

Dolphin Yatra 2014: community awareness campaign on Gangetic dolphin and river ecosystem conservation in Kulsi River



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Introduction:

The Kulsī River (Fig-1) is in the Kamrup district of Western Assam. The river originates from Meghalaya where it is known as the Khririver. At Umkiam, about 12 km from Meghalaya, the river enters the Kamrup district of Assam and from here is known as the Kulsī River. About 15 km from Umkiam the river reaches Kulsī village in Assam. It finally discharges into the Brahmaputra at Nagarbera, which is about 76 km downstream from Kulsī village.

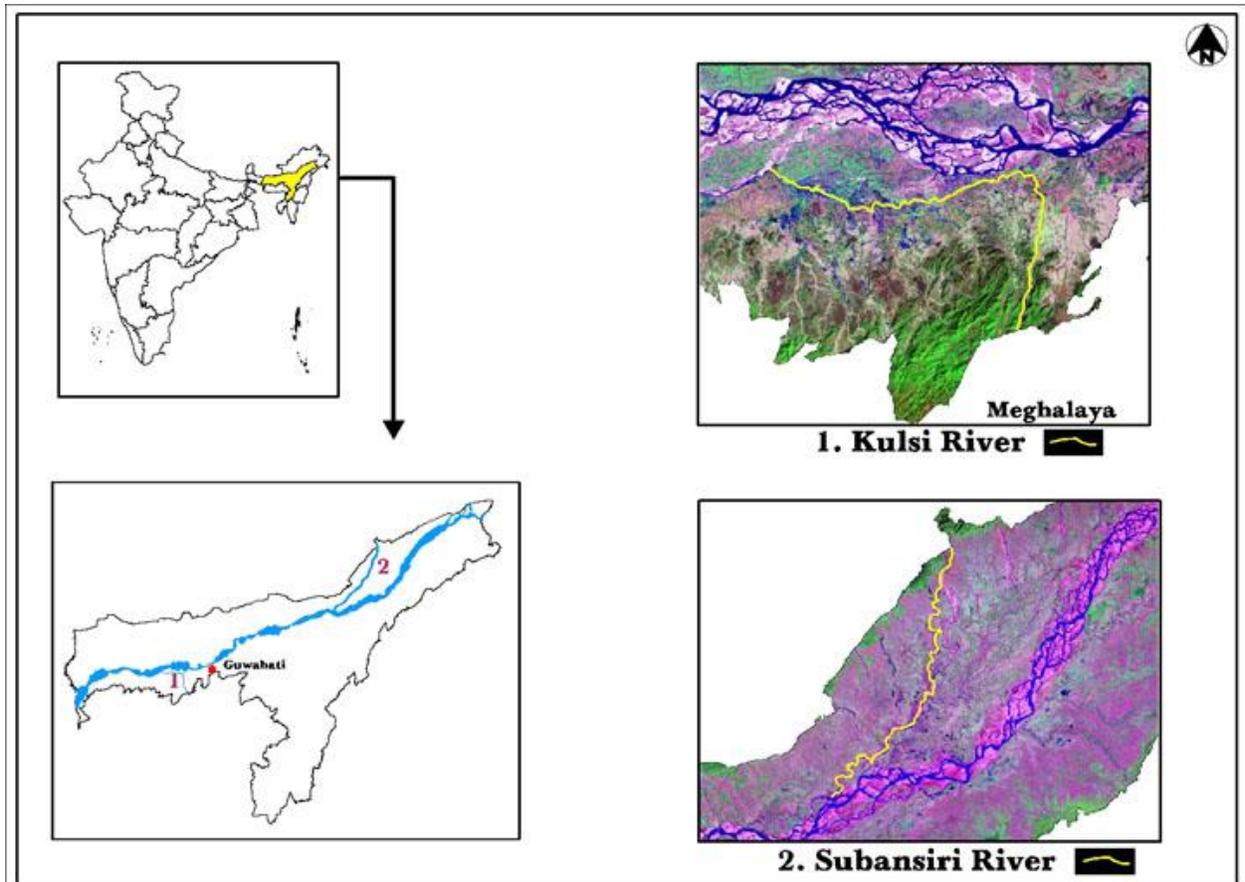


Fig-1: Location map of Kulsī River

Kulsī River (Fig-2) is the home of a residential population of Gangetic dolphin (*Platanista gangetica gangetica*). Wakid et. al. (2013) estimated maximum abundance of the species as 40 individual in this 70 km stretch of the river. In winter season, the average width of the river becomes 43.25 m (\pm 8.8) and widely used by the local communities for fishing, irrigation, sand mining etc, for which the dolphins of this river are under severe anthropogenic pressures. The dolphins of this river in winter season concentrates in selected deeper pools because of low water depth (average 2.15 m \pm 0.09). Therefore, due to low water depth and width as well as

increased anthropogenic pressures, the dolphins of Kulsī River remains at high risk during winter season. In this condition, community awareness campaign to save the dolphins and their habitats is the only option. For this reason, we conducted a massive community awareness campaign in and around dolphin habitats of Kulsī River in February, 2014 as the first part of 'Dolphin Yatra'.



Fig-2: Kulsī River

Methodology:

Community awareness campaign in Kulsī River was conducted from 1st to 13th February in 24 sites in the bank of the river of Kamrup district. A 7-member trained education team performed the entire awareness campaign. The performing sites were identified based on the dolphin survey results in 2012-13. The team conducted talks through poster presentation and performing drama on dolphin and river ecosystem conservation. Following tools were used during this awareness campaign:

- (a) **Booklet:** This contained general information about dolphins with detailed illustrations in Assamese language (Fig-3).
- (b) **Poster:** A pictorial poster was prepared showing two contrasting situations for the river dolphin. The first illustration depicted an ideal dolphin habitat with a healthy aquatic ecosystem, the second a disturbed dolphin habitat and threats to their survival (Fig-4).
- (c) **Leaflet:** One leaflet was prepared with a general description of Gangetic dolphin and an appeal to the community for its conservation (Fig-5).

(d) **Drama:** Drama was prepared, focusing on the threats to and causes of dolphin population decline in the Brahmaputra river system. A team of six drama artists participated in this street drama (Fig-6).

Before and after the awareness campaign the team conducted questioner survey among the audiences to understand the dolphin and river ecosystem conservation awareness level among the participating audiences and performance of the awareness campaign (Fig-7).

