



भारतीय वन्यजीव संस्थान  
Wildlife Institute of India  
**SPEED POST**

No. WII/RTI/CPIO/2018-19 (Qtr-III)/43

Dated 05.10.2018

To,

Shri R.Sasi Kumaran Nair,  
43, Jupiter Apartments,  
D-Block, Vikaspuri,  
New Delhi

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

**Ref: RTI Application of Reg. No.MOENF/R/2018/810 dated 14.09.2018 - reg.**

Sir,

Please refer to your **RTI Request** on the above cited subject and reference under RTI Act, 2005. In this context, the point-wise replies to your queries are given below –

Sl. No.	Queries	Replies
4(ii)	Copy of presentation submitted by three member committee of R.D.Kamboj, D.P. Bankhwal and Gopi G.V. in March 2018	Information is not available in WII record.
4(iii)	Copy of presentation submitted by Wildlife Institute of India in NBWL Standing Committee meeting held on 13.06.2018	Information is available in Annexure-I
4(v)	Copy of presentation submitted by Wildlife Institute of India in NBWL Standing Committee meeting held on 07.09.2018	Information is available in Annexure-II

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,

( Dr. Anju Baroth )  
CPIO & NO, RTI

Encl: as above.

**Copy for information to – CPIO (WL), Government of India, Ministry of Environment, Forests and Climate Change, (WL Division), 6<sup>th</sup> Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110 003.**

*8/10/2018*  
*5/10/2018*

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Presentation on  
4/9/18

10/4/2018

Annexure - II

## Rapid Ecological Assessment of Impacts of Lower Demwe Hydro-Electric Project on Wildlife Values



Report submitted to the National Board of  
Wildlife Standing Committee (NBWL-SC)  
August 2018

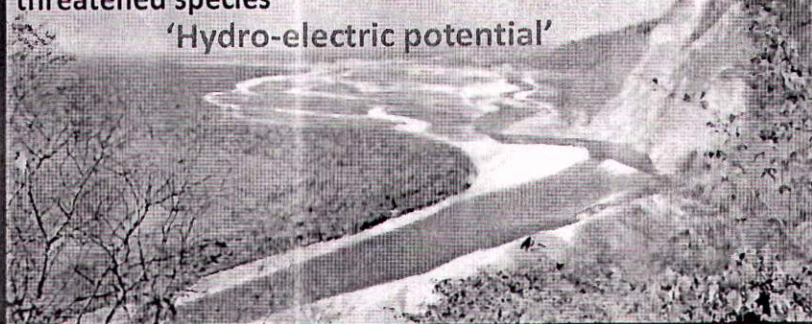


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### River Lohit

- One of the major tributaries of Brahmaputra
- Meets floodplains from mountains at Prashuram Kund
- Riverine System & Chaporis of Lohit River- Important for threatened species
- 'Hydro-electric potential'



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*[Signature]*  
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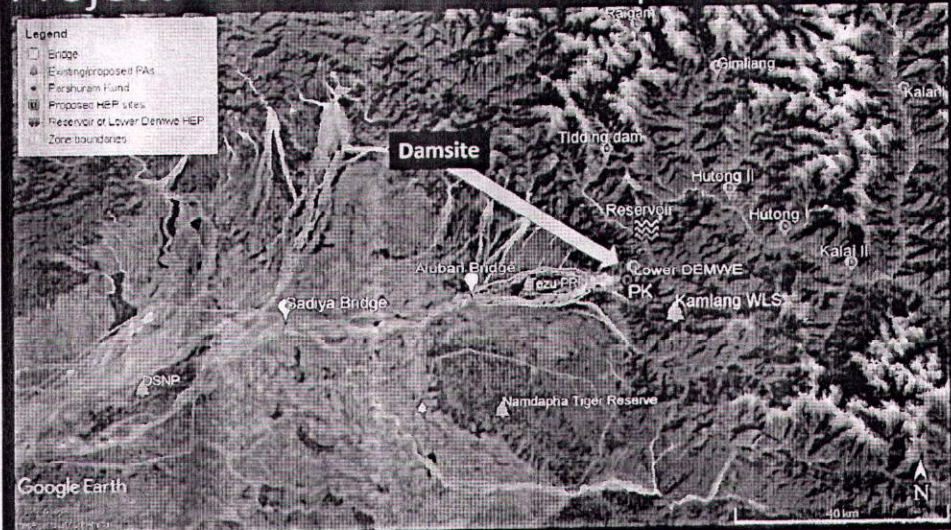


