Secretary briefed the Committee on the proposal. The Secretary, PWD made a brief presentation highlighting the salient features of the project.

The Committee, after discussion decided to recommend the proposal subject to the condition that the Chief Wildlife Warden shall ensure that the construction of the bridge does not affect the nesting sites of Gharials, crocodiles and turtles and such other conditions, as may be stipulated by the Chief Wildlife Warden.

4.2 (31) Proposal for construction of Kanchanpur Railway Station and laying of two additional lines at the station in Katni-Singroli Section at Km.1218.170 passing through Sanjay Dubri Wildlife Sanctuary, Madhya Pradesh.

The Member-Secretary informed the Committee that the proposal was for construction of Kanchanpur Railway Station and laying of two additional lines at the station in Katni-Singroli Section at Km.1218.170 passing through Sanjay Dubri Wildlife Sanctuary, Madhya Pradesh.

Ms. Prerna Bindra as well as Kishor Rithe were of the opinion that construction of a Railway Station within the Tiger Reserve would have serious impact on the tiger movement.

After discussion, the committee decided that NTCA would undertake a site inspection and submit a report to the Standing Committee of NBWL for its consideration.

4.2 (32) Proposal seeking permission for widening of existing 2-lane NH-3 section passing through Madhav National Park which is part of four laning project from Gwalior to Shivpuri in district Shivpuri, Madhya Pradesh.

The applications are disposed of in the above terms.


IA Nos. 3709-3711

These are applications regarding permission for construction of new High Level Bridge and approach road across Sone river near Jogdha Behari Hanumana Road (SH-52), connecting National Highway No. 7 (Rewa to Mirzapur) and National Highway No. 75-# (Rewa-Sidhi-Singrauli) falling in Sone Ghariyal Wildlife Sanctuary. As recommended by the Central Empowered Committee, permission is granted subject to the following conditions:-

- (i) approval under the Forest (Conservation) Act, 1980 for the forest land involved, if any, will be obtained and the NPV payable for use of forest land and the non-forest land falling in the Sanctuary area as per the rates prescribed by this Hon'ble Court will be deposited in the Compensatory Afforestation Fund;
- (ii) the conditions on which the project has been cleared by the Standing Committee of the National Board for Wildlife including compliance with the conditions stipulated by the Chief Wildlife Warden will be complied with.
- (iii) the conditions stipulated by the Chief Wildlife Warden, Madhya Pradesh Forest Department will be complied with.
- (iv) while constructing the new bridge the user agency will ensure that no debris is dumped or allowed to flow in to the river to prevent adverse impact on the aquatic habitat and aquatic wildlife of the sanctuary; and
- (v) 5% of the project cost for the portion falling within the Sanctuary will be deposited in the Compensatory Afforestation Fund for undertaking conservation and protection measures in the National park/Wildlife Sanctuary."

Annexure -8: The official communication letter from Wildlife Institute of India to Joint Director, Sanjay Tiger Reserve

14

 भारतीय वन्यजीव संस्थान
Wildlife Institute of India

WII/SH-52 Son Gharial Sanctuary/2020 18 November 2020

To

The Joint Director
Sanjay Tiger Reserve
Near Shivaji Nagar, Naudhiya,
Dist – Sidhi, 486661
Madhya Pradesh

Sub: Construction of New High Level Bridge and approach road across Son River in Km. 6+600 to 10+100 near Jogdha on Bahari-Hanumana Road- SH-52 passing through Son Gharial Sanctuary, Madhya Pradesh

Ref: 1. Your letter No. D.M/2020/4935 dated 16.09.2020
2. Your letter No. MC/2020/6019 dated 02.11.2020
3. Hon'ble Supreme Court Order dated 06.01.2014 from IA Nos 3709-3711
4. Minutes of the 28th meeting of SG of NBWL held on 20.03.2013

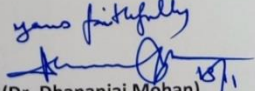
Sir,

In reference to the above cited subject and the directions of the Hon'ble Supreme Court and recommendations of the SC of NBWL, the following directions have been given:

1. The Hon'ble Supreme Court vide its above order has imposed a condition that "while constructing the new bridge the user agency will ensure that no debris is dumped or allowed to flow in to the river to prevent adverse impact on the aquatic habitat and aquatic wildlife of the sanctuary and the conditions on which the project has been cleared by the standing committee of the National Board for Wildlife including compliance with the conditions stipulated by the Chief Wildlife Warden with be complied with".
2. The NBWL has recommended the proposal "subject to the condition that the CWLW shall ensure that the construction of the bridge does not affect the nesting sites of Gharials, Crocodiles and turtles and such other conditions, as may be stipulated by the CWLW".

