2ND NATIONAL TRAINING WORKSHOP FOR SPEARHEAD TEAM OF GANGA STATES ON "BIODIVERSITY CONSERVATION AND MONITORING OF AQUATIC SPECIES OF GANGA RIVER" FROM 3TH TO 9TH SEPTEMBER, 2019.

Introduction

The Wildlife Institute of India (WII), Dehradun under the project "Biodiversity Conservation and Ganga Rejuvenation" conducted its 2nd National Training workshop for spearhead team of forest department of the Ganga River states on "Biodiversity Conservation and Monitoring of Aquatic Species of Ganga River", from 3rd to 9th September 2019. A total of 37 forest officials and staff from two Ganga River states namely Uttar Pradesh and Uttarakhand participated in this week long programme. The main focus of this workshop was to train the officers and frontline staff with the skills and capacities required for the biodiversity monitoring, conservation and management of the riverine species along the Ganga River. The objective of the workshop was to form spearhead team from Ganga states and train them in the areas of aquatic biodiversity monitoring for practical and action-oriented implementation of science-based research carried out by the WII. These trained spearhead team will train other frontline staff for successful biodiversity monitoring and restoration of the Ganga River.

Date and Venue

The training workshop was held from 3rd to 9th September 2019 at Wildlife Institute of India, Dehradun, Uttarakhand. The workshop was divided into five technical sessions (Annexure I).

Team members

Resource persons and WII team comprised of following persons: Dr. Ruchi Badola, Scientist G; Dr. S. A. Hussain, Scientist G; Dr. V. P. Uniyal, Scientist F; Dr. K. Sivakumar, Scientist F; Dr. Bivash Pandav, Scientist F; Dr. Gopi G. V., Scientist E; Dr. S. K. Gupta, Scientist E; Dr. K. Ramesh, Scientist E; Dr. Amit Kumar, Scientist C, Dr. Anju Baroth, Scientist C; Dr. Sangeeta Angom, Project Scientist; Dr. Pariva Dobriyal, Project Scientist; Dr. Niladri Dasgupta, Project Scientist; Dr. Deepika Dogra; Project Associate; Mr. Goura Chandra Das, Project Associate; Ms. Ruchika Sah, Project Associate; Mr. S.K. Zeeshan Ali, Spatial Analyst; Dr. Animesh Talukdar, Veterinary Officer; Ms. Aditi Dev, Project Fellow; Ms. Amanat K. Gill, Project Fellow; Mr. Ravindra N Tripathi, Project Fellow; Ms. Aishwarya Ramchandran, Project Fellow; Ms. Shatakshi Sharma, Project Fellow; Mr. Suyash Katdare, Senior Research Fellow; Mr. Saurav Gawan, Conservation Biologist; Ms. Monika Mehralu, Training Coordinator; Ms. Sonal Jain, Project Assistant; Ms. Dipti Dey, Project Assistant; Ms. Priyanka Singh, Project Assistant ; Mr. Akash Mohan Rawat, Project Assistant; Mr. Keshav Kumar, Project Assistant; Mr. Ratish Singh, Project Assistant; Ms. Preeti Shukla, Project Intern; Ms. Mrinalini, Project Intern.

Participants

The training workshop was attended by 37 forest officials from two Ganga States: i.e. Uttarakhand and Uttar Pradesh, 19 participants from Uttarakhand and 18 participants from Uttar Pradesh attended the workshop. Detail list of participants is provided in the annexure II.

Day 1

Day 1 emphasis was on theoretical understating of the biology, ecology, monitoring methods for various taxa *viz.*Insects, Turtles and Fishes of Ganga River. The session started at 9:00 am with the registration of the participants and simultaneously, they were asked to fill a form about their expectation from the workshop. Dr. G.S. Rawat, Director, WII inaugurated the workshop with an opening remark on the importance of establishment of spearhead team and their capacity building on biodiversity conservation and monitoring techniques of indicator species of Ganga River. Dr. Sangeeta Angom, welcomed the participants and introduced the WII-NMCG Ganga team followed by a round of introduction of the participants. Dr. S.A. Hussain gave a brief overview about the project objectives and its goals, threats and mitigation practices of the Ganga River. He also gave a concise overview of the different activities carried under the WII-NMCG project.