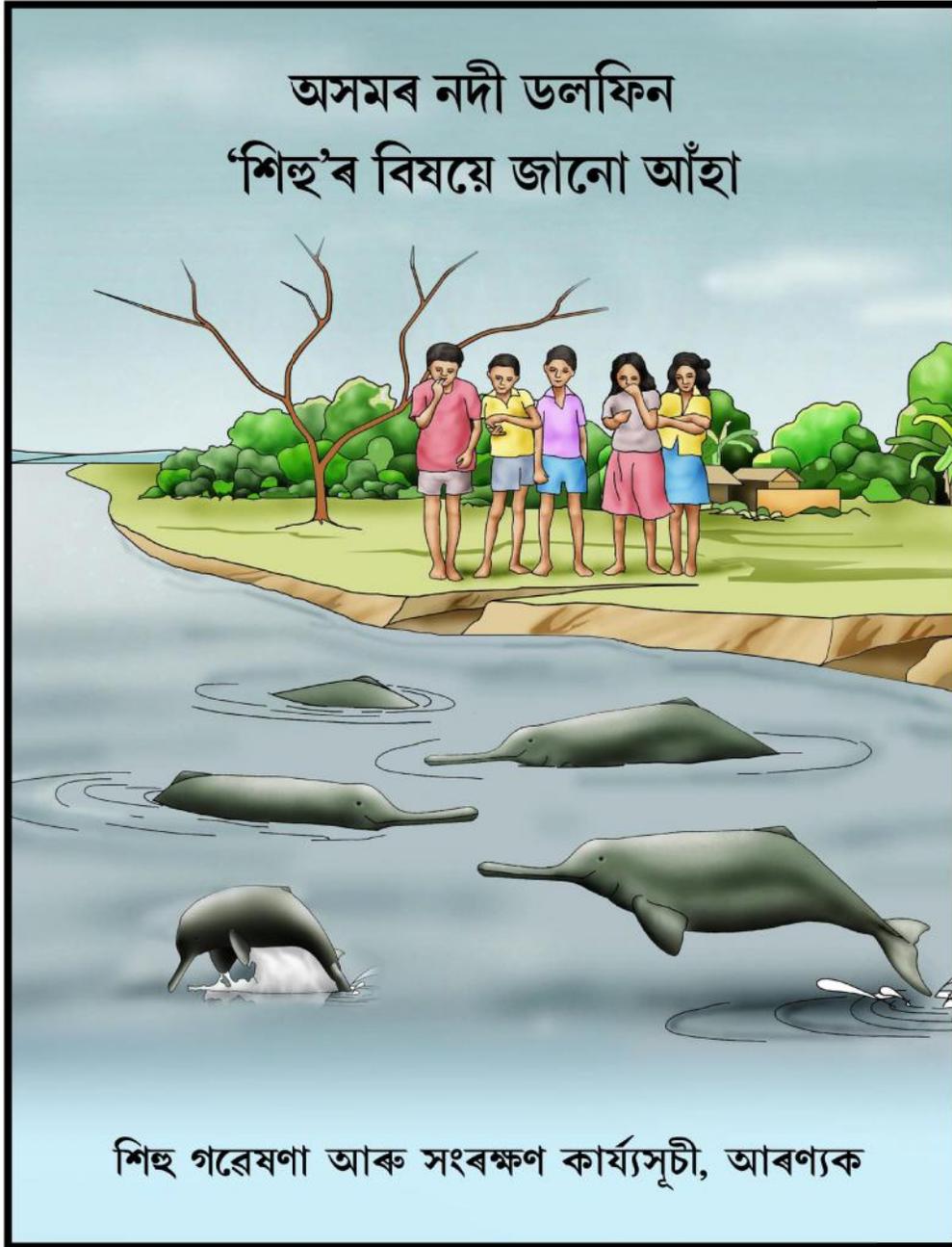


Fig-3: Front