

**Proceedings of Seminar on Human-wildlife Conflicts in North Bengal
and
Evaluation of the Biodiversity Research Studies
Hotel Sinclair, Siliguri, 20 June 2017**

Intent of the Seminar

The daylong seminar on Human-wildlife Conflicts in North Bengal and Evaluation of the Biodiversity Research Studies was organized to disseminate the preliminary findings of the Research Studies and to make course corrections of the studies required, if any. It was also an opportunity to understand the situation of Human-wildlife conflicts prevalent in North Bengal and to try to ameliorate the same to the extent possible.

List of Participants

The list of participants is enclosed as Annexure -1 A

Structure of the Seminar

There were two sessions –Inaugural Session and Technical Session. The Inaugural Sessions included the formal opening of the seminar. This was followed by Technical Sessions comprising Keynote address and Technical Presentations on five research topics, by the research organizations including interactions with the participants.

INAUGURAL SESSION

Introduction by Project Director Finance, WBFBC Project

The Project Director, Finance, WBFBCP, introduced the context and format of the seminar. He clarified that the technical sessions comprise of:

- (i) Presentations by *Aranyak* on the six months progress of their studies on Elephant and Gaur,
- (ii) Presentation by *NEWS* on the newly started study on the habitat management interventions.
- (iii) Presentation on studies on Tiger and Leopard that is at the inception by *Aranyak*.

Welcome Note by the Chief Project Director WBFBC Project

The CPD PMU welcomed the participants and briefed on the background of the research projects. He sought the comments and inputs of the audience to further improve the research studies.

Address by the PCCF General

The PCCF General underlined that the research studies under the project should not be a pure academic pursuit, instead it should be able to provide sound management prescriptions for addressing the problems at hand. Among the study objectives of each research project, the management plan

The PCCF WL & CWLW, recalled that the ToRs of the studies were developed in line with the research needs of the Wildlife Wing and the data generated are expected to serve management purpose. The seminar would be able to assess the progress of the studies and help making course corrections if needed.

The Principal Secretary, FD, in his inaugural address, called for filling the gap between the academic pursuits and administration, as it is a gap 'created and nourished by both on the perception that both are separate'. The studies should not end with surveys only, akin to numerous surveys conducted in the past, but should be able to provide recommendations for feasible interventions for biodiversity management. The research studies should remain focused, answering specific questions. He called for creative discussion on the ensuing presentations.

Dr K.L. Ghosh, Project Director (M&E), WBFBC Project thanked all the participants, including the Principal Secretary, Forest Dept., the PCCF General, the OSD Forest Dept., all the Circle incharges, the Heads of DMUs and their officers for attending the seminar and hoped that valuable inputs would be obtained from them.

[illegible]

Keynote address

Dr P.Vyas, OSD Forest Dept. delivered a keynote address. He reminded of the loss of several species in North Bengal in the recent past. It was mentioned that all species involved in conflicts across the country, except Nilgai, are present in North Bengal and the challenges of management are huge. Bengal has only 4% of the country's Elephant population but has about 40% of the human deaths due to elephant attacks. Gaur, which once had a population of 600-700 has now become 5000-6000 posing management challenges. It is also interesting to note that the Leopard is moving out to the tea estates and forest fringes and not into the grasslands. The fate of the tigers once present in Gorumara and Jaldapara is known. He expressed that the studies may assess the ongoing management practices

and provide recommendations to modifications, if any needed. He expressed the hope that the research works would meet the management information needs in their respective subjects.

Technical Presentation I

Evaluation of Progress Report of Aaranyak on research project of Ecology of Elephant in N-Bengal

In Chair : Shri R.K.Sinha, PCCF, W.L & CWLW, W.B.

Presenter : Dr Jyoti Das of Aaranyak

Presentation on the six months progress report — October 2016 to March 2017 — was made on research project on Ecology of Elephant (*Elephas maximus*) in North Bengal including population dynamics, migratory pattern, feeding habits and human-Elephant conflicts.

One quarterly report and one half yearly report have been submitted by the Research organization so far.

