

**EXPEDITION – IN SEARCH OF GHARIALS AND GANGETIC DOLPHINS IN THE
RIVER HOOGHLY**

Towards the possible formation of a new

Gharial and Dolphin Conservation Reserve

Involving local communities living on the banks of River Hooghly



Initial survey work conducted 29th November, 2008 to February 21, 2009

A joint initiative of

**iREBEL , SEARCH, INNOVATIVE INDIA TOURISM PVT. LTD., AND HOOGHLY ZILLA
PARISHAD**

**SUPPORTED BY BURDWAN ZILLA PARISHAD & BMC KETUGRAM-II PANCHAYET
SAMITI**

Survey led by Tanmoy Ghosh

Team members: Suvendu Mukherjee, Ganesh Cowdhury, Suman Paul, Prabir Bhattacharya,
Mrinmoy Ghosh, Sanjay Ghosh, Sayom Mukherjee, Devjit Sil,

INTRODUCTION :-

On November 29, 2008, the day of our first visit to the island called Sabujdwip near Balagarh in Hooghly District my thought process began. A labourer working there had seen a three-foot gharial basking in the sun at the tip of the island at around eight in the morning - just before we reached there. A few more inquiries produced two more reports of gharials from the same area – one two feet long and another four-and-a-half feet long. The latter had been entangled in a fishing net and died. After 1999-2000 there had been no big floods in the area and I couldn't imagine how these gharial babies had arrived at this place and from where.

Because the number of breeding adult gharials in the wild is suspected to be around 200 or less, I realized the urgency of finding and protecting the adults - and potentially breeding pairs - in the area.

On November 30, we contacted Mr. Asit Patra, honourable Sabhadhipati of the Hooghly Zilla Parishad and made a proposal for financial and logistical support for a preliminary survey of the presence of gharials as well as other species such as Gangetic dolphins and waterfowl, in the vicinity. He took immediate action, providing the necessary help to launch the survey. We began collecting reports of gharial sighting cases, starting with the local people from Kharmargachi to the Guptipara area. When to our surprise we received 14 more reports of gharial sightings in the area, we realized the potential size and significance of the survey and approached Mr. Abhra Bhattacharya, a director of Innovative India Tourism Pvt. Ltd. for additional support. Innovative India Tourism also realized the urgency and importance of the project and extended immediate support to us.

Now, after the three months of preliminary study work, we have more than 40 reports of gharials in a 170km stretch of the Ganges, and photographs of two basking gharials. We found several suitable habitat sites throughout the study area which require immediate conservation initiative. We concluded this preliminary work with scores of questions in mind that will require extensive and prompt research to be answered.

ACKNOWLEDGEMENTS :-

For a professional naturalist, working for the conservation of a critically endangered animal like the gharial is a rare gift but also a great challenge. Therefore, I want to thank all those who made it possible. Expressing my gratitude to all individual, would require more space than this report, so I duly apologize to all those not named here. Your contributions were indispensable to this study.

Special thanks goes to the Honourable Shabhadipati of Hooghly Zilla Parishad , Mr. Asit Patra, without whose support and encouragement in every possible way this project would not have been possible.

I wish to thank the representatives of Innovative India Tourism Private Limited, especially Abhra Bhattacharya, Debotosh Bhattacharya, Sagar Banerjee, Kishor Paul, for their wholehearted support.

The study would have been inconceivable without the generous help and information from all the villagers, boat conductors, and fishermen working and living along the Burdawan and Hooghly stretches of the Ganges.

I am also indebted to Debasish Ganguly, Lee Ann Merrill, Mr. V.K Yadav, Mr. Subrato Pal Chowdhury, Mr. Dipak Mitra, Mr. Joydip & Suchandra Kundu, without whose contributions (logistical and informational support, office work and encouragement) the field work would not have happened.

IMPORTANCE OF THIS PRELIMINARY BIODIVERSITY STUDY: -

According to the IUCN Red Data List, the gharial (*Gavialis gangeticus*) is a critically endangered species. Fewer than 200 breeding adults survive in the wild, and there are indications this number is declining precipitously. It has been extirpated from most of its historic range, including from Pakistan, Bangladesh, Bhutan, and Myanmar. It can now be found only in highly fragmented habitat in India and Nepal.