page of the booklet

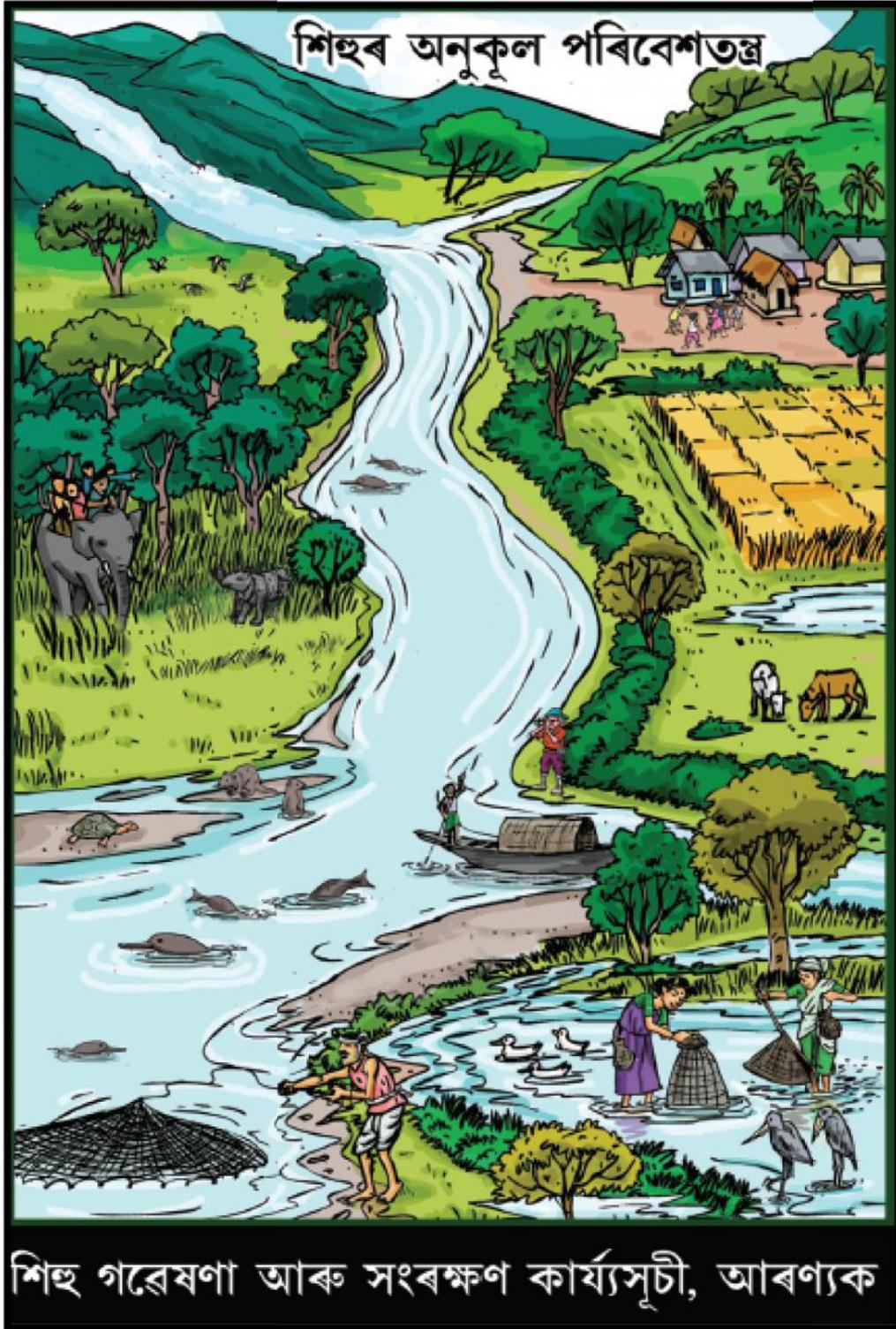