Dr. Ruchi Badola, Scientist G, briefed about the objectives of the workshop, role of spearhead teams of the five Ganga States to the participants. She focused on the importance of capacity building programmes through the trained spearhead team of fellow frontline staff of respective forest department, for ecological monitoring and restoration of the Ganga River. She also gave a brief outline about the expectations from the trained participants.

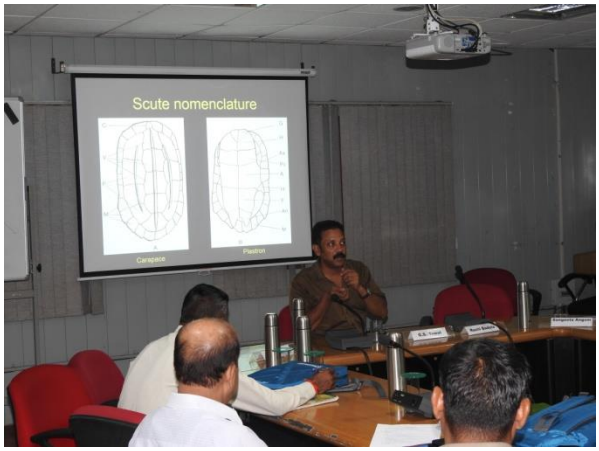
Dr. V.P. Uniyal, Scientist F, explained about the importance of invertebrates and their role in the ecosystem. Before touching to the main topic, he first explained about the importance of invertebrate in an ecosystem, role of ants, termites, butterflies and dung beetles in a forest ecosystem, also mentioned about the tiger beetle presence of which indicates about the health of an ecosystem, factors determining the selection of indicator of species and illustrated the datasheet use for the monitoring of the insects. He explained the factors determining the selection of indicator species and the datasheet used for monitoring of insects. Reasons for trade of invertebrates were also shared with the participants.

Post lunch, the session started with a talk by Dr. K. Sivakumar, Scientist F, on “Monitoring of Fish Population”. Dr. Sivakumar made participants familiar with the different fish species found in the Upper, Middle and Lower stretch of Ganga River and the various threats to these species. He discussed about the importance of biological monitoring of fish species that can serve as an indicator species along the stretch of the Ganga River. The annual flood plain river cycle, the seasons in which fish catch must be avoided to sustain best fishing practices and the diverse microhabitats for fishes found in the river were also explained. He talked about the different monitoring methods and sampling techniques required for monitoring for fish population and what all information are required to fill in Catch Per Unit Effort (CPUE) datasheet. Dr. Sivakumar concluded his session by discussing several conservation methods for fish populations such as monitoring local market fish availability, ‘State Fish Concept’, threatened species ranching, vigilance on destructive and illegal forms of fishing, monitoring river water quality and exotic species abundance estimation etc.

This was followed by a short visit to Forensic Lab in WII campus where Dr. Sandeep Gupta, Scientist E, addressed the participants and gave an overview on poaching. He briefed the participants about the role of Forest Department in cases of wildlife crime and how genetic monitoring in forensic lab can assist them. He demonstrated several case samples and explained the techniques to identify and

differentiate between the duplicate and original samples obtained in the cases of wildlife crime and trade. Dr. Gupta also shared the method of preserving and sending the samples to the forensic lab for genetic testing.

