



 भारतीय वन्यजीव संस्थान
Wildlife Institute of India



NMCG-WII
GANGA BIODIVERSITY
CONSERVATION
INITIATIVE PHASE II

**PLANNING AND MANAGEMENT
FOR AQUATIC SPECIES
CONSERVATION AND
MAINTENANCE OF ECOSYSTEM
SERVICES IN THE GANGA RIVER
BASIN FOR A CLEAN GANGA**

HALF YEARLY REPORT
JANUARY – JUNE 2021



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Progress Report

January - June 2021

Project Investigators

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COMPONENT 1

SCIENCE-BASED AQUATIC SPECIES CONSERVATION AND MAINTENANCE OF ECOSYSTEM SERVICES IN THE GANGA RIVER BASIN

Habitat modification, fragmentation, invasive species, overexploitation, pollution and climate change are some of the looming threats to freshwater diversity. In addition, persistent xenobiotics, nano-particles and micro-plastics pose a toxicological risk to the freshwater ecosystem. This component aims to document the aquatic diversity of the Ganga River basin and the threats to them, for science-based aquatic species conservation planning. Such documentation would aid in the decision-making process and can facilitate the prediction of future impacts under various scenarios. In addition, the loss of individuals as a result of accidental trapping in fishnets, injury by crafts, and poaching also contribute to the decline in the population of the priority species, viz. Gangetic dolphin, otters, gharial and mugger. To address such emergent situations and to abate the loss of individuals, rescue and rehabilitation centres are being strengthened/upgraded at strategic locations along the Ganga River, through this component. Such efforts would aid in effective rescue and subsequent rehabilitation of the rescued individuals.

- A pre-monsoon ecological assessment of the eleven tributaries was carried out in January and February 2021, viz. Ramganga, Gomti, Ghaghra, Gandak, Kosi, Yamuna, Chambal, Son, Ajay, Rupnarayan and Damodar. The ecological assessment revealed that the Gangetic dolphins are distributed in most tributaries. The presence of smooth-coated otters was recorded from the Chambal, Ramganga and Ghaghra rivers.



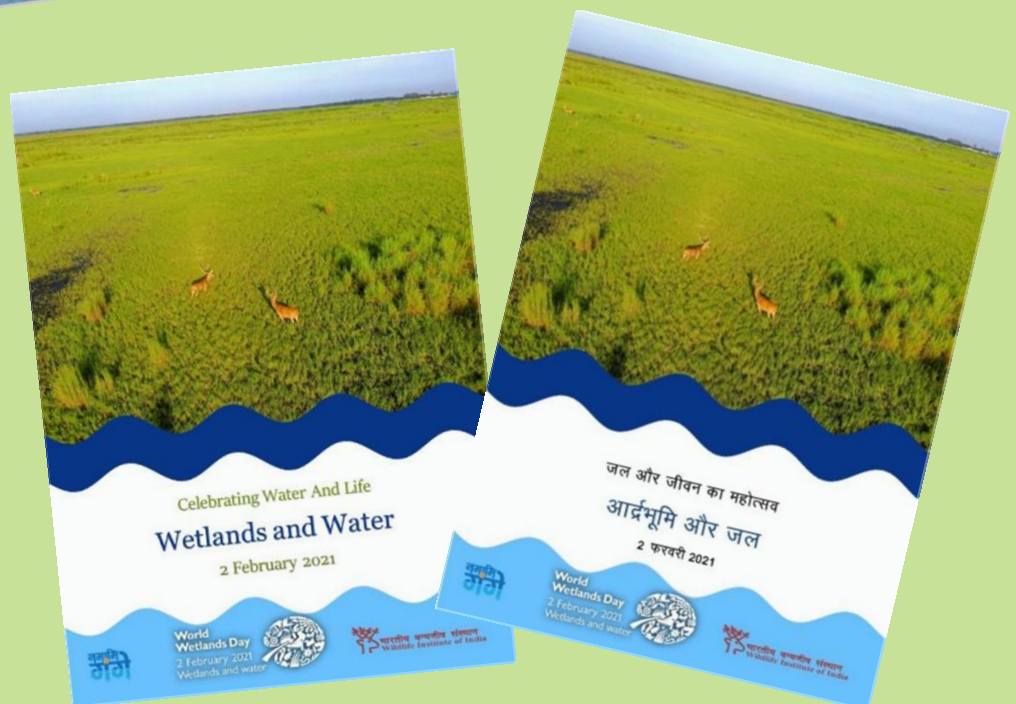
Ecological assessment

- The first photographic records of the smooth-coated otter were obtained from the Ghaghra River during the ecological assessment. Gharials were recorded from the Chambal, Yamuna, Son, Ramganga, Ghaghra and Gandak rivers. Muggers were sighted from the Chambal, Yamuna, Son, Ramganga, Gomti, Ghaghra and Gandak rivers.
- To study fish diversity, sampling sites were identified along the Yamuna, Ramganga and Gandak rivers.