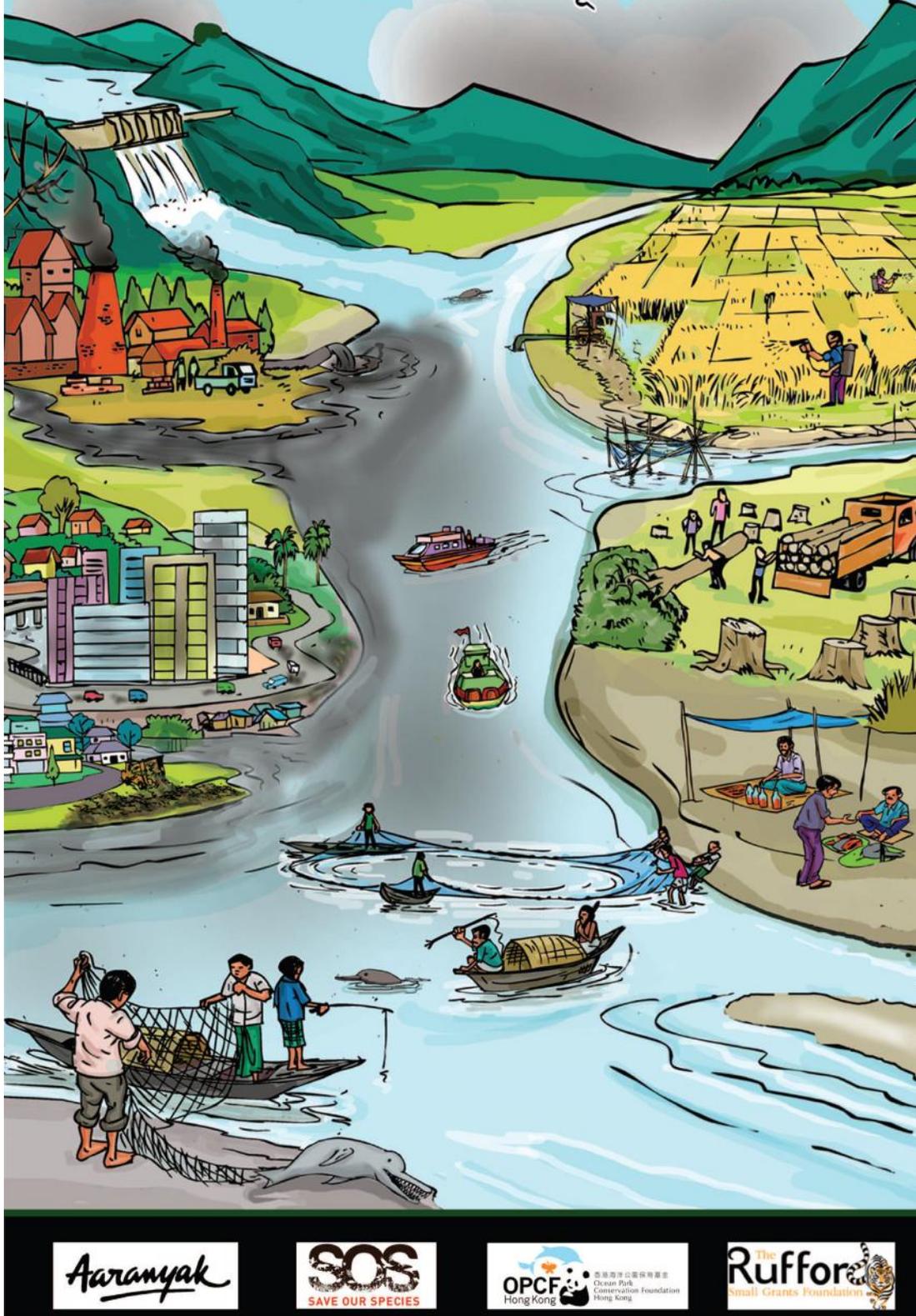