The day ended with a talk by Dr. Bivash Pandav, Scientist F, on “Monitoring of turtles”. First of all, he explained the difference between turtle and tortoise, and then he explained the taxonomy, morphology, biology, distribution, and mating behaviour and population studies of turtles. It was informed that Turtles are found everywhere except Arctic and Antarctic. In India, a total of 23 species of turtles are recorded, of which 13 are found in the Ganga River and 4 species of tortoises are present in India but not in the Ganga River. He also explained about the difference between the male and female turtle, in case of male the plastron is concave while in female the plastron is flat, they show sexual dimorphism. In case of hardshell turtles, the male has concave plastron while in female the plastron is flat. In turtles, gender is determined by incubation temperature. High incubation temperature produces female, while low temperature produces male. A precise overview regarding the importance of turtle in the Ganga River and methodology of population estimation e.g., the mark capture-recapture technique was also given. He shared the identification features for different species of tortoise and turtles with the participants. Dr. Pandav concluded his talk by discussing the threats such as illegal trade of turtles for meat and pet. It stated that West Bengal is the main centre of trade and supply of turtles into Bangladesh and north-eastern countries.



Day 2

On the 2nd day, the session started with a talk by Dr. Niladri Dasgupta, Project Scientist, WII, on the "Monitoring River and Wetland Variables". During his lecture, he discussed different aspects of rivers such as definition of a river; types of river; lateral, longitudinal and vertical connectivity of river; its source, headwaters, tributary, delta and estuary. He explained the classification of rivers in India based on its physical and biological characteristics, importance of the Ganga River and its biodiversity; factors affecting the biodiversity of the Ganga River. He stated that the Ganga River is divided into three stretches, the upper stretch is from Gaumukh to Haridwar, middle stretch is from Haridwar to Varanasi and lower stretch is from Varanasi to Ganga Sagar. Dr. Dasgupta also defined the characteristic features of river such as water depth, river width, river flow-surface flow, velocity and volumetric flow. The different variables and parameters to measure the river; identification of potential sites for intervention; different parameters to defined the physio-chemical characteristics, these are physical, chemical and microbiological parameters were also informed. He also explained about the term Bio-magnification and bio-accumulation, Bio-monitoring which includes anthropogenic pressures or impacts and other threats to be identified and at the end of his lecture he described the Acts, Rules and Policies related to river.

Dr. Gopi G. V., Scientist E, gave a talk on "Monitoring of Waterbirds". He gave a brief introduction on the different species of skimmers present in the world i.e., Indian skimmer, African skimmer and Black skimmer. Then he went on to explain the significance of Ganga River, how local communities are dependent on the Ganga River for religious activities, commercial and industrial activities. He also talked about the biodiversity of the Ganga River, which is a home to 197 species (144 water birds and 53 waters associated birds) and aquatic birds belonging to 33 families. He talked about the importance of water birds; state wise distribution of bird species along the stretches of the Ganga River; threatened species, their significance, status, habitat and threats. He also emphasised on the priority species of the Ganga River and discussed the issues regarding the extinction of birds from India. He taught as to what a Ramsar site is and the criteria to be met to declare a Ramsar site. Further, explained that if any area or point supports 20,000 or more bird diversities then that area is declared as a Ramsar Site. A detailed account of the methodology used in monitoring process, breeding season of different species was also given. It was mentioned that during the winter season migratory birds are seen and at this time population estimation can be done for the water birds.

Mr. Suyash Katdare, Senior Research Fellow and Dr. Animesh Talukdar, Veterinary Officer gave a presentation on the "Monitoring of crocodiles". Mr. Suyash Katdare discussed about the biology, habitats, distributional range, identification characters and the difference between male and female