## Project Background

- As per the documentation Demwe Lower HE Project is proposed to be a 1750 MW *run-of-the river* project on Lohit River in Lohit district of Arunachal Pradesh located near to Parashsuram Kund
- To build a concrete gravity dam of 163.12m height above the deepest foundation level (124m height above the riverbed level) with full reservoir level at an elevation of 424.8m above sea level
- Joint venture between the Government of Arunachal Pradesh (26% Stake in the project) and /S Athena Demwe Power Ltd (ADPL)

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## Project Location and its Impact Zone



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## Chronology of Events pertaining to clearance

- The Expert Appraisal Committee (EAC) of MoEFCC recommended the environmental clearance (EC) for lower Demwe HE project which was granted on 12 February 2010 by the MoEFCC, Govt. of India.
- EC was challenged before the Hon'ble Principal Bench of NGT, New Delhi, vide Appeal No.8 of 2011. Hon'ble NGT upheld the environmental clearance granted to the project, vide its order dated 13 January 2015.
- Stage-I and Stage-II forest clearances accorded by the MoEFCC in 2012 and 2013 were challenged in the Hon'ble Principal Bench of NGT, New Delhi as Appeal No.92 of 2013.
- NGT instructed that NBWL-SC shall reconsider the issue and pass appropriate orders within a six months till then both Stage I and Stage II clearances stands cancelled.
- In 48<sup>th</sup> meeting of the NBWL-SC dated 27 March 2018, site inspection committee recommended a **comprehensive peer-reviewed study on hydrology and ecology of three seasons** by a reputed and neutral scientific / technical organization(s) before according clearance.
- Standing Committee recommended that the WII, Dehradun should carry out a rapid ecological study and submit the report to the Ministry in three months. Consequently, the Standing Committee decided to defer the clearance proposal.

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## Objectives of Rapid Assessment by WII

- Assessment of wildlife with special reference to Ganges River Dolphin (*Platanista gangetica gangetica*) and its ecosystem in the downstream of the dam site.
- Assessment of chapories (river islands) of the river Lohit for critically endangered bird Bengal Florican (*Houbaropsis bengalensis*) and other grassland obligate species.
- Assessment of forest areas for biodiversity and habitat corridors for large carnivores and herbivores.

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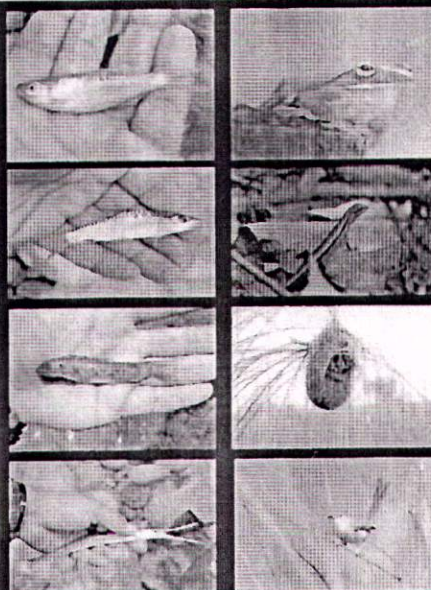
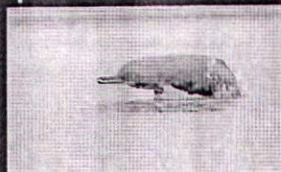
## Study area covered by WII team



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### Results

- A total of 44 sites (chaporis and river bank) were surveyed
- 9 species of Fishes
- 10 species of Reptiles
- 151 species of birds
- 24 species of mammals



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## Threatened Species Recorded