Important points presented:

- (i) Survey for elephant's presence/absence was done in all the 234 grids (2 x 2 meters) laid out, by direct observation and interviews with the people.
- (ii) Elephant's presence was found in 200 out of 234 grids.
- (iii) Transects were set for distance sampling method survey and for dung pile study. 650km vehicle surveys were also done.
- (iv) 14 fresh dung piles were marked in Buxa. 179 elephants were sighted on 20 occasions, with herd size ranging from 1 to 65.
- (v) Training were imparted on elephant census by Aranyak to FD staff, for conducting the recently done all India elephant survey and participated in the survey itself.
- (vi) There were 76 cases of human elephant conflicts and two cases of human deaths due to elephant attacks. The presenter outlined the work they propose to do in the next 6 months.
- (vii) Support of the Wildlife Wing was requested for permission to stay in unused quarters or such places inside the parks in order to be able to start observations early in the mornings. Access to information/records held by the FD offices and accompaniment of forest guards to during field visits was requested.

The presentation generated a lively discussion.

Viewpoints /Decisions/Suggestions

- (i) The PCCF, W.L & CWLW, W.B. suggested to focus on conflict and mitigation issues. He also mentioned the need to identify family groups and build dossiers on them.
- (ii) The OSD, F.D. raised the question of the utility doing population estimation when the recently conducted national elephant census provides data on total counts of elephants.
- (iii) Several participants questioned the low number of human casualties (2 deaths) while there were 20 reported deaths in the study area during the period of study. To mitigate such gaps in information, the PCCF, General, called on the colleagues to provide the necessary support to the researchers, especially access to information.
- (iv) The C.F. W.L. North pointed out the need to explore the correlation between fodder availability and elephant-human conflicts.
- (v) The Director, SBR, opined that the framework of the study was good. They need to analyse the causes for the elephant attacks.
- (vi) On using the local youth group for information gathering on elephant movement, ADFO Jaldapara suggested to ask them to send photographs with geo-reference which would be reasonably authentic.
- (vii) The Biodiversity Conservation Specialist, PMC, WBFBCP called upon them not to lose sight of the final objective which is the management plan. It was suggested that the method used by SACON study in S Bengal to do the analysis of conflicts may be studied.
- (viii) The PCCF, General, suggested and the PCCF, W.L & CWLW agreed that the researchers be given identity cards with photographs so that they can have better access to the field staff.
- (ix) The CF, W.L. HQ offered to provide data on conflicts available with the WL HQ. It was suggested by him that Aaranyak may provide a nodal officer who would collect data from WL HQ, since this data is compiled every day.
- (x) The PCCF, WL & CWLW offered to provide facilities of staff quarters subject to availability and directed the CF WL (North) to follow up on this.

Technical Presentation II

Evaluation of Progress Report of Aaranyak on research project of Ecology of Gaur in N-Bengal

In Chair : Shri R.K.Sinha, PCCF, W.L & CWLW, W.B.

Presenter : Dr Bibhuti Prasad Lahkar, of Aaranyak

Presentation was made based on one quarterly report and one half yearly report submitted so far. The preliminary findings of Ecology of Gaur (*Bos gaurus*) in North Bengal including population dynamics, distribution,

habitat use pattern, protected area wise carrying capacity estimation and human-gaur conflict was presented.

Important points presented:

- (i) The methodology and site selection for the study was explained. It was declared that 34 transect lines were set in the grids selected in various habitats within the study area. 10 m x 10m plots were used for vegetation study.
- (ii) 78 Gaurs were sighted in 12 herds, of 1-18 herd sizes.
- (iii) 45 vegetation plots were set and vegetation analysis initiated. Six species of plants have been identified as preferred food.
- (iv) 14 cases of conflicts and two cases of deaths of Gaurs were noticed. He also outlined the study plan for the next six months.
- (v) The presenter raised the same logistic issues as in the case of elephants.

This was followed by detailed discussion by the participants.

Viewpoints /Decisions/Suggestions

- (i) The OSD, FD, commented that all the past data on Gaur are available with the FD offices and suggested the researchers to collect these, though the data has to be sifted out from the files.
- (ii) The PCCF, WL & CWLW also suggested to collect the old data available in the FD offices and asked the officers to give access to the researchers to the old information.
- (iii) The Biodiversity Conservation Specialist, PMC, WBFBCP suggested that the vehicle count data cannot be used for deriving population density.
- (iv) It was commented that herds were seen up to sizes of 70 but why was it that the reported herd sizes extend upto 18 only. Dr Bibhuti Prasad Lahakar explained that this is probably due to the time of observation. The researchers cannot camp in the forests and as such they don't get to observe the animals in the early morning, which is very important for the purpose of wildlife study. He reiterated the request for allowing the researchers to reside inside forest area.
- (v) The Director, SBR suggested to choose sites for intensive observations on a zonal basis as there is considerable ecological variation within the study area.