crocodilian species. He explained the morphological difference between an alligator and crocodile; alligator has a very broad U-shaped snout, lower jaw is smaller than the upper jaw, only teeth from upper jaw are seen while in crocodile its narrow V-shaped, interlocking of both teeth is visible. He emphasised on sand mining being one of the major threats to Gharials and Crocodiles since these species nests on fine sand. He talked about the feeding habits of crocodilian species, stating that Gharial is Piscivorous (fish eater) and crocodiles are omnivores. The reproductive strategy for crocodilian species was explained, in case of Mugger and Gharial nesting is done in sand pits, while salt water crocodile makes mound nest and they show very strong parental care. The methodology used for counting the individuals such as boat survey and stationary bank counts was taught. It was informed that winter season is best for monitoring of crocodilian species since they come out from water for basking. During the winter season, direct count and spot light surveys are suitable method for counting and in breeding season nest count method is used. He also mentioned about the Integumentary Sensory Organ (ISO) temperature sensors found as black dots on the body of the crocodile through which the organism checks the temperature and humidity of the potential nest area in order to lay eggs. He discussed about the other major threats like fish nets, water abstraction, agriculture, industrialization, pollution due to which the population of crocodile is declining. The optimum time and precautions that should be taken while handling and shifting the reptilian egg for in-situ nest protection along with the process of hatchery and release were also shared.

Dr. Animesh Talukdar delivered a talk on “Handling and Transportation of Crocodilians”. He briefed about the reasons why handling of crocodiles is necessary considering the matters of public safety, research, relocation, captive management etc. He discussed about the roles of different stakeholders in handling and the considerations that must be taken into account before handling the species. He also explained about the different kinds of traps that are suitable for capturing and handling crocodiles of different age and length and precautions that should be taken while handling the said species. The marking technique and transportation system for crocodilians was shared. Dr. Animesh concluded the session by discussing the in situ-egg protection procedure and conditions required for incubation of crocodilian eggs.

Dr. Niladri Dasgupta, Project Scientist delivered a talk on “Monitoring of Otters”. He gave a brief introduction on Otters and identification features of three different species of Otters (Smooth Coated Otter, Eurasian Otter and Oriental Small Clawed Otter) found in India. It was informed that Otters are found everywhere in the world except Australia and Antarctica and there are in total 13 species of otters recorded worldwide. The role of Otters as apex carnivores, wetland ambassadors and umbrella species was explained. The habitat and dietary pattern of different species of otter found in India were shared. He discussed about the monitoring techniques for Otters including sign survey, direct sightings and social-association time for Otters. He went on to explain about the morphology of the footprints of different Otter species and the purpose of the survey as to identify the species, its range of habitat, population assessment, monitor change in its status and distribution, examine its movement pattern, home range, dietary spectrum etc. The field methodology design and datasheet for monitoring Otters was shared with the participants. The talk ended with the concept of source and sink population and the various threats to Otter such as pollution, poaching for fur, road kill, net trap kill etc.

Post lunch, Mr. Goura Chandra Das, Project Associate, gave a talk on “Monitoring of Gangetic River Dolphin”. He explained about the morphology, physiology, basic biology and aquatic adaptations, present status and trend of the Gangetic River Dolphin. The role of Dolphins as an indicator species and an umbrella species was discussed. He also explained why monitoring is needed, what

methodology to be adopted for dolphin count and what is the best time of monitoring? The participants were informed about the training of *Ganga Praharis* for extensive Dolphin monitoring. When dolphin monitoring is done, three types of biases arise such as observer, availability and coverage bias. The double observer method, with the well-trained observers is best method for monitoring of dolphin to minimize the error. Mr. Das informed the participants about the factors that determine the occurrence of the Gangetic River Dolphin and how photographic evidences facilitate the survey. He discussed about the major threats causing the decline in population like the extraction of water, reduced water flow and 97% of water being diverted for irrigation and industrial purpose. He also explained that the major threat causing the declining dolphin population is physical barrier. Other threats such as excessive fishing, fragmentation of river habitat, use of fishing net, poaching for oil, water pollution (bio-accumulation), loss of habitat availability, dredging, mining are also responsible for decline in Gangetic river dolphin's population. He gave a demo as to how a datasheet should be filled during Dolphin counting techniques, and the variables and parameters to be considered. During the session the participants also interacted and cleared their doubts about the behaviour pattern and counting techniques of the Gangetic River Dolphin. Mr. Das concluded the session by showing a video of Ganga – Ghagra confluence where Dolphins are found in good numbers and how challenging it becomes to count them.