In light of these dismal prospects, establishing the presence of gharials in areas of their historic range where they have not been officially documented for over 40 years is tantamount to granting the species a possible reprieve from oblivion. Of course, it is crucial to also identify and protect suitable breeding habitat for newly identified specimens if they are to have a chance to persist and flourish, so this study necessarily includes an assessment of the extent and quality of potential gharial habitat within the study area. Equally vital is addressing threats to specimens or the viability of its habitat. In this study, we have made an initial identification of such threats .

Specific goals of this study were to :

- 1. Directly sight and photograph gharials**
- 2. Preliminarily identify suitable gharial habitats;**
- 3. Document the presence of other faunal species to augment scant knowledge of wildlife in the study area**
- 4. If gharials are observed, raise awareness of locals to initiate and sustain protection activities**

METHODOLOGY: -

Methodological steps for this study were as follows (not in strict chronological order):

- Identify initial study area based on anecdotal reports
- Research and evaluate pertinent data such as satellite photos/maps
- Consult with area locals in the field (anecdotal evidence)
- Conduct brief reconnaissance forays to locales of reported gharial sightings
- Establish final study area
- Observe and document entire study area by boat (Ganges River mainstream) and on foot (walking banks)
- Document mid-river islands (potential critical habitat)
- Take photographs
- Raise awareness among locals of significance of gharial presence and enlist them in protection activities
- Disseminate study findings

DURATION

This survey was initiated on November 29, 2008, and work is ongoing. Locating gharials is extremely challenging because they are nocturnal, spending most of the day submerged (except during winter basking, which was the reason for planning this study for winter). In the study area they are additionally elusive due to high levels of passenger and fishing boat activity on the Ganges. Since opportunities for the photographic documentation necessary to a biological study are rare and unpredictable, study time would ordinarily be longer. Funding constraints dictated that we conclude and report on this first study phase as of late February 2009.

TARGET FAUNA:-

Due to the brief time frame of this initial study phase, we aimed to pinpoint occurrences of some specific fauna and faunal groups, including of course gharials. We included other species with potential to support responsible conservation tourism in the area and thus provide income to locals, including In this first phase we focused on:

1. Gharials
2. Mammals - Especially Gangetic dolphins, smooth-coated otters, and small cats
3. Birds

STUDY AREA :-

(Due to certain unavoidable reasons we are not including any maps of the areas, along with this report)

The first reports of gharial sightings we received were from Hooghly District near Balagarh, so we focused initially on this area. After studying satellite maps of the Ganges mainstem and identifying additional potential gharial habitat, we had sent our team representatives to Nabadwip, Patuli, Agadwip and several additional locales in Burdwan District to do visual surveys and gather information from locals on possible sightings. Based on the results of these forays, we expanded our study area to include the Hooghly District from Tribeni to the Burdwan District just north of Belun – an approximately 170 km stretch of the Ganges.

Our team's first gharial sighting was made at Kuntighat. On February 9, 2009, we photographed two gharials at Natungram, about 20 km north of Belun.

Within the study area we located several important habitat areas, including inaccessible islands, that are supporting thousands of migratory and resident birds; mammals including smooth-coated otters, jackals, Bengal foxes, jungle cats, fishing cats, and dolphins; and reptiles such as terrapins and tortoises. These islands also appeared to be suitable gharial nesting sites.



The island near Majherchar of Hooghly where we got first gharial



The island opposite to Sabujdwip – an ideal basking site of gharials and place for thousands of migratory birds.



Khayaramarir Char of Hooghly – the maximum reports of gharials are coming from this area. It is one of the finest habitat for thousands of migratory birds, gangetic dolphin , small cats and smooth coated otter.

Khayaramarir char of Hooghly where we got maximum gharial reports and a very good birding place.



Islands in north of Sabujdwip in Hooghly district ideal habitat of gharials and birds.-----



Patuli and Agradwip area of Burdwan where we got reports of gharials.