NT: near threatened, Vu: vulnerable, En: endangered, CEn: critically endangered

Sl. No.	Species Name	IUCN Status	WPA Schedule
1.	Bengal florican ( <i>Houbaropsis bengalensis</i> )	CEn	I
2.	Ganges River Dolphin ( <i>Platanista gangetica gangetica</i> )	En	I
3.	White-backed vulture ( <i>Gyps bengalensis</i> )	CEn	I
4.	Black-breasted Parrotbill ( <i>Paradoxornis flavirostris</i> )	Vu	IV
5.	Asian Elephant ( <i>Elephas maximus</i> )	En	I
6.	Assam Roofed Turtle ( <i>Pangshura sylhetensis</i> )	En	I
7.	Hoolock Gibbon ( <i>Hoolock hoolock</i> )	En	I
8.	Himalayan Griffon ( <i>Gyps himalayensis</i> )	NT	I
9.	Wild Swamp Buffalo ( <i>Bubalus arnee</i> )	CEn	I

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### Locations of signs of important species

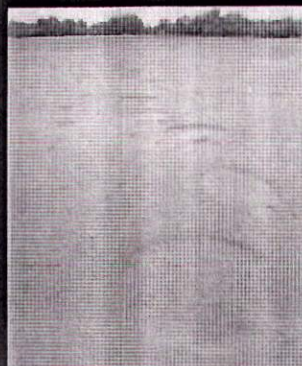


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## Movement Corridor

- The river system of Brahmaputra and Lohit is a potential corridor for most large mammals including tigers joining the forests of Arunachal Pradesh with Kaziranga Tiger Reserve, Assam.
- The construction of dam though is not likely to become a barrier provided .....
- The associated linear infrastructure development should have green norms. That is wildlife passage ways to be identified and build before traffic for construction commences.
- The impoundment structure should have all modern facilities for migration of aquatic fauna upstream, eg. Appropriate fish ladders etc.



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## Construction of dam ....

- Can be permitted since/if :
  - 1) The inundation area does not form any unique habitat that is critical for the survival of a population or species.
  - 2) As long as the minimal water flow downstream is not hampered the impact on riverine fauna and ecosystem downstream is unlikely to be affected.
  - 3) Once an appropriate size reservoir is filled the project needs to be operated as 'Run of the River' project: where inflow equals outflow. The height and quantum of water stored needs to be the minimum size required based on seasonal and diurnal water flow regime. If constructed in this manner then the construction of dam *per se* would not likely be damaging downstream.

However, for higher profits the Power generation is envisaged to follow a Peaking Schedule to meet higher demands on the Grid at specific hours.....

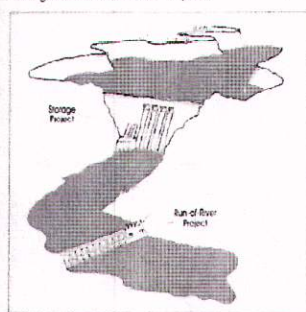
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## Peaking operations

- The proposed dam will hold: **1) live storage of 171.20 MCM, 2) submerge 11.31km<sup>2</sup> of area and 3) generate 1750MW power** (EIA report by CISMHE, July 2009).
- The power generation is supposed to result from inflow equals outflow of the riverine system subsequently.
- Large storage requirement of daily peaking operation during hours of high demand for better profits.
- Storage of water and its maximum release daily in synchrony with peaking needs would cause **floods on a daily basis** - which may be damaging to species, populations and ecosystem as a whole.

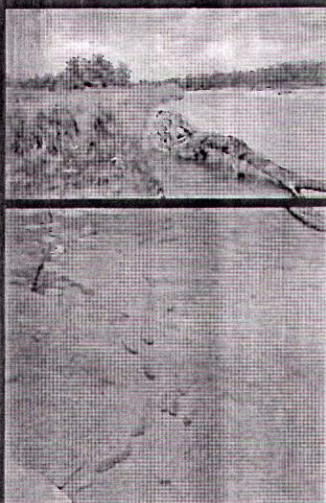
Storage and Run-of-River Projects



Current data and assessment is not at appropriate scale to assess the impact of Peaking power production on the ecosystem.....