Technical Presentation III

Evaluation of Inception Report of NEWS on research project of Impact of habitat interventions.

In Chair : **Shri R.K.Sinha, PCCF, W.L & CWLW, W.B.**

Presenter : Dr.Himadri Sekhar Debnath of NEWS

Dr Debnath of NEWS presented the inception report on the study. The impact of habitat management practices, especially canopy manipulation and grassland restoration, on the habitat use pattern of herbivores and the herbivores-carrying capacity in Jaldapara NP, Gorumara NP and Mahananda WLS. The research organization has made two months' field and desk study and presented an Inception Report.

Important points presented:

- (i) GIS maps for the study area with vegetation coverage and methodology for the inventorisation of the fauna, flora and microhabitats have been developed.
- (ii) Data on animal counts in a couple of beats obtained from the forest offices were presented.
- (iii) Some areas for new planting have been identified, it was recommended to fell old plantations of teak and reforestation of the area with the natural vegetation. The presentation was followed by discussion.
- (iv) Plant samples have been collected for identification as a preliminary step toward Habitat Management Study.
- (v) Preliminary field observations from two field trips include 300-400 snag trees in Jaldapara WLS, which is absent in Gorumara and Mahananda WLS. Also there has been landscape changes along Siltorsa river.
- (vi) Teak and Jarul occupy about about 34% total plantation in PAs.
- (vii) Most preferred, Preferred and Stress time fodders need to be identified.

Viewpoints /Decisions/Suggestions

- (i) The OSD, FD pointed out that the objective of the study was to assess the impact of the past management interventions and not a new ecological study of grassland or floral study. The PCCF, WL & CWLW also confirmed this.
- (ii) The Director, SBR suggested to obtain data from the FD records.
- (iii) The Biodiversity Conservation Specialist, PMC, WBFBCP suggested the team to develop the methodology for studying the impact of past interventions in the PAs, to assess the herbivore carrying capacity of the PAs and to assess the weed distribution. It is too early to make conclusive statements based on preliminary observations.

Technical Presentation IV

Evaluation of Progress of work by Aaranyak on research project of Ecology of Tiger in N-Bengal

In Chair : Dr P.Vyas, OSD Forest Dept., Govt of West Bengal

Presenter : Dr U.Borthakur of Aranyak

A presentation was made on the methodology and timeline for research activities of the study titled *Population dynamics, distribution, breeding*

behaviour, and predator-prey relationship of Tiger (*Panthera tigris*) in North Bengal. The formalities of tender and work order have been concluded recently and field works are yet to take off.

Important points presented:

- (i) The project is based on a two phase study design. Phase I includes mapping of tiger presence and distribution in the PA network of North Bengal using sign survey and genetic sampling based species identification of genuine tiger samples.
- (ii) Phase II covers population estimation using Genetic capture-recapture in a single session, as well as Photographic capture-recapture in the second year.
- (iii) Annual tiger density will be calculated using information about area sampled and the maximum distance moved by individual Tigers based on locations of samples.
- (iv) Prey abundance estimation using line transects and distance sampling as well as dietary habit analysis by analysis of prey hair from tiger scats will be conducted in order to understand the prey-predator relationships. In addition, the demographic and genetic exchange in tigers of North Bengal will also be inferred from microsatellite allelic data.
- (v) Zones will be stratified. Normally 4 x 4 kms grids will be fixed for field study, but 2 x 2 kms grid will be used for refractory sites.
- (vi) ***The Inception Report will be submitted in late June and the project work will be started in September 2017.***

Viewpoints /Decisions/Suggestions

- (i) In the ensuing discussion The Director, SBR, pointed out to exclude Coochbehar district from the study and include Kalimpong district instead. Accordingly, Neora Valley and Singalila NP will be included.
- (ii) The Field Director Buxa Tiger Reserve requested the cooperation of the Aranyak team in the new Tiger census and Aranyak agreed to cooperate.
- (iii) The scats will be looked for in the trails and on the river banks 4-5 people will walk in parallel looking for scats.
- (iv) The findings may be expressed in plain English, without invoking much statistical jargons.