Fig-4a: Postures-1: showing the suitable habitats for Gangetic dolphins

শিহৰ প্ৰতিকূল পৰিবেশতন্ত্ৰ



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Fig-4b: Postures-2: showing the disturbed habitats for Gangetic dolphins

অসমৰ নদী ডলফিন 'শিহু'ক সংৰক্ষণ কৰো আহক



শিহু গৱেষণা আৰু সংৰক্ষণ কাৰ্যসূচী, আৰণ্যক

অসমৰ নদী ডলফিন 'শিহু'ক সংৰক্ষণ কৰো আহক

অসমৰ ব্ৰহ্মপুত্ৰ আৰু ইয়াৰ উপনদীসমূহত পোৱা শিহু (Gangetic dolphin: *Platanista gangetica gangetica*), পৃথিৱীত পোৱা মাত্ৰ চাৰিবিধ নদী ডলফিনৰ এবিধ। ইয়াক ভাৰত-নেপাল আৰু বাংলাদেশৰ গঙ্গে-ব্ৰহ্মপুত্ৰ-মেঘনা আৰু কৰ্ণামূলী নদীত পোৱা যায়। বৰ্তমান বিশ্বত ইয়াৰ সংখ্যা ২০০০ তকৈ কম। চকুৰে নোদেখা এই নদী ডলফিনবিধ দীঘলে প্ৰায় ২.৫ মিটাৰ আৰু ওজন প্ৰায় ৮৫ কেজি হয়। ইহঁত স্তন্যপায়ী প্ৰাণী। সেয়ে ইহঁতে পোৱালী জন্ম দিয়ে তথা উশাহ ল'বলৈ পানীৰ ওপৰলৈ ওলাই আহে। শিহু অন্ধ। সেই বাবে ইহঁতে Echolocation পদ্ধতিৰে চলাচল আৰু খাদ্য আহৰণ কৰে। শিহু সৰ্বাধিক ২৮ বছৰলৈকে জীয়াই থাকে।