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### The potential impacts



Daily flooding caused by peaking operations could potentially cause

- 1) Species and system have evolved with seasonal floods, where lifecycles and vulnerable stages occur in best possible conditions. Cannot survive daily floods.
- 2) Possible inundation of grassland and forest habitats in the Lohit river basin
- 3) Possible loss of critical habitats e.g. Small River islands which are important for nesting of birds.
- 4) Strong water current would affect the fishes and turtle movements and breeding success
- 5) Change in the hydro-morphology of river will also affect movement and survival of river dolphins and their major food species.

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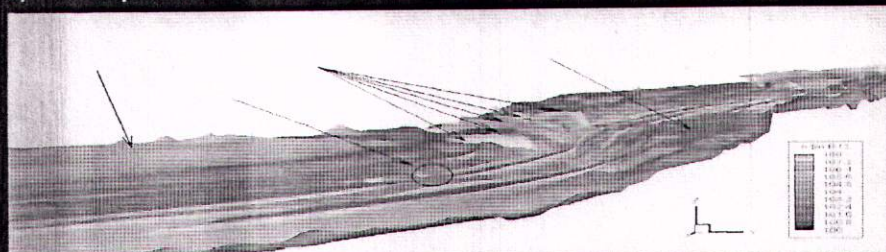
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## Measuring the impact of peaking operations

The intensity of the flood and its impact in a region is directly dependent on

- The fine scale topography of the riverscape
- The width of the channel
- The quantum of maximum water released at any one time daily



The available information on topography and channel width is at inadequate resolution to model the intensity of daily floods and their impacts....

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## Need of a detailed study

To determine the maximum amount of water to be released during peaking, with minimal impact on the wildlife;

- Mapping the riverscape using appropriate technology possibly Drone-LIDAR is necessary
- Study of riverine biota is required throughout the impact zone across seasons

**'A detailed Hydro-morphological and ecological study is required'**

### Conditions:

- Study period: 2years (with involvement of hydrologists and biologists)
- Proponent would abide the recommendation of the study especially made in context of peaking (written undertaking to be given to MoEFCC)
- All mitigation measures would be implemented in specified time and proponents would provide funds for that

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## Regarding Construction of Dam

The NBWL-SC may consider permitting the construction of dam while controlling the minimum and maximum flow on conditions that

1. Strictly 'No peaking' till a safety level can be established through a proper study
2. Size of reservoir should be the minimum required for addressing seasonal and diurnal flow fluctuation, while maintaining minimum flow of the season
3. Associated infrastructure development must not be barrier to large mammal movement with all mitigation measures (animal passage ways, fish ladder, etc.) in place.

## INFORMATION PROVIDED UNDER RTI

### 'Geospatial Analysis of Impacts of Lower Demwe Hydro-Electric Project on the Riverine Ecosystem of Lohit Basin, Arunachal Pradesh'

#### Objectives

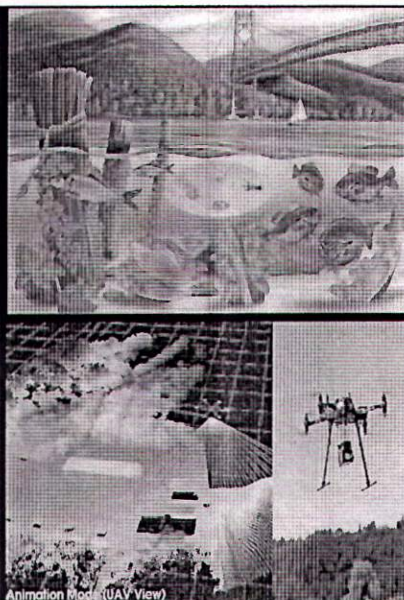
1. Documentation and understanding of the biota that is likely to be affected by Lower Demwe HEP
2. Mapping of River hydro-morphology and its seasonal dynamics at finer resolution.
3. Modelling of the impacts of the intensity of flood at different distances from the dam site upto Dibru Saikhowa National Park in the context of peaking operations.
4. Assessing the impact of circadian flooding on different biota and development of a viable plan that will have minimal impact on the conservation of these biota.