Natungram of Burdwan district gharials with lesser whistling ducks



COMMUNICATION AND AWARENESS RAISING:-

Closely involving those who live and work on and around the Ganges was vital to our study's success. Those who make their living fishing and carrying passengers and cargo up and down the river, and those inhabiting villages on the banks, acted invaluable as our eyes and ears on the ground to pinpoint where gharials likely had been and where they might be presently found. From the outset of our work, we made contact with every person we encountered on the river to inform them of what we were looking for (including distributing copies of an informational brochure on gharials), what actions they should take if they encountered a gharial (including contacting us via mobile phone), and the necessity of preventing the gharials from being disturbed. We encouraged everyone we spoke with – over 200 people - to spread the word with others whose livelihood is directly involved with the river.



We also targeted, gathering places, such as fish markets to maximize the number of people we reached. Overwhelmingly, everyone we spoke with was curious about the gharials and our study work and was eager to provide whatever information he had. A few individuals, especially those who had had direct encounters with gharials were initially wary of involving themselves in our effort due to fear of possible enforcement actions by the Forest Department. Once we'd gained their confidence, they related stories of gharials swimming and basking in the sun, and several incidences of gharials entangled in fishing nets. These encounters had taken place anywhere from five years to 12 days previously.

Finally, we sought input and support from political leaders that was necessary to ensure that our activities were conducted with maximum efficiency, cooperation and safety.

Despite no lack of anecdotal reports of gharials, the challenge of succeeding in locating and photographing them was daunting. On January 12, 2009, we got our first glimpse of a gharial at Majherchar near Kuntighat at dusk, on the riverbank just on water's edge. When our boat was within about 250 mt. of it, it jumped into the water. Because it was near dark and the gharial moved

quickly, we were unable to photograph it. We saw another on January 14, but it was outside photographic range and again nearly dark out there.

Finally, in February 2009, a local from Belun related that in the prior one and half months a sighting had been reported in Char-Sujapur - a gharial had occupied the same basking spot for 10 to 15 days in a row. The team immediately decamped for this spot. On February 8, we saw our first gharial during basking in the broad daylight there, and on February 9, we photographed two. Without delay we convened three meetings of locals to create a committee that could sustain mechanisms to directly protect the gharials from harm or undue disturbance, that could provide ongoing useful information to the team, and that would plant the seeds for a sustainable source of income based on supporting the gharials' presence (responsible tourism).

A similar meeting was held on February 15th at the site of our most dramatic gharial sighting – a 14-foot female basking open-mouthed on a high mid-river sandbar, her whole body visible for hours as flocks of lesser whistling ducks came and went. Her clearly visible presence attracted hundreds of curious spectators on the riverbank. After team members spent part of the day watching the female from a hide on an adjacent island, we crossed to the bank for a previously arranged meeting with locals. Our aim was to create another gharial monitoring and protection committee at this locale, particularly since it appeared that the crowds of viewers and thus the potential for disturbance would proliferate.



The upshot of our message, delivered to eagerly listening children, fishermen, boat conductors and community leaders, was that the gharials could present a source of long-term income, but only if the conditions allowing their ongoing presence were as strictly maintained as possible. This included steering boat traffic well away from any gharials, posting guards to ensure that no one disturbed or heckled the gharials (we witnessed a number of spectators throwing rocks at the female, probably to provoke her into moving), and otherwise promoting orderly viewing along the river. We gave them a device to both promote order and to sustain the guards: a pair of binoculars with which spectators could view the gharial for a nominal fee, and using the proceeds to pay the guards. We also gave them a journal to records all pertinent information: presence and movement of gharials, visitors of note to the site, etc.



STUDY OUTCOMES

Study outcomes, as further described in subsequent report sections, are as follows:

1. Directly observed four gharials – including at least two females
2. Photographed two gharials – one female nine and half feet long, one female 14 feet long
3. Recorded (video and audio taped and photographed) close to 40 anecdotal reports of gharial sightings/encounters reports by locals
4. Established four distinct possible/actual gharial habitat areas along 170 km of Ganges in the Hooghly and Burdwan Districts
5. Observed habitats supporting thousands of migratory and resident birds, including ruddy shelduck, lesser whistling duck, northern pintail, gadwall, common pochard, red-crested pochard, and, possibly for the first time in the study area, bar-headed goose and greylag goose.
6. Identified six distinct habitat areas supporting the maximum number of Gangetic dolphins
7. Raised locals' awareness of gharial presence and its significance, and laid groundwork for locals' involvement in and responsibility for ongoing protection of gharials