- A book "Framework for Ecological Monitoring of Ramsar sites and Wetlands of India" was released on 2nd February 2021 on the occasion of the World Wetlands Day.



- Brochures in Hindi and English languages for the World Wetlands Day were distributed at various locations along the Ganga River.



- To assess genetic variability and gene flow pattern, biological samples were collected from selected fishes, turtle species, Gangetic dolphin and gharial. Genetic results of the Gangetic dolphin suggest that samples collected from different sites are genetically connected but sustain moderate genetic diversity. A new lineage of Giant river-catfish (*Spereta* sp.) was identified from the Ganga River between Munger, Bihar and Sahibganj, Jharkhand. Extremely low genetic diversity was detected in the Gharial populations studied from National Chambal Sanctuary and Katerniaghat Wildlife Sanctuary. The genetic signature of Gangetic turtle species was developed as a molecular reference database. The generated database helps in species identification as well as formulating in-situ, and ex-situ conservation and management plan to improve the rescue and rehabilitation strategies.
- Water quality parameters and heavy metal concentrations were investigated in the surface water of major tributaries of the Ganga River for the post-winter season (March-April 2021). The majority of the water quality parameters assessed in Gandak, Son, Kosi, Ghaghra and Ramganga were well within the aquatic life criteria, whereas for the Gomti and Yamuna rivers, the water quality parameters exceeded the aquatic life criteria at the majority of the sampling sites. Ecological Risk Assessment for heavy metals revealed low ecological risk at most sites in Gandak, Kosi, and Son, whereas high ecological risk, for Cadmium, Copper, Chromium, and Lead, were observed at selected sites stretches of Gomti, Yamuna, Ghaghra, and Ramganga.



Sample collection locations for eco-toxicological assessment

- Upkeep and management of the rescue and rehabilitation centres at Narora and Sarnath were carried out.



Shady plants planted inside housing facility

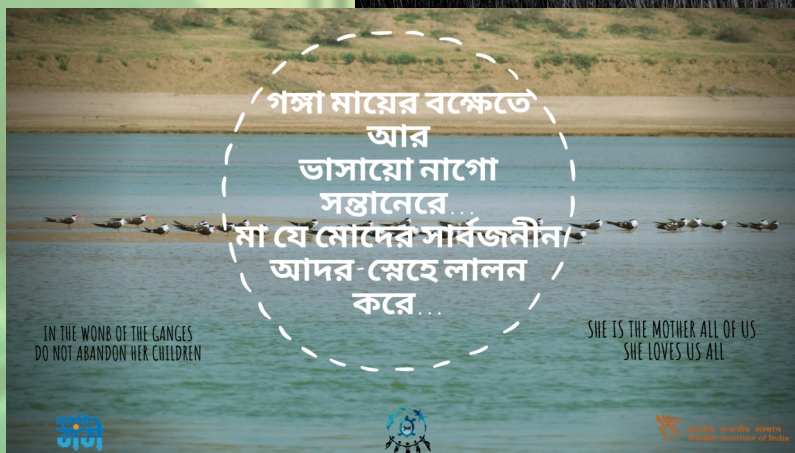


Heat proof hide for basking turtles

- Director General, NMCG, Shri Rajiv Ranjan Mishra visited the Ganga Avlokan, Haridwar, on 10th January 2021 and reviewed the activities carried out at the Ganga Avlokan and in the project.
- On 3rd January 2021, Mr UP Singh, Former Secretary, Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Government of India and Dr Sandeep Behera, Biodiversity Consultant, NMCG, visited the Rescue and Rehabilitation Centre at Narora, Bulandshahr, Uttar Pradesh. They reviewed the project activities at Narora and interacted with Ganga Praharis, and inquired about the various activities being performed by them at field sites. Fourteen Ganga Praharis were present during the meeting.



- Designed awareness posters on the burial of dead bodies on the bank of Ganga River during the COVID-19 second wave. These posters were designed in English and Bengali languages for social media.



COMPONENT 2

CAPACITY BUILDING OF THE FOREST DEPARTMENT AND OTHER STAKEHOLDERS IN MANAGING AQUATIC AND WETLAND RESOURCES

Successful implementation of the conservation action plan will depend on the capacity of the stakeholders trained in monitoring of aquatic biodiversity, management planning of wetland, rescue and rehabilitation protocols. Further, to detect any changes in habitat features and species assemblage in future, the capacity of different stakeholders including forest departments, animal husbandry departments, veterinarians and volunteers from concerned areas will be extremely critical. With this background, this component aims to developing capacities of stakeholders for effective conservation of the Ganga.