From the above directions it is clear that, in addition to the conditions above, CWLW, MP may stipulate additional conditions on the proposal. It appears from your letter that WII's expert opinion may be required for finalizing the condition to be stipulated by CWLW. WII will be willing to take up this work which may require field visits and a brief study which would entail financial expenditure as well. In this regard we request you to send a formal letter from CWLW, M.P for the above, so that a proposal may be sent from our end to take up this work.

~~Encl. As above~~

yours faithfully

(Dr. Dhananjai Mohan)
Director

Copy to: 1. PCCF (WL) & CWLW, Govt. of Madhya Pradesh, BDA Building 3rd Floor M.P Nagar Zone-1 Hoshangabad Road, Bhopal -462011, Madhya Pradesh. Email: pccfwl@mp.gov.in
2. Field Director and Chief Conservator of Forests, Sanjay Tiger Reserve, Near Shivaji Nagar, Naudhiya, Dist – Sidhi, 486661, Madhya Pradesh. Email: fdsajnp.sdh@mp.gov.in

पत्रपेटी सं. 18, चन्द्रबनी, देहरादून-248 001, उत्तराखण्ड, भारत
Post Box No. 18, Chandrabani, Dehradun - 248 001, Uttarakhand, INDIA
ई.पी.ए.बी.एक्स : +91-135-2640100, 2640114, 2640115, फैक्स : 0135-2640117
EPABX : +91-135-2640100, 2640114, 2640115, फैक्स : 0135-2640117
ई-मेल/E-mail : wii@wii.gov.in, वेब/Website : www.wii.gov.in

Annexure -9: The official communication from Principal Chief Conservator of Forests, Bhopal to Wildlife Institute of India

15

कार्यालय प्रधान मुख्य वन संरक्षक (वन्यप्राणी), मध्य प्रदेश
प्रगति भवन, भोपाल विकास प्राधिकरण, तृतीय तल, एम.पी.नगर, भोपाल
दूरभाष : 0755-2674318, 2674337, फ़ैक्स : 0755-2766315
E-mail : pccfwl@mp.gov.in

क्रमांक/व.प्रा./मा.चि./ 7167 भोपाल, दिनांक 27/11/2020
प्रति,

संचालक,
भारतीय वन्यजीव संस्थान,
पोस्ट बाक्स न. 18, चन्द्रबानी, देहरादून-248001
उत्तरांचल

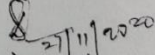
विषय :- **Construction of New High Level Bridge and approach road across Son River in Km. 6+600to 10+100 near Jogdh on Bahari-Hanumana Road SH-12 Passing through Son Gharial Sanctuary, Madhya Pradesh.**

संदर्भ :- आपका पृष्ठांकन क्रमांक/WII/SH-52 Son Gharial Sanctuary/2020 दिनांक 18.11.2020
---00---

उपरोक्त विषयांतर्गत क्षेत्र संचालक, संजय टाइगर रिजर्व के पत्र क्रमांक/DM/2020/4935 दिनांक 16.09.2020 से सोन घड़ियाल अभयारण्य के अंतर्गत सोन नदी पर लोक निर्माण विभाग सेतु निर्माण संभाग रीवा के बहरी-हनुमना राजमार्ग क्रमांक-52 पर उच्च स्तरीय पुल निर्माण करने संबंधी प्रकरण में नदी के जल प्रवाह, जलीय जीवों के प्रजनन स्थल में पुल निर्माण अवधि के दौरान प्रदूषण एवं अन्य विपरीत प्रभावों के संबंध में मेटिगेशन मेजर्स के निर्धारण हेतु आपको लेख किया गया था।