SPECIES SIGHTINGS

Gharials :-



To maximize our chance of sighting gharials during our field survey, we began each day's boat journey before dawn so that we could reach our targeted spots before sunrise. We also tried searching at night, but with no results other than our two dusk sightings. It was not until late in the survey period that we were able to photograph the two basking gharials in the Natungram area near Ketugram and Belun in the Burdwan district. According to the locals, four gharials had been present in the area for the last four months, but we saw only the two.

Over the course of the three-months survey we identified four regions of maximum gharial occurrence, as evidenced by both anecdotal reports and our own team's sightings: Sabujdwip and Balagarh of Hooghly district; Nabadwip; Patuli-Agradwip; and Ketugram II block of Burdwan District.

Amongst the four areas, the maximum number of reported sightings, of gharials from one-foot long babies to 17-foot males, came from Balagarh and surroundings. Also within this area we identified more than ten islands with potential of optimal nesting and basking grounds for gharials.



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There is, however, heavy human traffic from fishing and other boating activities, which we suspected was the cause of our difficulty in spotting gharials during the day. The high level of human activity also engenders human/gharial conflict, due to the perception that the gharials might, as with other crocodiles, pose a danger. Most reported cases of gharial deaths due to entanglement in fishing nets were from Balagarh.

Gangetic Dolphins



During our survey we were also looking to document Gangetic dolphins; we counted 36 dolphins in total over the 170 km stretch of river. At six locations in the study area we observed congregations of between four and eleven dolphins. Our best sightings from the standpoint of proximity to and number of individuals were at Ketugram II block in Burdwan and Khayaramarir char near Kharmargachi in the Hooghly District.

Small Cats

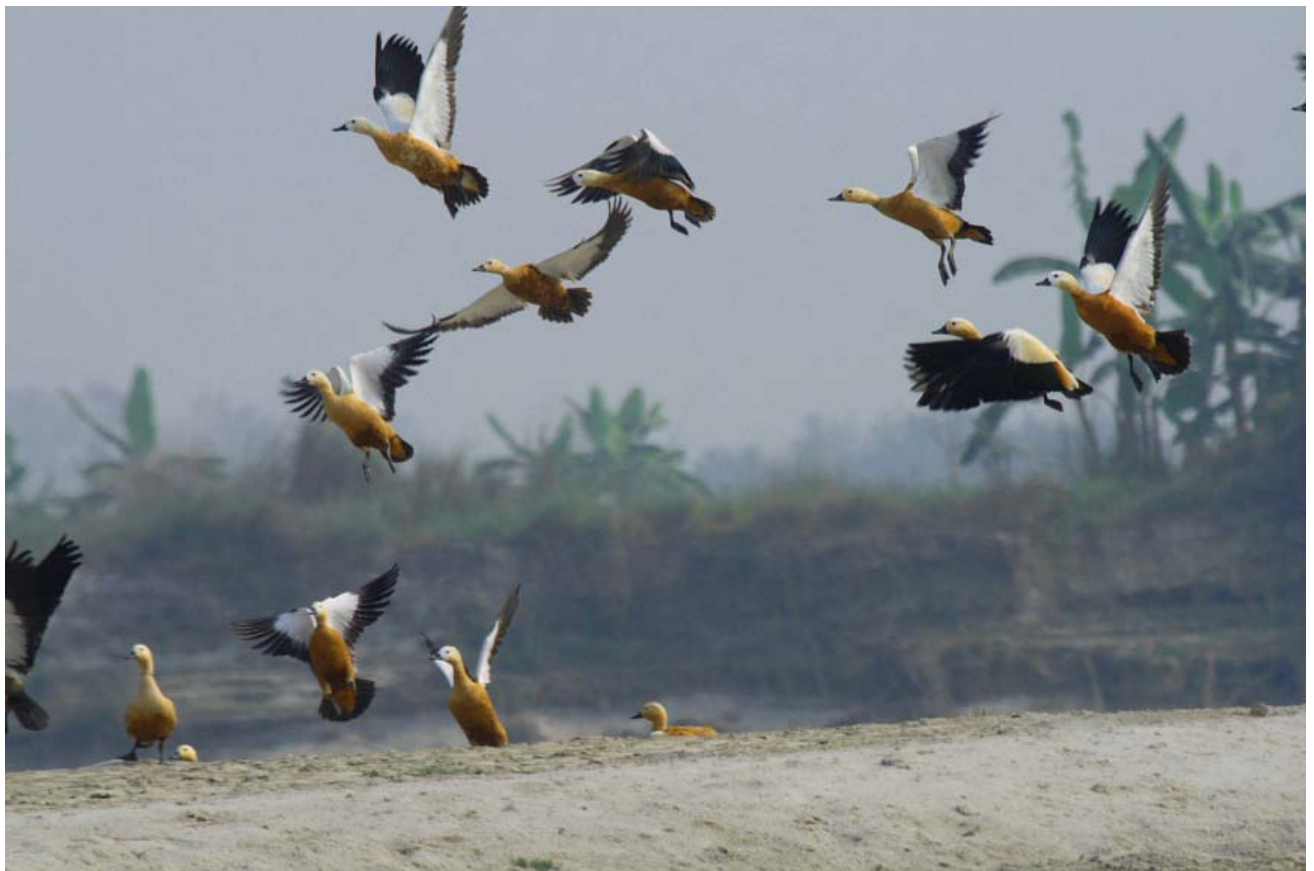
Two small cat species – Jungle Cat the Fishing Cat - inhabit the study area. We made no sightings, but frequently observed footprints.