The day ended with the Conservation Education session which was conducted by Dr. Lima Rosalind. Dr. Lima explained about the conservation education, its importance identification of stakeholder for conservation education. After the lecture, a group activity named "Web of Life" was conducted. Through this activity it was explained that, in an ecosystem each species is important and interdependent. If one of the species population decline it will automatically affect the other species. The session concluded with the group discussion where the participants were divided into five groups and each group have to write the target stakeholder, problem, its solution and implementation on conservation issues in their field area.

Day 3

The third day began with the lecture by Dr. K. Ramesh on 'Technological Innovation for wildlife conservation: Options and Challenges'. In this session he explains how technologies can be use in the monitoring of biodiversity, also information regarding the application of satellite remote sensing and geographical information system were explained. Further, he explained about the drone, its type, construction and its uses. There was need to negotiate wide area of forest so drones are developing to overcome this problem. The participants were informed about the different types of drones and demonstration was done in the campus of WII.

Sh. Zeeshan Ali and Ms. Aishwarya Ramachandran gave presentation on GIS Mapping techniques with reference to Ganga basin. Ms. Aishwarya Ramachandran gave a brief explanation on GIS (Geographical Information System) that deals with the software and location for mapping. Giving the example of Bhuvan Ganga App she explained how they can update the information like sampling location, population, distribution of different species, own survey information time series visualization, conservation status, high or low biodiversity area, spatial distribution of threats through applications. The session continued by a GIS LAB visit where the participants were informed about the use of GIS technology in biodiversity conservation of the Ganga River.

Dr. Anju Baroth talked about different parameters of monitoring water quality and eco-toxicology. Apart from this she also highlighted the factors responsible for the water quality degradation, concept of eco-toxicology, by citing an example of decline in vulture population due to Diclofenac she explained about the concept of biomagnifications and bioaccumulation. After the lecture, the participants visited the eco-toxicology lab, where they were informed about the equipments uses for monitoring water quality such as column chromatography, gas chromatography and atomic absorption spectrum.

The WII-Nature trail visit was led by the Dr. Amit Kumar and Ms. Dipti. During the visit, the participants were explained about the major tree species of the nature trail; ecological importance of the plants species like *Ficus spp.* which helps in maintaining the bird diversity and 20 medicinal species plants such as *Tinospora cordifolia* (Giloy). Further he explained the different species of *Ficus* and its identification characters, he also informed about the new species of spider recorded by WII. An overview about the sampling techniques used for the monitoring of aquatic vegetation; riparian vegetation along the banks of the Ganga River and its significations were also discussed. Other than vegetation, the participants were informed about the migratory and resident birds, history of lake and origin of Asan River.






Day 4

The day started with a lecture by Dr. Sangeeta Angom on 'Biological Sampling Techniques' were she explained about the methods that are used for collecting the samples from the different species and methods for the preservation of the samples were also mentioned. After this, Dr. Ruchi Badola talked about participatory management and community based conservation. She explained why it is important to involve local communities in the conservation activities followed by team building exercise.

Team Building exercise: Two groups were made containing 4 participants in each group. The participants were given newspapers asked to reach point without tearing and stepping out of the

newspaper. In the group each participants tried to reach the point while the second team worked in team reach the point without tearing and stepping out of the newspaper. The aim of performing this exercise was to build reliable and realistic representation of a person.

Group activity 1: For the second activity, the participants were divided into three groups. A closed box containing miscellaneous items was shown to the each group. The first group had to guess the contents of the box only by listening to the sounds. The second group was allowed to briefly touch the objects in the box, without seeing the items and guess the contents while, the third group was allowed to see the contents of the box. After this activity, the groups were then asked to write down the items they think or remember to be inside the box. Group 1 could guess only 5 items and many of them were wrong guesses. The second group fared a little better than the first group, while the third group could write down most of the items. The task of jotting down the contents of the box was based on mutual consensus within a group.