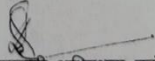
उक्त पत्र के तारतम्य में आपके द्वारा संदर्भित पत्र से यह लेख किया गया है कि उक्त कार्य हेतु भारतीय वन्यजीव संस्थान की एक एक्सपर्ट कमेटी को स्थल निरीक्षण हेतु भेजा जाना होगा, जिसमें व्यय भी होगा। उक्त संबंध में मुख्य वन्यप्राणी अभिरक्षक, मध्यप्रदेश से औपचारिक पत्र प्रेषित करने हेतु क्षेत्र संचालक, संजय टाइगर रिजर्व, सीधी को लेख कर पत्र इस कार्यालय को पृष्ठांकित किया गया है। सोन घड़ियाल अभयारण्य के अंतर्गत नदी के जल प्रवाह, जलीय जीवों के प्रजनन स्थल में पुल निर्माण अवधि के दौरान प्रदूषण एवं अन्य विपरीत प्रभावों के संबंध में मेटिगेशन मेजर्स के निर्धारण हेतु अध्ययन किया जाना आवश्यक है। इस कार्य में होने वाला व्यय आवेदक संस्था/विभाग द्वारा विकलनीय होगा।

अतः कृपया उपरोक्त कार्य को प्राथमिकता देते हुए एक्सपर्ट कमेटी द्वारा स्थल निरीक्षण कराकर रिपोर्ट क्षेत्र संचालक, संजय टाइगर रिजर्व, सीधी एवं इस कार्यालय को शीघ्रातिशीघ्र प्रेषित करने का अनुरोध है।


(आलोक कुमार)
मुख्य वन्यप्राणी अभिरक्षक एवं
प्रधान मुख्य वन संरक्षक (व.प्रा.), म.प्र.
भोपाल, दिनांक 27/11/2020

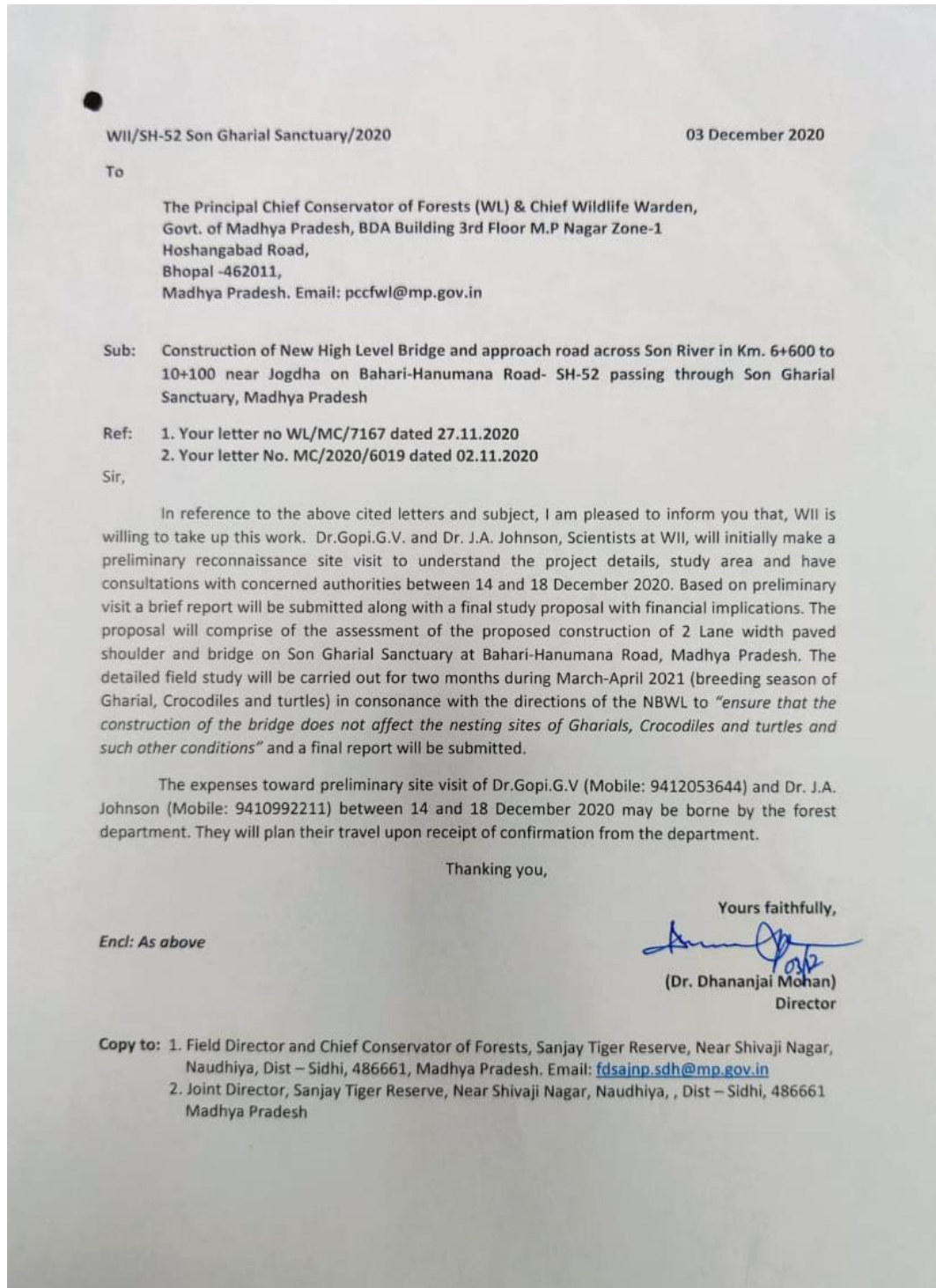
पू0 क्रमांक/व.प्रा./मा.चि./ 7168
प्रतिलिपि :-