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## Methods

- Mapping of riverscape using Drone-LIDAR technology
- Intensive and extensive surveys to inventories the flora and fauna of the impact zone
- Modeling of intensity of flood at different distances from dam site (force and height of flood water)
- Determining the impact of peaking operations on the concerned river biota



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## Outcomes

- An attempt to bring a balance between development and conservation.
- Operational plan with appropriate recommendations on the **maximum quantum of water that can be released during peaking operations** with minimal negative impacts on the river ecosystem.
- Recommendation of other mitigation measures that should be addressed from compensatory fees paid by the DEMWE project
- The assessment would be useful for a **cumulative environmental impact assessment (CEIA)** of all HEP projects in this river basin..

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## Activity Timeline

Activity	2018-2019				2019-2020			
	Nov-Jan	Feb-Apr	May-Jul	Aug-Oct	Nov-Jan	Feb-Apr	May-Jul	Aug-Nov
Recruitment and team composition (including consultants and logistics of surveys and purchases)								
Field survey for Mapping hydro-morphology and riverine species study								
Study continues through the floods								
Modelling and data analysis								
Preparation of report								

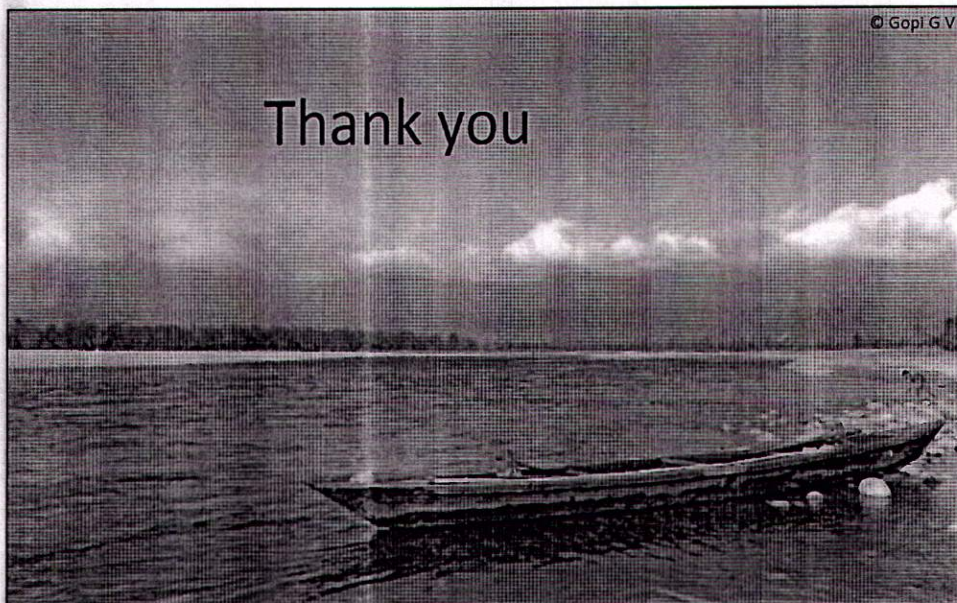
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## Budget

Sr. No.	Budget Head	Amount Year 1 (Rs.)	Amount Year 2 (Rs.)
1	Research biologists (JPF-3, SPF-1, PA-1)	22,08,000	22,08,000
2	Field Assistants @ 12,000 PM x 3	4,32,000	4,32,000
3	Vehicle and Boat (rented)	11,80,000	11,80,000
4	Drone & LIDAR	20,00,000	5,00,000
5	Consultant – Hydrologists	3,00,000	3,00,000
6	Faculty time six man months per year @ 250000 per month	15,00,000	15,00,000
7	GIS and RS work and imagery	2,50,000	2,50,000
8	Travel	6,00,000	5,00,000
9	Base Camp + Furnishing	2,20,000	1,20,000
10	Contingency	2,00,000	2,00,000
*	Sub total	88,90,000	71,90,000
11	Institutional Overhead @15%	13,33,500	10,78,500
*	Yearly Total	10,223,500	8,268,500
Total Cost =		Rs. 1,84,92,000 Rupees One Crore Eighty-Four Lakh Ninety-Two Thousand	

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## Demwe Lower Hydro Electric Project



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#### Chronology of Events pertaining to clearance