ৰাষ্ট্ৰীয় আৰু আন্তৰাষ্ট্ৰীয় স্তৰত শিহু এবিধ যথেষ্ট গুৰুত্বপূৰ্ণ প্ৰাণী। ই অসম আৰু বিহাৰৰ 'ৰাজ্যিক জলচৰ প্ৰাণী' হোৱাৰ উপৰিও ভাৰতৰ 'ৰাষ্ট্ৰীয় জলচৰ প্ৰাণী'। তাৰোপৰি ভাৰত চৰকাৰ কন্যাপ্ৰাণী সংৰক্ষণ আইন (১৯৭২ চন) অনুসৰি ই বাঘ, গঁড়ৰ দৰে ১ নং তালিকাভুক্ত প্ৰাণী। আন্তৰাষ্ট্ৰীয় স্তৰত শিহু এবিধ 'বিলুপ্ত প্ৰায়' নদী ডলফিন। পৰিপাৰ্শ্বিক দিশৰ পৰাও ই অত্যন্ত গুৰুত্বপূৰ্ণ, যিহেতু ইহঁতে জলজ পৰিবেশতন্ত্ৰৰ খাদ্য পিন্ধিমিডৰ সৰ্বশ্ৰেষ্ঠ শিখৰত থাকি সমগ্ৰ জলজ পৰিস্থিতিতন্ত্ৰটোকে নিয়ন্ত্ৰণ কৰে, যিদৰে বাঘে স্থলজ পৰিবেশতন্ত্ৰ নিয়ন্ত্ৰণ কৰে। সেইবাবে শিহুক 'জলজ পৰিস্থিতিতন্ত্ৰৰ বাঘ' বুলি কোৱা হয়।

এসময়ত অসমৰ ব্ৰহ্মপুত্ৰ নদী আৰু ইয়াৰ প্ৰায়সংখ্যক উপনদীতে শিহু পোৱা গৈছিল যদিও বৰ্তমান ব্ৰহ্মপুত্ৰ নদীৰ দীৰ্ঘতম অংশত আৰু কামৰূপ জিলাৰ কলহী নদীত তথা লক্ষীমপুৰ জিলাৰ সোৱণশিৰি নদীত মুঠ ৩০০ মান শিহু পোৱা যায়। তেলৰ বাবে বন কৰা, জালত লাগি মৰা, বাসস্থানৰ সাল-সলনি, নদীৰ গভীৰতা হ্রাস, খাদ্যৰ (মাছৰ) অভাৱ আদিৰ বাবে ইহঁতৰ সংখ্যা অসমত দ্ৰুত গতিত হ্রাস পাইছে। ইয়াৰ লগতে যোগ হৈছে শেহতীয়াকৈ অসম আৰু অৰুণাচলত গঢ়ি উঠাৰ কিচৰা প্ৰায় ১৬০ টা নদীবাধ। এই সকলো সমস্যা মিলি অসমৰ গৌৰৱ তথা বিশ্বৰ ভিতৰতে বিলুপ্তপ্ৰায় নদী ডলফিন 'শিহু'ক এক ভয়াবহ সংকটৰ মুখলৈ ঠেলি দিছে, যাৰ বাবে অদূৰ ভৱিষ্যতে এই গুৰুত্বপূৰ্ণ প্ৰাণীবিধ ব্ৰহ্মপুত্ৰ নদীতন্ত্ৰৰ পৰা নিঃশেষ হৈ যোৱাৰ সম্ভাৱনা প্ৰবল হৈ পৰিছে - যেনেদৰে ২০০৬ সনত নিঃশেষ হৈ গ'ল চীনৰ ইয়াংজে নদীত পোৱা অন্যবিধ নদী ডলফিন 'বাইজি'।