1. क्षेत्र संचालक, संजय टाइगर रिजर्व, सीधी की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।
2. कार्यपालन यंत्री, लोक निर्माण विभाग सेतु निर्माण संभाग, रीवा, म.प्र. की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।


मुख्य वन्यप्राणी अभिरक्षक एवं
प्रधान मुख्य वन संरक्षक (व.प्रा.), म.प्र.

E:\E- Drive>Data-14-08-2015\DM SECTOR\DM Letter-2020 Page 668 11/26/2020

Annexure -10: The official communication letter from Wildlife Institute of India to Principal Chief Conservator of Forests & Chief Wildlife Warden regarding field visit by WII team to conduct preliminary reconnaissance site visit



Annexure – 11: The official communication letter from Wildlife Institute of India to Principal Chief Conservator of Forests & Chief Wildlife Warden regarding concept note and financial outlay to stipulate mitigation measures



WII/SH-52 Son Gharial Sanctuary/2020

31 December 2020

To

The Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden,
Govt. of Madhya Pradesh, BDA Building 3rd Floor M.P Nagar Zone-1
Hoshangabad Road,
Bhopal -462011,
Madhya Pradesh. Email: pccfwl@mp.gov.in

Sub: Construction of New High Level Bridge and approach road across Son River in Km. 6+600 to 10+100 near Jogdha on Bahari-Hanumana Road- SH-52 passing through Son Gharial Sanctuary, Madhya Pradesh

Ref: 1. Your letter no WL/MC/7167 dated 27.11.2020
2. Your letter No. MC/2020/6019 dated 02.11.2020
3. Our letter No. WII/SH-52 Son Gharial Sanctuary/2020 dated 03.12.2020

Sir,

In reference to the above cited subject, two of WII's senior scientists visited the field site for a reconnaissance survey to understand the project details, study area and had consultations with concerned authorities between 14 and 18 December 2020. Based on the site visit a concept note is prepared along with financial outlay. Kindly find attached herewith the "Concept note and financial outlay to stipulate mitigation measures for proposed high-level bridge on Bahri-Hanumana road state highway-52 near Jogdah". The 3 month proposed study from March 2021 to May 2021 will comprise of a detailed assessment and will provide expert opinion for finalising the conditions to be stipulated by CWLW. The proposed time period (March-May) coincides with the breeding season and any delay in approval of the project can push the work to next year (2022). The funds may be released to WII at the earliest so as to complete the study on time and submit the required report.

Thanking you,

Yours faithfully,

Encl: As above


(Dr. Dhananjai Mohan)
Director

- Copy to:** 1. Field Director and Chief Conservator of Forests, Sanjay Tiger Reserve, Near Shivaji Nagar, Naudhiya, Dist – Sidhi, 486661, Madhya Pradesh. Email: fdsajnp.sdh@mp.gov.in
2. Joint Director, Sanjay Tiger Reserve, Near Shivaji Nagar, Naudhiya, Dist – Sidhi, 486661, Madhya Pradesh