Smooth-Coated Otter

We received several reports of occurrence of smooth coated otter in the study area. The best otter habitat we found was at Khayaramarir char in Hooghly District.

Birds

We observed twelve areas in the study zone with thousands of migratory birds of various species; a preponderance of gharial sighting reports also clustered around these areas. It appears that protection of these areas will benefit both the gharials and bird species.





THREATS TO GHARIALS IDENTIFIED

1. Fishing – specially with gill nets and set nets. Juvenile gharials often get entangled into it and die .
2. Destruction of sandbanks for the use in Brick factories
3. Disturbance of human being during basking in the sun
4. Industrial pollution
5. Perception that gharials are man-eaters like other crocodile



Set nets and gill nets



Industrial pollution



Illegal liquor factory

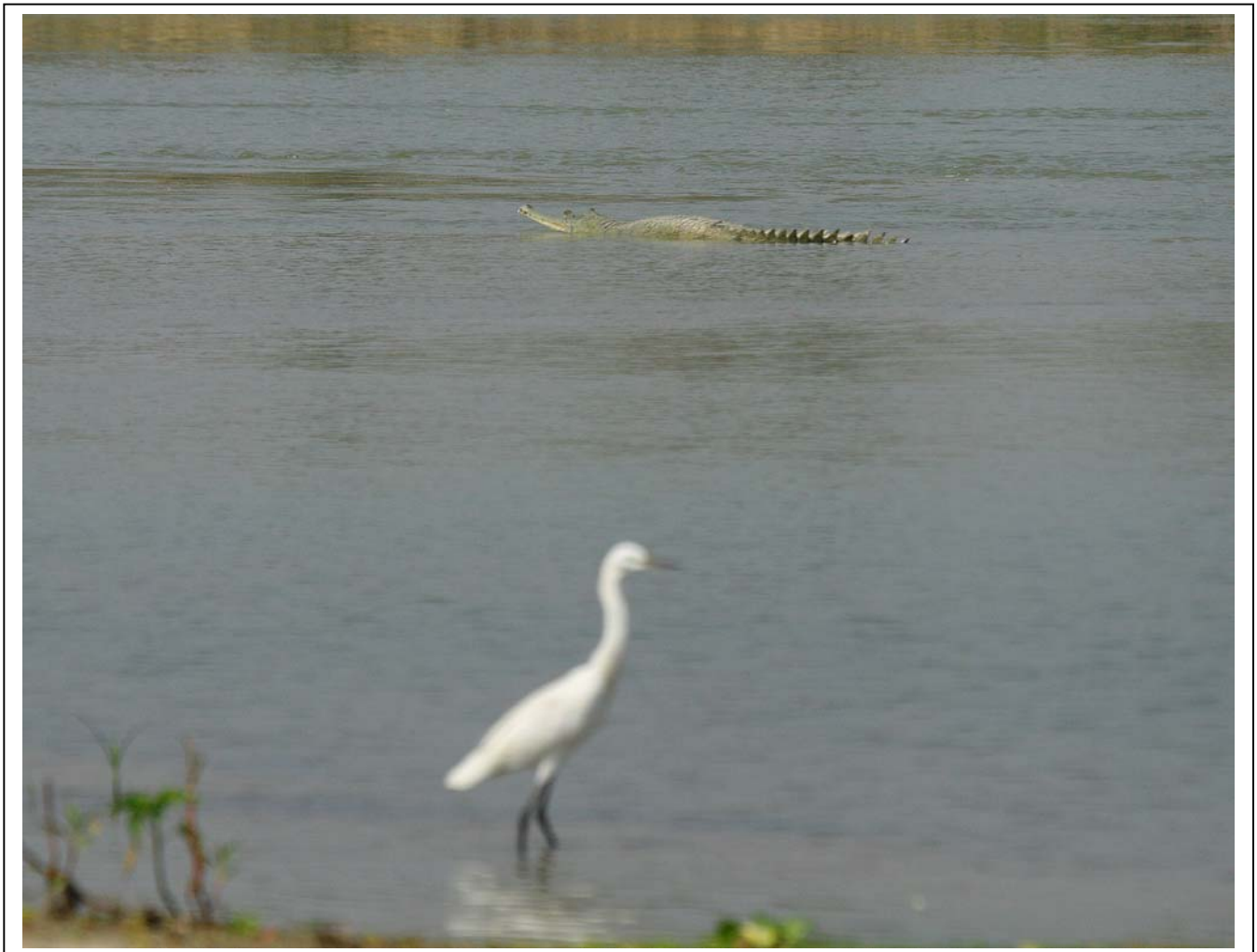
Habitat loss for natural and human activities



Hunting

QUESTIONS ARISING FROM THIS PRELIMINARY SURVEY

1. Have the gharials we saw and heard about been living in the study area all along, or did they recently migrate from some upstream area of the Ganges ?
2. If they migrated from upstream what is the possible route of that migration?
3. Is there any sustainable population in the study area?
4. Is it an ecotype?
5. What is the actual number of gharials present in the area?
6. Are there any breeding pairs?
7. Are there any nesting grounds in the study area?



THE TEAM:-



Inside the hide

TEAM LEADER

Tanmoy Ghosh (iREBEL)

- wildlife photographer and researcher