অসমৰ অন্যতম পুৰণি আৰু বৃহৎ পৰিবেশ সংৰক্ষণকাৰী অনুষ্ঠান 'আৰণ্যক' - এ এই গুৰুত্বপূৰ্ণ নদী ডলফিন বিধৰ সংৰক্ষণ কৰিবলৈ ২০০৫ চনৰ পৰাই 'শিহু গৱেষণা আৰু সংৰক্ষণ কাৰ্যসূচী'ৰ জৰিয়তে এক নিৰবিচ্ছিন্ন আৰু শৃংখলাবদ্ধ প্ৰচেষ্টা চলাই আহিছে, যাৰ দ্বাৰা অসমৰ শিহুৰ সংখ্যা, বিস্তৃতি, সংৰক্ষণৰ অৱস্থা, সংকটৰ কাৰক আদি জানিব পৰা গৈছে। তাৰোপৰি, স্থানীয় নদী কাষৰীয়া জনসাধাৰণৰ সহযোগত গুৰুত্বপূৰ্ণ শিহু আবাসস্থলৰ সংৰক্ষণ, জনসচেতনতা বৃদ্ধি আদি কৰি আহিছে।

এই এলেকাৰ এজন পৰিবেশ সচেতন ব্যক্তি হিচাপে আপুনি এই সংৰক্ষণ প্ৰচেষ্টাত জড়িত হ'ব বিচাৰে নেকি? তেখেত আহক, আমাৰ সৈতে যোগাযোগ কৰক আৰু বিশ্বৰ ভিতৰতে গুৰুত্বপূৰ্ণ এই নদী ডলফিন 'শিহু'ক সংৰক্ষণৰ প্ৰচেষ্টাত এজন সক্ৰিয় সদস্য হওক।

আমাৰ টিকনা

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Fig-5: Dolphin leaflet in Assamese language



Fig-6: Drama performance on dolphin conservation

Results and Discussion:

The awareness campaign was started on 1st February and completed on 13th February, 2014. Total 24 awareness campaigns were conducted in 24 sites in the river bank of Kulsri River. Total 3509 community people were participated in this awareness campaign with 1986 students, 778 women and 745 men including fishermen. Total 2885 education materials (poster, booklet, leaflets) were distributed among the participants. Total 356 questioner survey were conducted including both before and after the awareness campaign (details in Table-1)

Table-1: Summary of awareness campaign conducted in Kuls River

Date	Place	Participants				Education materials distributed
		Students	Women	Men including fishermen	Total	
01-02-2014	Kukurmara	110	10	10	130	85
	Madhupur	15	10	10	35	32
02-02-2014	Jorabri	30	70	30	130	121
	Panikhathi	26	32	35	93	80
	Aag-gumi	62	44	41	147	105
03-02-2014	Natun chaportoli	65	30	44	139	113
	Maj-Gumi	41	22	28	91	77
	Puthimari	33	37	42	112	95
05-02-2014	Sampupara School	263	22	25	310	298
	Sampupara pathar	40	53	33	126	88
	Singrimari	41	58	53	152	132
08-02-2014	Samariya	188	12	24	224	193
	Puthimari	85	30	42	157	120
10-02-2014	Old Malibari	39	32	28	99	67
	Mandia	31	26	13	70	52
	Malibari High School	298	14	22	334	312
11-02-2014	Jaljali LP School	121	22	18	161	134
	Badati Pathar	96	43	39	178	136
12-02-2014	Dukushi	53	20	18	91	73
	Nagarbera	62	12	17	91	78
	Paharpara	42	35	27	104	85
13-02-2014	Bhatipara	105	32	37	174	107
	Ghuramara	31	26	24	81	51
	Krishnapara	109	86	85	280	251
Total		1986	778	745	3509	2885

Results of questioner survey:

Out of 365 questioner survey on the learning of the community people from the conducted awareness campaign before and after, we got following results.

1. What is Gangetic dolphin?

76.67% respondents gave correct answer before the program while 98.86% respondent gave correct answer after the poster presentation and drama presentation.

2. How many river dolphins are there?

Only 15.56% respondents gave correct answer before the program while 73.29% respondents gave correct answer afterwards.



Fig-7: Students and teacher are participating in filling up evaluation form on the understanding of Gangetic dolphin and river ecosystem conservation

3. Which River dolphin gone extinct from the world?

Only 22.78% respondents gave correct answer before presentation and 57.38% respondents gave correct answer after the presentation.