- To instil the conservation values in the young minds, the Bal Ganga Prahari programme was launched in 2020, with the initiation of Phase II of the project. From January to June 2021, 84 schools were enrolled in the Bal Ganga Prahari Programme, in which students and teachers were sensitised about the Ganga and its biodiversity through various awareness activities and programmes. Bal Ganga Prahari Corners have been identified at Jwalapur Inter College, and Inter-School, Ganga Bhogpur, Haridwar.
- Between January and June 2021, conducted three national level spearhead training programmes for the spearhead team members from different stakeholder groups, viz. the Ganga Praharis, the University Professors, the DPOs and Project Assistants from the Nehru Yuva Kendra Sangathan (NYKS).
- National level spearhead training programme for District Project Officers (DPOs) and Project Assistants (PAs) of NYKS on 'Biodiversity conservation of Ganga River Basin' was organised from 5th to 7th January 2021 at the Wildlife Institute of India (WII), Dehradun. DPOs and PAs from Uttarakhand, Uttar Pradesh, Bihar and West Bengal attended the workshop. National Spearhead training programme for Professors of Ganga River Basin on "Wetland Conservation and Biodiversity Monitoring of Ganga and its tributaries" from 9th to 11th March 2021 was organised at the WII, Dehradun, Uttarakhand. National spearhead training programme for Ganga Praharis was organised from 16th to 21st March 2021 at the Wildlife Institute of India. These training programmes are aimed at building the capacities of the personnel on various dimensions of conservation aspects, including restoration, rejuvenation and management of the Ganga River Basin.

Spearhead team	No. of spearhead members trained
Ganga Praharis	65
Professors	29
DPOs & PA NYKS	33
Total	127



National Level Spearhead Training Programme for NYKS on Biodiversity Conservation of Ganga River



National Level Spearhead Training Programme for Ganga Praharis on Biodiversity Conservation of Ganga River

- During January to June 2021, trainings on ecological survey, rescue and rehabilitation and wetland conservation aspects of river conservation were conducted. Various forest officials, Ganga Praharis, Ganga Vichar Manch, professor, teachers and students were trained in these training programmes. Some of these training were conducted online, and some were offline.
- Training workshop for the preparation of the People's Biodiversity Register was organised for the Ganga Praharis (n=67) of Bihar in Bhagalpur district in association with the Bihar Forest Department and Bihar Biodiversity Board on 16th January 2021. The training was followed by the data collection by trained Ganga Praharis, under the guidance of the NMCG-WII project team, in all thirty-eight districts of the Bihar state from 17th to 20th January 2021.



COMPONENT 3

DEVELOP COMMUNITY-BASED AQUATIC SPECIES CONSERVATION AND OUTREACH PROGRAMMES FOR THE GANGA RIVER BASIN

River conservation decision is a societal one, owing to trade-offs between competitive use of river's resources between maintaining ecological integrity as well as for sustaining the communities. Aligning local livelihoods with conservation goals is known to create a larger constituency of support for conservation, for which site-specific strategies needs to be developed. These communities should also be made aware about the role of an ecologically intact Ganga basin in enhancing the quality of life. The local communities residing along the banks of the Ganga River have high interests in conservation of the Ganga and its aquatic diversity. These local communities have shown their support to conservation initiatives for the Ganga River and some of the members of communities are now part of the Ganga Prahari cadre of trained volunteers. This component aimed to extend this trained cadre at the basin scale. The component also develops high-quality, science-based awareness and outreach material on Ganga River conservation.

- From January to June 2021, a total of 122 volunteers from the Ganga basin joined the Ganga Prahari cadre. These volunteers are from the six tributaries of the Ganga River. The Ganga Praharis have a presence in 29 districts across five Ganga basin states, Uttarakhand, Uttar Pradesh, Bihar, Delhi and West Bengal. Additional cadre of 64 Ganga Prahari Mentors have been identified.
- Between January to June 2021, a total of 205 activities categorised under 18 types were carried out in the Ganga basin states. A total of 3,818 people participated in these activities. Of these, Ganga Praharis conducted 13 types of activities in which 3,201 people participated. These Ganga Praharis rescued 14 individuals including turtles, snakes, and birds.



- Five livelihood centres were established in Uttarakhand and Uttar Pradesh. During livelihood trainings in these livelihood centres, Ganga Praharis were trained in SHG account maintenance, packaging material making, health and wellness, bakery training, prasad, candle and incense stick making and art & craft (file covers, envelopes, paper bags etc.). A total of six livelihood activities were conducted across the Ganga River states, in which 90 people were trained.



Inauguration of livelihood centre

- Shooting of *Rag Rag Mein Ganga* took place at livelihood centre, Nizampur, Muzzafarnagar on 13th February 2021. A total of 30 participants including Ganga Praharis and women from villages Katia, Nizampur, Deval and Rawali participated in the shoot.

- At Ganga Darpan Interpretation Centre, Sarnath, Varanasi, awareness activities, street plays and puppet shows were conducted for the visitors.



- Poem/slogan entries from the online "Kavya Ganga" competition were compiled into a booklet.

- "Sarpdandsh" – an awareness booklet on snakes was designed. The booklet comprises all the myths and facts people believe about snake bites and steps people should take in case of a snake bite.





NMCG

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