- recipient of 15 awards from various national and international organizations
- former field supervisor for WWF India's man-animal conflict project in the Sundarbans Tiger Reserve
- coordinator/team leader for biodiversity surveys and research projects in eastern and northeastern India
- wildlife resource person for BBC Natural History Unit and various other production houses
- 14 years experience in wildlife conservation and nature study
- involved as a naturalist with five reputed organizations

FIELD SUPPORTS

Suvendu Mukherjee (SEARCH)

- photographer, social worker, specialist in archeological photography

Suman Paul (iREBEL)

- naturalist, award-winning wildlife photographer, working for wildlife conservation- related issues for the past 12 years

Ganesh Chowdhury (iREBEL)

- naturalist, student, working for various conservation issues for the last five years - excellent in spotting and ethology

Mrinmoy Ghosh (iREBEL)

- zoologist, social worker, teacher, working for various conservation issues for more than five years

Sanjay Ghosh (iREBEL)

- teacher, social worker, excellent in field management and camp management

Sayom Mukherjee (SEARCH)

- student , naturalist.

Prabir Bhattacharaya (iREBEL)

- student, naturalist

Devjit Sil (iREBEL)

- computer specialist, accountant, journalist

Debasis Ganguly (iREBEL)

- government service holder, social worker

Hasibul (iREBEL)

- social worker, now head of the committee protecting the gharials near Natungram

Ijjajul (iREBEL)

- boat owner, member of the committee protecting gharials near Natungram