Technical Presentation V

Evaluation of Progress of work by Aaranyak on research project of Ecology of Leopard in N-Bengal

In Chair : Dr P.Vyas, OSD Forest Dept., Govt of West Bengal

Presenter : Dr U.Borthakur of Aranyak

A presentation was made on the planned study titled *Leopard (Panthera pardus) ecology in North Bengal including population estimation, population*

dynamics, distribution, habitat use pattern and human-Leopard conflicts. The formalities of tender and work order have been concluded recently and field works are yet to take off. Therefore the presentation was made on the methodology and work plan for the research work.

Important points presented:

- (i) The project follows a two phase design. In first phase it focusses on a grid based survey of leopard presence through questionnaire, sign survey and genetic sampling as well as assessment of human leopard conflict intensities through questionnaire and secondary information collection.
- (ii) Both the presence of leopards and human-leopard conflict intensities will be mapped in a GIS platform.
- (iii) In phase two, leopard population size will be estimated in select intensive study areas, using genetic capture-recapture and further validation by photographic capture-recapture analysis.
- (iv) Leopard density will be calculated using information about area sampled and the maximum distance moved by individual leopards based on locations of samples.
- (v) Further, estimation of prey abundance in mapped leopard habitats and scat hair analysis based quantification of prey species composition in leopard diet will be carried out, in order to understand dietary preference of the species.
- (vi) The reproductive analyses will also be done to the extent possible.
- (vii) ***The inception report will be presented in end of June and the work will commence in September, 2017.***

Viewpoints /Decisions/Suggestions

- (i) The OSD, FD and the PCCF, General questioned the need for the objective of the study of reproductive behaviour even as an opportunistic one, as it could consume a lot of the research time. The Biodiversity Conservation Specialist, PMC, WBFBCP suggested to drop this objective.
- (ii) The C.F. WL, North suggested to do the change analyses of landscape for finding the human-leopard conflict factors. She pointed out now leopards are moving into the rural landscape rather than tea garden, partly because tea plantations are not being maintained as done previously.
- (iii) The OSD, FD asked requested to throw light on the intensity of camera traps. However, Dr Borthakur said it was not possible to specify at this stage. At the best, it could be stated that at least one camera trap per grid will be placed.

The Chair concluded the session.

Summing up of the Technical Sessions

The Biodiversity Conservation Specialist of PMC, WBFBCP summed up the outcome of the deliberation of all the technical sessions.

- The deliberations have elicited valuable inputs to improve the quality of the research projects and the researchers could test the robustness of their methods and early findings.
- The importance of management focus of the studies was repeatedly underlined and the researchers are quite informed of it.
- As the recently conducted national elephant census provides data on total counts of elephants, if the researchers could acquire the census data, area wise, for the study area the population estimation objective of the study may be dropped from the elephant study. However, PA/range wise data on population data of elephant is important and Aaranyak may inform the PMU if and when they have succeeded in obtaining this data from the FD when the PMU may permit them to drop the population estimation objective.
- The researchers may collect past data on Gaur from the DFO offices and develop a protocol for standardizing the data thus collected, informed by the variations in data collection at the beat level in various places.
- Emphasis was laid on the studying the impact of the past interventions in the NEWS study so as to be able to develop new management prescriptions based on past failures and successes. Emphasis was given to developing the methodology for studying the impact of past interventions in the PAs, to assess the herbivore carrying capacity of the land to assess the weed distribution.
- Since the reproductive behavior study of Leopard, even on an opportunistic basis, would demand undue share of the field time and since it has no significant practical utility, this objective may be dropped from the study.
- It was agreed that the researchers be given identity cards with photographs so that they can have better access to the field staff.
- It was agreed to provide quarters facilities to the researchers subject to availability in or in the proximity of PAs for the ease of field observations.

The conclusion of the seminar was announced thereafter.