4. What is the scientific name of Gangetic dolphin?

Only 35% respondents gave correct answer before the presentation while 61.93% respondents gave correct answer afterwards.

5. English name of “Hihi”

22.22% respondents before presentation gave correct answer while 66.48% respondents afterward gave the correct answer.

6. In which river system Gangetic dolphin are found?

51.66% respondents before the program gave the correct answer while 69.88 % respondents gave the correct answer afterwards.



Fig-8: Women, teachers and community leaders are participating in evaluation of the performance of dolphin conservation awareness campaign in Kulsri River

7. Who discovered Gangetic dolphin?

52.78% respondents gave correct answer before the presentation while only 78.97% respondents gave correct answer during the final questionnaire.

8. In which year Ganges dolphin is discovered?

37.78% respondents gave correct answer before presentation and 85.23% gave correct answer afterwards.

9. Which animal is compared with Gangetic dolphin in terms of ecological importance?

Only 17% respondents gave correct answer before the presentation and 76.14% respondents gave correct answer afterwards.

10. According to IUCN Gangetic dolphin is listed under which category?

13.89% respondents gave correct answer before presentation while 20.45% respondents gave correct answer during final questionnaire survey.

11. Ganges dolphin is national aquatic animal of India:

46.11% respondents gave correct answer before presentation while 67% respondents gave correct answer afterwards.

12. In which year Assam Government declared Ganges dolphin as State Aquatic Animal?
37.22% respondents gave correct answer before presentation while 81.81% respondents gave correct answer afterwards.
13. What is the protection status of Gangetic dolphin as per Wildlife Protection Act, 1972?
20% respondents knew that before the presentation while 72.73 % respondents gave correct answer afterwards.
14. Punishment for killing Ganges dolphin:
31.11% respondents knew the punishment duration for killing Ganges dolphins before the presentation while 83.52% respondents gave correct answer afterwards
15. What is the population of Ganges river dolphin in the world?
16.67% respondents gave correct answer before the presentation while 53.98% gave correct answer afterwards.
16. What is the lifespan of Ganges river dolphin?
18.33% respondents gave correct answer before presentation while 53.4% respondents gave the correct answer afterwards.
17. What type of animal of Ganges dolphin is?
33.89% respondents gave correct answer before the presentation while 77.27% respondents gave correct answer afterwards.
18. Ganges dolphin can't breathe inside water?
41.11% respondents knew that before presentation while 87.5 % respondents knew that fact afterwards.
19. Ganges dolphin can't see inside the water:
36.11% respondents knew that fact before the presentation while 92.04% respondents knew that fact afterwards.
20. Echolocation of Ganges dolphin is similar to which animal?
Before presentation, 24.44% respondents knew that echolocation of Ganges dolphin is similar to bat while 78.98% respondents knew that afterwards.

Performance of the awareness campaign and the education team:

92% respondents said that the awareness campaign was excellent. 78.5% respondents said no. such awareness campaign were conducted before in their area. 81.3% respondents said that they understood very well on Gangetic dolphin from the poster presentation. 85.2% said that the educators of the awareness campaign team were very good. 70% respondents

said the drama on Gangetic dolphin and river ecosystem conservation was very good. 92% respondents said the performance of the actors were very good in performing the drama.

Conservation impact:

Questioner survey among the participated community people of the Kulsi river bank indicated that before the campaign the average understanding of the community towards the dolphin and river ecosystem conservation was 32.5%, which increased to an average of 71.7% after the program, which indicated an average increase of the community understanding on Gangetic dolphin and river ecosystem conservation by 39.2% in the Kulsi River.

A Wilcoxon signed ranked test showed that participated community people understanding about Gangetic dolphin and river ecosystem conservation increased significantly more after the awareness campaign than before the campaign ($Z=-3.92$, $p = 0.001$).

Annex: Activity photo



Fig-9: Student awareness campaign in Kukurmara



Fig-10: Dolphin Yatra at Bhatipara



Fig-11: Student education programe at Somoriya



Fig-12: Participants in awareness campaign in Sampupara



Fig-13: Interacting with students and other people on mosquito net use and problems in Malibari