Dr. Pariva Dobriyal, asked the group members how they felt while performing their tasks. The Group one was similar to the top officials who guessed the contents of the box through their past experiences and also through information by sub-ordinates. The second group was akin to the mid-level managers, and the third group represented the ground level staff, who dealt with issues first hand. The purpose of the activity was to point out the role played by different levels of professionals within an organization or a department, and the importance of participation at all levels. The activity also pointed to the kind of participation levels.

After the technical session the Spearhead Team along with WII Project personnel visited Forest Research Institute as a part of the Training programme. Dr. Deepika Dogra, introduce all the participants about the FRI and Dr. Ombir Singh, Scientist 'E', FRI Dehradun and gave a summary about the training workshop. After that Dr. Ombir Singh welcomed the participants and presented the achievements of FRI from the time of its establishment. He also talked about the DPR that has been prepared by FRI as Forestry Intervention for Rejuvenation of Ganga and Yamuna River and interacted with the participants about how the Forest Departments of Ganga States and FRI can work together to restore the Ganga River catchment. They interacted about the different plant and tree species that can be planted along the river according to different geo-climatic conditions of 4 States. The Spearhead Team visited the Museums and took a tour of the FRI campus.






Day 5

The fifth day commenced with a field visit to Asan Conservation Reserve situated at the confluence of Yamuna and Asan River, Uttarakhand. The wetland comprises of an area of 4.44 sq.km and is known for the presence of resident and migratory avifauna, Indian Bird Conservation Network lists Asan Conservation Reserve as an Important Bird Area. Mr. Saurav Gawan briefed the participants about the visit and activities. The participants were divided into three groups consisting of two members from WII. The participants were explained about the characteristics of aquatic and terrestrial birds, differences about migratory and resident birds. The techniques used for the monitoring of the birds like total count and point count were also explained to them. After this, Mr.

Goura Chandra Das demonstrated water quality monitoring technique using water analyzer. The field visited concluded with a group photograph.

Day 6

On 6th day, an interactive session was organized for the participants with *Ganga Praharis*, NGOs, College student and professors at GMVN, Haridwar. The objective was to bring the stakeholders on common platform where they can share their thought and also how they can help each other in Ganga Biodiversity Conservation. The session started with the introduction of *Ganga Praharis* actively working at the stretch of Haridwar district. Dr. Pariva Dobriyal explained about the concept and role of the *Ganga Prahari* and Dr. Deepika Dogra informed about the activities and progress of the *Ganga Praharis* at an individual level. Further, a group activity was conducted in which the participants were divided into 5 groups, main objective of the activity was to come up with the common problem and solution regarding the issues related to Ganga and its biodiversity conservation.

Team A came up with the common problem of sewage and cleanliness of the Ghats. The team suggested that more dustbins should be installed at the Ghats and regular cleanliness drive should be organized along with the local communities, NOGs and religious communities.

Team B discussed about the Population expansion which directly increase demand of resources and problems related to pollution along the Ganga River. In order to come up with this problem, alternate livelihood option such as compost making from the religious offerings, incense stick making etc. can be provided. It is also recommended that the departments should come together for the Ganga and its Biodiversity conservation. Other than this regular awareness activities regarding the Ganga and its biodiversity should be conducted on the Ghats during religious occasions.

Team C talked about the unavailability of sanitation facilities on the Ghats which directly pollute the Ganga River. So, government should provide the ideal number of toilets near the Ghats and river side.

Team D pointed out that the waste generated through religious offering is also a main problem. These problems can be solved by installing separate dustbins for the religious offerings at the Ghats, so that people can discharge there and the disposal can be done in a proper way. After this the session concluded with the group photograph followed by Lunch. After, the participants went to Parmarth Niketan Ashram, Rishikesh for attending the Ganga Aarti.