- Expert Appraisal Committee (EAC) recommended the environmental clearance (EC) for the project and was granted on 12.2.2010 by the MoEF, GOI
- EC was challenged before the Hon'ble Principal Bench of NGT, New Delhi, vide Appeal No.8 of 2011
- Hon'ble NGT upheld the environmental clearance granted to the project, vide its order dated 13 January 2015.
- Stage-I and Stage-II forest clearances were accorded on 1 March 2012 and 3 May 2013 by the MoEFCC.
- Stage-I and Stage-II forest clearances were challenged in the Hon'ble Principal Bench of NGT, New Delhi as Appeal No.92 of 2013
- NGT ordered that Standing Committee of NBWL shall reconsider the issue relating to Demwe Lower HEP Project and pass appropriate orders within a period of six months till that time both stage I and stage II clearances stands cancelled

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Cont...

- 48<sup>th</sup> meeting of the Standing Committee of NBWL - 27<sup>th</sup> March 2018
- Site inspection committee members recommended a comprehensive peer-reviewed study on hydrology and ecology of three seasons by a reputed and neutral scientific / technical organization(s) before according clearance.
- Standing Committee recommended that the WII Dehradun to carry out hydrological / ecological study and submit the report to the Ministry in three months i.e. 27<sup>th</sup> June 2018.
- Consequently the Standing Committee decided to defer the clearance proposal.

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## Objectives

WII team conducted a rapid survey in Lohit river basin in likely impacted areas (dam site to Dibru Saikhowa National Park): May-June, 2018

1. Assessment of forest areas for biodiversity and habitat corridors for carnivores
2. Assessment of aquatic life with special reference to Ganges Dolphin in downstream of Demwe project
3. Assessment of *chapories* for critically endangered bird Bengal Florican and other grassland obligatory birds

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## Survey area and survey period

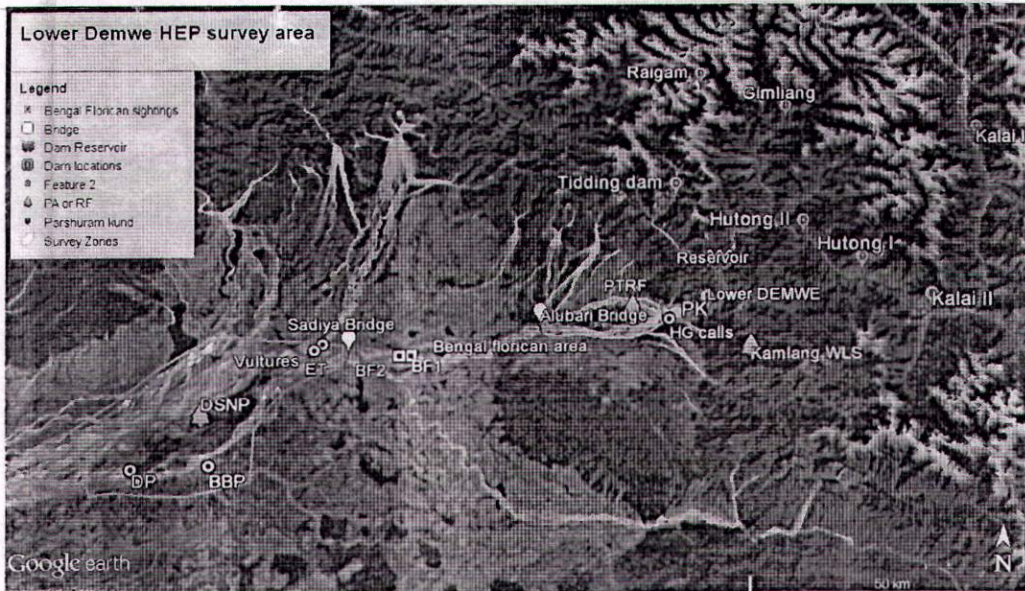
Since the upstream and downstream area of the proposed dam has different elevation profile and water currents, we divided survey area in five zones for conducting surveys.