पत्रपेटी सं. 18, चन्द्रबनी, देहरादून-248 001, उत्तराखण्ड, भारत
Post Box No. 18, Chandrabani, Dehradun - 248 001, Uttarakhand, INDIA
ई पी ए सी एक्स : +91-135-2640100, 2640114, 2640115, फैक्स : 0135-2640117
EPABX : +91-135-2640100, 2640114, 2640115, फैक्स : 0135-2640117
ई-मेल/E-mail : wii@wii.gov.in, वेब/Website : www.wii.gov.in

Annexure -12: The official communication from Wildlife Warden, Sanjay Tiger Reserve Sidhi to Wildlife Institute of India regarding approval of the proposal

कार्यालय, मुख्य वन संरक्षक एवं क्षेत्र संचालक, संजय टाईगर रिजर्व, सीधी (म०प्र०)
 शिवाजी नगर, नौद्विया, जिला-सीधी, 486661, मध्यप्रदेश
 दूरभाष नंबर-9425768669
 E.mail. fdsajnp.sdh@mp.gov.in, ddsajnp.sdh@mp.gov.in

क्रमांक/गा०वि०/2022/ 163 सीधी, दिनांक : 10 / 01 / 2022
 प्रति,
 संचालक,
 भारतीय वन्यजीव संस्थान, देहरादून
 पो. बाक्स नं. 18, चन्द्रबानी, देहरादून-248001 उत्तराखण्ड
 ई-मेल :- wli@wli.gov.in

विषय :- Construction of New High Level Bridge and approach road across Son River in Km. 6+600 near Jogdah on Bahri-Hanumana Road SH-12 Passing through Son Gharial Sanctuary, Madhya Pradesh.

संदर्भ :- 1. प्रधान मुख्य वन संरक्षक (वन्यप्राणी) मध्यप्रदेश, भोपाल का पत्र पृ.क्रमांक/व.प्रा./मा.वि./7168 दिनांक 27.11.2020 एवं 225 दिनांक 18.01.2021 (इस कार्यालय को संबोधित एवं संचालक, भारतीय वन्यजीव संस्थान को पृष्ठांकित।)
 2. वन्यजीव संस्था, देहरादून का पत्र दिनांक 31.12.2020 (प्र.मु.व.सं. वन्यप्राणी, भोपाल को संबोधित एवं इस कार्यालय को पृष्ठांकित)
 3. इस कार्यालय का पत्र क्रमांक/मा.वि./2021/7168 दिनांक 28.10.2021 (कार्यपालन यंत्री लो.नि. वि. सेतु निर्माण संभाग रीवा म.प्र. को संबोधित एवं संचालक भारतीय वन्यजीव संस्थान, देहरादून तथा प्र.मु.व.सं. वन्यप्राणी को पृष्ठांकित।)
 4. कार्यपालन यंत्री लो.नि.वि. सेतु संभाग रीवा (म०प्र०) का पत्र क्रमांक/872/तक./2021-22 दिनांक 02.12.2021 (इस कार्यालय को संबोधित।)



विषयांतर्गत प्रधान मुख्य वन संरक्षक (वन्यप्राणी) मध्यप्रदेश, भोपाल के संदर्भित पत्र दिनांक 27.11.2020 जो आपको संबोधित है, तथा इस कार्यालय को पृष्ठांकित किया गया है, से सोन घड़ियाल अभयारण्य के अंतर्गत सोन नदी पर लोक निर्माण विभाग सेतु निर्माण संभाग रीवा के क्षेत्रांतर्गत बहरी-हनुमना राजमार्ग क्रमांक-52 पर उच्च स्तरीय पुल निर्माण करने संबंधी प्रकरण में नदी के जल प्रभाव, जलीय जीवों के प्रजनन स्थल में पुल निर्माण अवधि के दौरान प्रदूषण एवं अन्य विपरीत प्रभावों के संबंध में मेटिगेशन मेजर्स के निर्धारण हेतु आपको लेख किया गया था।


पत्र के तारतम्य में आपके संदर्भित पत्र दिनांक 31.12.2020, जो प्रधान मुख्य वन संरक्षक (वन्यप्राणी) भोपाल को संबोधित एवं इस कार्यालय को पृष्ठांकित किया गया है, से बहरी-हनुमना मार्ग पर जोगदह पुल निर्माण कार्य के लिये मीटिगेशन मेजर्स के निर्धारण हेतु भारतीय वन्यजीव संस्थान, देहरादून की एक्सपर्ट कमेटी को स्थल का निरीक्षण हेतु जाना होगा, जिसमें व्यय भी होगा। अभयारण्य के अंतर्गत नदी के जल प्रवाह, जलीय जीवों के प्रजनन स्थल में पुल निर्माण अवधि के दौरान प्रदूषण एवं अन्य विपरीत प्रभावों के संबंध में मेटिगेशन मेजर्स के निर्धारण हेतु अध्ययन कार्य में होने वाला व्यय राशि वन्यजीव संस्थान देहरादून को यथाशीघ्र उपलब्ध कराने हेतु लेख किया गया था।