Day 7

On the occasion of the Himalayan day, the valedictory function of the workshop was organized at the auditorium of Wildlife Institute of India, Dehradun. Shri. Jairaj, PCCF and HoFF, Uttarakhand Forest Department was the chief guest for the event. Dr. Ruchi Badola welcomed the august gathering to the event and also marked the importance of the Himalayan Day, which was initiated by Dr. Anil P. Joshi, founder of Himalayan Environmental Studies and Conservation Organization (HESCO), Suklapur on 9th September, 2010. Dr. Sangeeta Angom, Project Scientist and Training Coordinator presented the training report. Shri. Jairaj, in his address, motivated the forest officials to involve local communities in the conservation activities; he further added forest staffs are the protectors of fauna and flora. He also draw the attention to the importance of celebration of

Himalayan Day, which is the source of the major rivers and adverse effect of climate change affecting the Himalayan glaciers causing having rain, forest fire in the Himalayan landscape. In order to maintain the dignity of the Dev Bhoomi Uttarakhand, he encouraged the forest staff to involve eco-tourism in the conservation activities. The valedictory function culminated with certificate distribution to the participants.

Annexure I

DAY – 1 (3rd SEPT. 2019) TECHNICAL SESSION I:ECOLOGICAL MONITORING		RESOURCE PERSONS
0900-0930	Registration and Pre-Training Assessment	**Ms. Monika Mehralu, Ms. Preeti Shukla, Ms. Mrinalini, Mr. Keshav Kumar and Mr. Ratish Singh**
0930-0940	Inaugural Address	**Dr. G.S. Rawat, Director, WII**
0940-1030	Introduction to Wildlife Institute of India and Project Biodiversity and Ganga Conservation: An overview	**Dr. S. A Hussain**
	Workshop Objectives, Role of Spearhead Team and Expectations	**Dr. Ruchi Badola and Dr. Sangeeta Angom**
1030-1100	**TEA**	
1100-1200	Invertebrate as bio-indicator for ecological monitoring	**Dr. V.P. Uniyal**
1200 - 1240	Monitoring of Fish Population	**Dr. K. Sivakumar**
1240 - 1330	Monitoring of Amphibians and Snakes	**Dr. Abhijit Das**
1330 - 1340	**GROUP PHOTO**	
1340 - 1440	**LUNCH**	
1440 - 1600	Forensic Lab: Overview of Poaching and Case Samples	**Dr. Sandeep Gupta**
1600 - 1630	**TEA**	
1630 - 1715	Monitoring of Turtles	**Dr. Bivash Pandav**
1715 - 1730	**Group Discussion**	
DAY – 2(4th SEPT. 2019) TECHNICAL SESSION II:ECOLOGICAL MONITORING (CONTD.)		
0930- 1015	Monitoring river and wetland variables	**Dr. Niladri Dasgupta**
1015 - 1100	Monitoring of Birds	**Dr. Gopi G.V.**
1100 - 1130	**TEA**	
1130 - 1215	Monitoring of Crocodilian	**Mr. Suyash Katdare**
	Handling and Transportation of Crocodilians	**Dr. Animesh Talukdar**
1215 - 1300	Monitoring of Otters	**Dr. Niladri Dasgupta**
1300 - 1400	**LUNCH**	
1400 – 1445	Monitoring of Gangetic River Dolphin	**Mr. Goura Chandra Das**
1445 - 1500	**TEA**	
CONSERVATION EDUCATION		
1500 - 1530	Conservation Education: A tool for Eliciting Public Support	**Dr. Lima Rosalind**
1530 - 1630	Identifying Stakeholders for Conservation Education	**Dr. Lima Rosalind**
1630 - 1730	Group Activity on Designing Education Materials	**Dr. Lima Rosalind**
DAY – 3(5th SEPT. 2019) TECHNICAL SESSION III:ECOLOGICAL MONITORING (CONTD.)		
0930 - 1030	Technological Innovations for Wildlife Conservations: Options & Challenges	**Dr. K. Ramesh**
1030 - 1100	GIS Mapping techniques with reference to Ganga Basin	**Sk. Zeeshan Ali & Ms. Aishwarya Ramachandran**
1100 - 1130	**TEA**	
1130 - 1230	GIS LAB: Learning the tools of GIS techniques	**Sk. Zeeshan Ali &**