- Zone 1 – Tidding to Parshuram kund - 15 km stretch.
- Zone 2 – Parshuram kund to Demwe - 7 km
- Zone 3 – Demwe to Alubari – 25 km
- Zone 4 – Alubari to Sadia - 45 km
- Zone 5 – Sadia to Dibru Saikhowa National Park- 45 km

**Survey period:** May 10-31, 2018

## INFORMATION PROVIDED UNDER RTI

## Survey area and results in brief



BF – Bengal Florican sighting, ET – Elephant Tracks, DSNP – Dibru Saikhowa NP, DP- Dolphin Point, PK – Parshuram Kund, HG calls – Hoolock Gibbon Calls, PTRF – Proposed Tezu Reserve Forest

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*[Signature]*  
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### Rare, Endangered & Threatened (RET) species recorded during WII survey

Sl. No.	Species Name	IUCN Status	WPA Schedule	Lat.	Long.
1.	Bengal florican	CR	I	27.788210	95.744012
				27.788494	95.767317
2.	Gangetic River Dolphin	EN	I	27.580332	95.252115
3.	White-backed vulture	CR	I	27.798855	95.571196
4.	Black-breasted parrotbill	VU	IV	27.587039	95.397963
5.	Asian Elephant	EN	I	27.798855	95.571196
6.	Assam Roofed Turtle	EN	I	27.740293	95.294006
7.	Hoolock Gibbon	EN	I	27.861806	96.294127
8.	Himalayan Griffon	NT	I	27.798855	95.571196

*Note - No RET species reported during previous biodiversity surveys, conducted by various agencies*

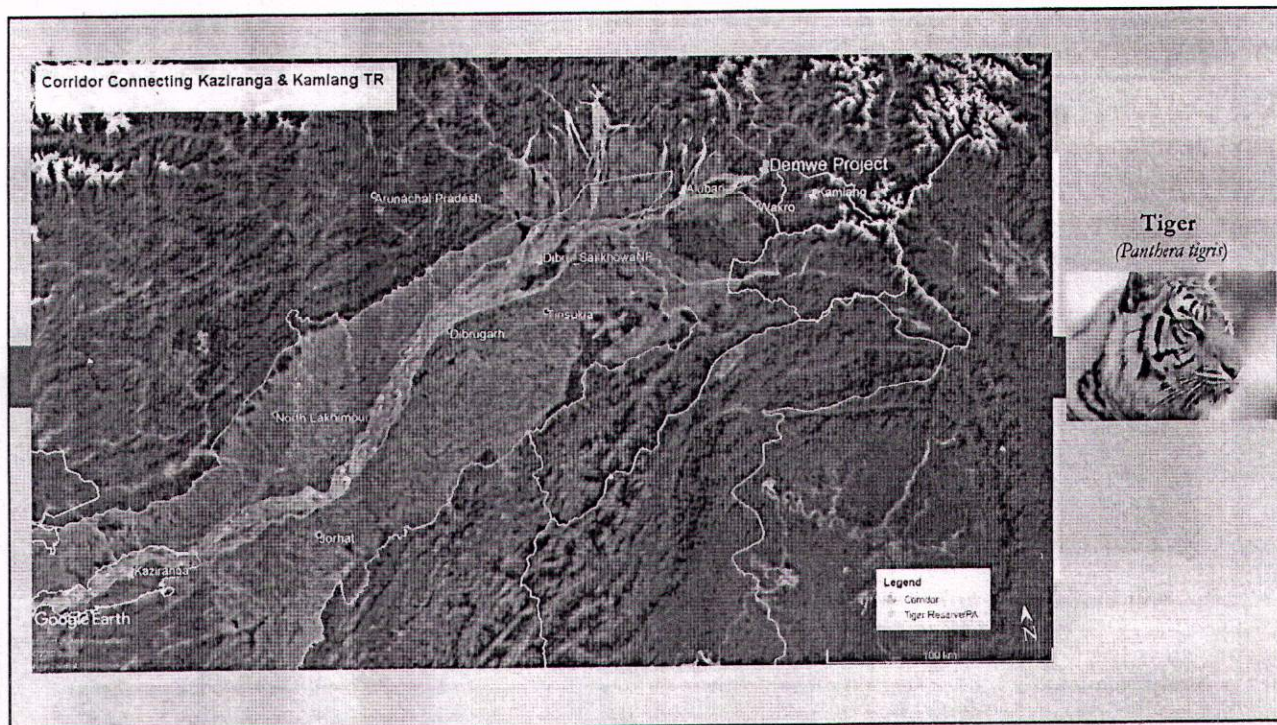
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### Four males of critically endangered bird Bengal Florican sighted in area between Alubari and Sadiya during three days survey