सोन घड़ियाल अभयारण्य के अंतर्गत नदी के जल प्रवाह, जलीय जीवों के प्रजनन स्थल में पुल निर्माण अवधि के दौरान प्रदूषण एवं अन्य विपरीत प्रभावों के संबंध में मेटिगेशन मेजर्स के निर्धारण हेतु भारतीय वन्यजीव संस्थान, देहरादून का दल दिनांक 14.12.2020 से 18.12.2020 तक पुल निर्माण स्थल, जोगदहा का निरीक्षण किया गया, जिसका भुगतान दल के सदस्यों को किया गया है। आपके संदर्भित पत्र दिनांक 31.12.2020

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 DIARY NO 4520
 DATE 25/1/22
 Dr. Gupta / Dr. Johnson
 24/1

Annexure -13: The official communication letter from Wildlife Institute of India to Field Director Sanjay Tiger Reserve regarding the field visit for ecological assessment and recommending mitigation measures

  **भारतीय वन्यजीव संस्थान**
Wildlife Institute of India
(An Autonomous Institute under Ministry of Environment, Forest & Climate Change, Govt. of India)
पत्रपेटी नं./Post Box No. 18, चन्द्रबनी, देहरादून/Chandrabani, Dehradun - 248001, उत्तराखण्ड, भारत/ Uttarakhand, INDIA

 75
Azadi Ka
Amrit Mahotsav

June 10, 2022

To
The Field Director and Chief Conservator of Forests,
Sanjay Tiger Reserve, Near Shivaji Nagar,
Naudhiya, Dist – Sidhi, 486661.
Madhya Pradesh.
Email: fdsainp.sdh@mp.gov.in/ddsainp.sdh@mp.gov.in

Sub: Construction of New High Level Bridge and approach road across Son River in km. 6+600 to 10+100 near Jogdha on Bahari-Hanumana Road- SH-52 passing through Son Gharial Sanctuary, Madhya Pradesh
Ref: Your letter no. मा. वि. 2022/163 dated 10.01.2022

Sir,

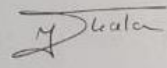
The WII has received Rs. 9,22,875.00 (Nine Lakh Twenty-Two Thousand Eight Hundred and Seventy-Five Only) on 25.05.2022 for stipulating mitigation measures for proposed high level bridge on Bahri-Hanumana road state highway -52 near Jogdha. I am pleased to inform you that, the WII team will be immediately initiating the site inspection and field work from 3rd week of June onwards. The WII team encompassing Mr. Frank SJD, Mr. Sumit Arya- Senior Researchers of EIA Cell, WII and Dr. G.V. Gopi, Nodal officer, EIA Cell and Dr. J.A. Johnson, Scientist - E will be conducting this assessment.

You are requested to facilitate their visit, providing accommodation in nearest Forest rest house and access to departmental records pertaining to maps, data on wildlife census etc. The research team will be contacting you and meet you in person and discuss about the work shortly.

The contact details of the WII field team are given below:

S.No	Name	Mobile
1.	Mr. Frank SJD	8870560746
2.	Mr. Sumit Kumar Arya	8057093733

With warm regards,


Dr. Yadvendradev Jhala
Dean, FWS

Copy for information to:

1. The Principal Chief Conservator of Forests (WL) & Chief Wildlife Warden, Govt. of Madhya Pradesh, BDA Building 3rd Floor M.P Nagar Zone-1, Hoshangabad Road, Bhopal-462011. Madhya Pradesh. Email: pccfwl@mp.gov.in
2. PS to DWII

फ़ोन/पी.एफ़./PABX : +91-135-2640114, 2640115, 2646100; फ़ैक्स/Fax : 0135-2640117 | ई-मेल/Email: wii@wil.gov.in वेब/Website www.wil.gov.in | ट्विटर/Twitter: @wiiofficial1



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

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