		Ms. Aishwarya Ramachandran
1230 - 1330	Eco-toxicology and Water Quality Assessment	**Dr. Anju Baroth**
1330 - 1430	**LUNCH**	
1430 - 1530	**Eco-toxicology Lab: Water Quality Assessment**	**Dr. Anju Baroth**
1530 - 1600	**TEA**	
1630 - 1730	**WII NATURE TRAIL:** **Monitoring of Aquatic and Riparian Vegetation**	**Dr. B. S. Adhikari, Dr. Amit Kumar and Ms. Dipti**
DAY – 4 (6th SEPT. 2019) **SESSION IV: PARTICIPATORY MANAGEMENT**		
0930 - 1030	Community Participation in Ganga Biodiversity Conservation	**Dr. Ruchi Badola**
1030 - 1100	**TEA**	
1100 - 1200	Team Building "Biodiversity and Ganga Conservation"	**Dr. Pariva Dobriyal, Dr. Deepika Dogra, Ms. Amanat Kaur Gill and Ms. Monika Mehralu**
1200 - 1300	Group activity: Community Participation	**Dr. Shivani Barthwal, Dr. Sangeeta Angom, Ms. Aditi Dev, Ms. Michelle Irengbam Ms. Preeti Shukla and Ms. Sonal Jain**
1300 - 1400	**LUNCH**	
1400 onwards	**Visit to Forest Research Institute (FRI), Dehradun**	**Dr. Deepika Dogra, Ms. Monika Mehralu, Mr. Keshav Kumar, Mr. Ratish Singh, Mr. Aakash Mohan Rawat**
DAY – 5 (7thSEPT. 2019) **SESSION VI: FIELD TRAINING**		
6:30 A.M (Bus will wait at the respective guest house)	**ASAN CONSERVATION RESERVE**	**Dr. Niladri Dasgupta, Mr. Saurav Gawan, Mr. Goura Chandra Das, Sk. Zeeshan Ali, Mr. Keshav, Mr. Aakash Mohan Rawat**
DAY – 6 (8th SEPT. 2019) **SESSION VII: COMMUNITY WORKSHOP AT HARIDWAR** **6:30 A.M (Assembled at WII, Porta Cabin)**		
1000 - 1300	Community engagement workshop at GMVN, Haridwar	**Dr. Ruchi Badola, Dr. Sandya Dogra, Dr. Pariva Dobriyal, Dr. Sangeeta Angom and Ms. Monika Mehralu**
1300 - 1400	**LUNCH**	
1400 - 1530	Interaction with *Ganga Praharis*	***Ganga Praharis*, Haridwar**
1700 Onwards	Ganga Aarti, Parmarth Niketan, Rishikesh	**Ms. Monika Mehralu, Mr. Keshav Kumar, Mr. Ratish Singh, Mr. Aakash Mohan Rawat, Ms. Preeti Shukla and Ms. Mrinalini**
DAY – 7 (9TH SEPT. 2019) **VALEDICTORY FUNCTION**		
0930 - 1030	Post Training Assessment (Feedback)	**Dr. Sangeeta Angom and Ms. Monika Mehralu**

1030 - 1040	Welcome	**Dr. Ruchi Badola**
1040 - 1100	Training Report	**Dr. Sangeeta Angom**
1100 - 1130	Address by Guest of Honour	**Shri. Jairaj, PCCF and HoFF, Uttarakhand Forest Department**
1130 - 1200	Distribution of certificates	**By the Chief Guest & Programme coordinator**
1200 - 1215	Valedictory Address	**Dr. G.S Rawat, Director WII**
1215 - 1230	*Presentation of Memento to Guest of Honour*	**By the Programme Coordinators**
1230 - 1300	Vote of Thanks	**Ms. Monika Mehralu**
	COURSE LUNCH	