APPROVED



Principal Chief Conservator of Forests
Wildlife & Chief Wildlife Warden
West Bengal

List of participants of Seminar on Wildlife-Human Conflict & Evaluation of Biodiversity Research Studies on 20th June, 2017 at Sinclair Hotel, Siliguri at 10:30 A.M.		
Sl No	Name	Designation
1	SHRI C.SINHA, IAS	PRINCIPAL SECRETARY, FOREST DEPARTMENT, GOVT OF WEST BENGAL
2	SHRI N.K.PANDEY, IFS	PCCF, GENERAL, WB
3	SHRI S. BARARI, IFS	PCCF & CHIEF PROJECT DIRECTOR, WEST BENGAL FOREST AND BIODIVERSITY CONSERVATION PROJECT
4	SHRI P. VYAS, IFS	OSD, FOREST DEPARTMENT, WB
5	SHRI RAVI KANT SINHA, IFS	PCCF & CWLW, WB
6	DR. R.P.SAINI, IFS	DIRECTOR, SUNDARBAN BIOSPHERE RESERVE
7	SHRI L.G.LEPCHA, IFS	GENERAL MANAGER NORTH MANAGING DIRECTOR, WEST BENGAL FOREST DEVELOPMENT CORPN.
8	SHRI M.R.BALOGH, IFS	APCCF, NORTH BENGAL
9	SHRI S. SUNDRIYAL, IFS	APCCF, WILDLIFE
10	SHRI S. CHAUDHURI,, IFS	CCF & PROJECT DIRECTOR (FINANCE), WEST BENGAL FOREST AND BIODIVERSITY CONSERVATION PROJECT
11	DR K.L. GHOSH, IFS	CCF & PROJECT DIRECTOR (M&E), WEST BENGAL FOREST AND BIODIVERSITY CONSERVATION PROJECT
12	SHRI N.S.MURLI, IFS	CCF, WILDLIFE NORTH
13	SHRI U. GHOSH, IFS	CCF, NORTHERN CIRCLE
14	SMT. S. GHATAK, IFS	CF, WILDLIFE NORTH
15	SHRI S. SENGUPTA, IFS	CF, WL HQ
16	SMT S.BHATTACHARYYA, IFS	CF & ADDL. PROJECT DIRECTOR (IMPLEMENTATION), WEST BENGAL FOREST AND BIODIVERSITY CONSERVATION PROJECT
17	SHRI D.MALLICK, IFS	CF, NORTH-WEST
18	SHRI DEEPAK M, IFS	ACF, JALPAIGURI
19	DR. ANURAG CHOWDHURY	ACF, JAIPAIGURI
20	SHRI MRIDUL KUNDU	ACF, BAIKUNTHAPUR

21	SMT UMARANI N, IFS	DFO, BAIKUNTHAPUR DMU
22	SHRI B. SARKAR, IFS	DFO, JALPAIGURI DMU
23	SHRI D.K.DUTTA, WBFS	DFO, RAIGANJ DMU
24	SHRI K. SARKAR, IFS	DFO, MALDA DMU
25	SHRI AJAY KUMAR DUBEY, IFS	DFO, SILVI N DMU
26	SHRI SAMIR GAJMER, IFS	DFO, MONITORING N DMU
27	SMT D.S.SHERPA, WBFS	DFO, SSFD DMU
28	SHRI A.K.CHAKI	ADFO, SILVI N DMU
29	SHRI M. TERKEY, WBFS	ADFO, RAIGANJ DMU
30	SHRI BADAL DEBNATH	ADFO, CWLW DMU
31	SHRI BHUPEN BISWAKARMA, WBFS	ADFO, MONITORING N DMU
32	SHRI KUNAL KR BANERJEE	DF, JPG SF DMU
33	SHRI JYOTI DAS, PHD	AARANYAK, ASSAM
34	SHRI UDAYAN BORTHAKUR	HEAD, WILDLIFE GENETICS DIVISION AARANYAK
35	SHRI BISWAJIT ROY CHOWDHURI	SECRETARY, NATURE ENVIRONMENT & WILDLIFE SOCIETY
36	DR. S. FAIZI	BIODIVERSITY CONSERVATION SP
37	SHRI DR. H.S. DEBNATH	NEWS
38	SHRI RANJANA SAHA	NEWS
39	SHRI BIBHUTI PRASAD LAKHAR	AARANYAK, ASSAM
40	SHRI BIMAL DEBNATH	AWLW, JALDAPARA