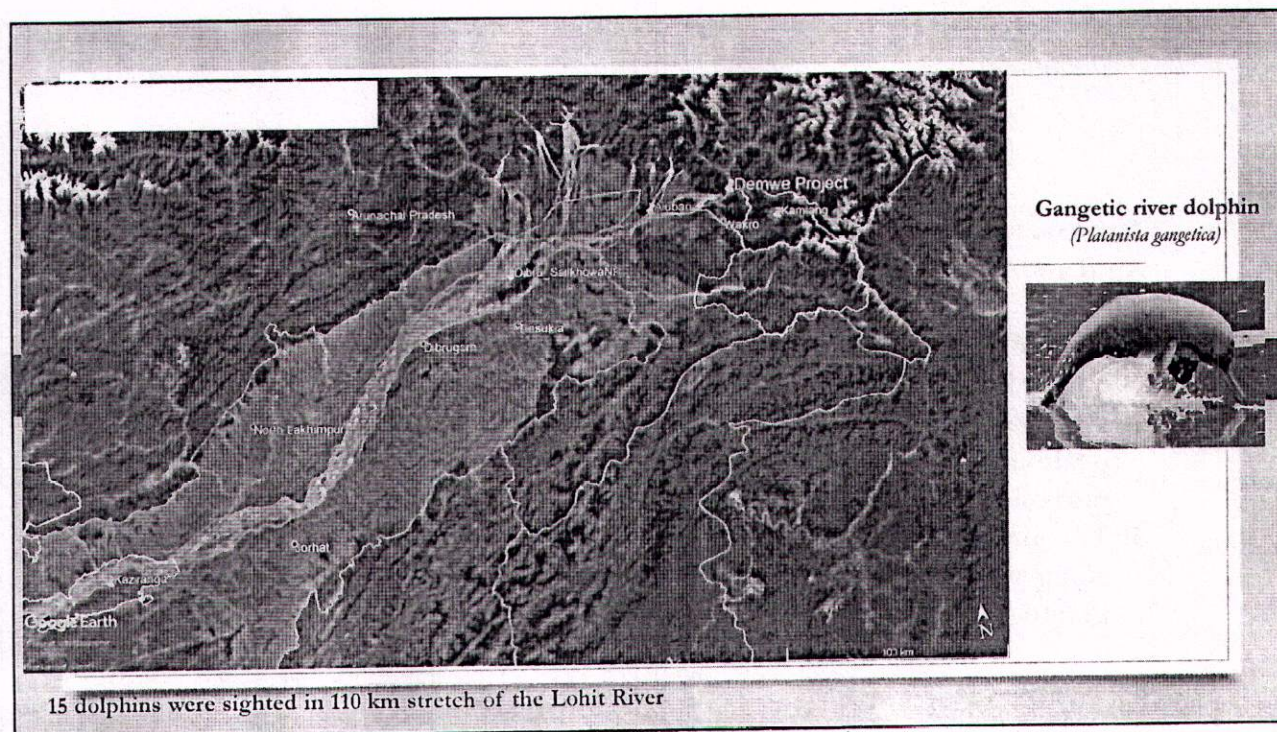


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### Presence of critically endangered and endangered species draws need for a long term study



Asian Elephant (left - track of an adult and a calf), Assam Roofed Turtle (middle) and Western Hoolock Gibbon (right - Photo of a dead animal from Dibru Saikhowa NP, taken by forest staff in third week of May 2018)

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### Consultation with project proponents

Two consultative meetings have been held with the project proponents in April and June 2018. Gist of the meetings is given below:

1. Harmonization of e-flows, peaking operations and power generation taking into account ecological requirements is feasible
2. Decision making on the project is possible taking into account the peaking power regime *viz a viz* ecological considerations, for which the proponent has given a written assurance
3. The proponent has also agreed for a comprehensive long term study along with construction of dam, which may also require 5-6 years time period

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