OCCASIONAL REPORT NO. 19

# BAIT AND WATCH


## Popularization of Alternatives to Dolphin Oil Among Fishermen for the Conservation of the Ganges River Dolphin (*Platanista gangetica*) in Bihar

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Wildlife Trust of India

सत्यमेव विजितासितव्यम्

Wildlife Trust of India (WTI), is a non-profit conservation organisation committed to urgent action that prevents destruction of India's wildlife. Its principal concerns are crisis management and the provision of quick, efficient aid to those areas that require it the most. In the longer term it hopes to achieve, through proactive reforms, an atmosphere conducive to conserving India's wildlife and its habitat.

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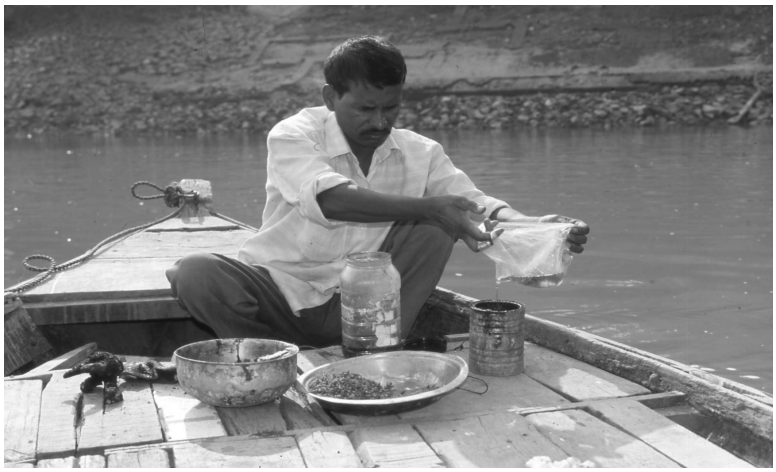

R. K. Sinha

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An Occasional Report on a Rapid Action Project by the Wildlife Trust of India

Wildlife Trust of India
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## PREFACE

Ingenuous ideas rival large-budget projects as a conservationist's best buddy. Many a time, small, novel projects do much more good than large repetitive ones. An idea by a professor from Patna University and his students of finding alternatives to dolphin fat for use as fish bait is one such story. River dolphins are extremely threatened mammals and even in our times, the Chinese dophin 'baiji' has been declared extinct. The Ganges River dolphin is an equally threatened aquatic mammal. Among its many threats, its capture by fishermen who use its fat as fish-bait is one of the most worrisome. This Rapid Action Project of WTI supported a team of conservation-oriented academics, who had come up with an alternative fish based fish-bait. The project field tested the product and also introduced the concept among a group of fishermen in Patna. While this is only a small project and was restricted to only one locality, the field trial of new ideas can lead to bigger things. As this encapsulates the spirit of a RAP in its entirety, I am very happy that this occasional report can capture it.

Vivek Menon
Executive Director, WTI

## ACKNOWLEDGEMENTS

The financial support provided by the Wildlife Trust of India is duly acknowledged.

It was at the initiative of Mr Samir Kumar Sinha, then one of the research students of the Environmental Biology Laboratory, Zoology Department, Patna University, Patna, and now a Field Officer of the Wildlife Trust of India that a Rapid Action Project was prepared and submitted to the Wildlife Trust of India, New Delhi for financial assistance.

Finally, the media deserves special mention because of the numerous articles that were published on the plight of the Ganges River dolphin and the need for its protection, which directly helped in highlighting the issue and attracting the attention of policy and decision makers.

## EXECUTIVE SUMMARY

The Ganges River dolphin, *Platanista gangetica gangetica*, commonly known as *sons* is a freshwater dolphin, which never enters the sea. It is one of the four species of freshwater dolphins found in the world and is distributed between tidal zones and as far up as the rivers are navigable in the Ganga-Brahmaputra-Meghna river systems in India, Nepal and Bangladesh.

The World Conservation Union (IUCN) categorized it as Endangered in 1996. The species is facing threats of extinction throughout its distribution range. In the last couple of decades, its habitat has shrunk and its population density is decreasing.

This dolphin is killed for extraction of oil out of its blubber. The oil is used as an attractant for two commercially important fish: *Eutropiichthyes vacha* and *Clupisoma garua*. The Principal Investigator of this Rapid Action Project (RAP), Prof. Ravindra Kumar Sinha discovered an alternative to the dolphin oil, as fish attractant, from fish scraps a couple of years ago. A serious need to pupulaize this alternative was felt so that the fish scrap oil could be more in use among the fishermen engaged in oil fishing.

The Wildlife Trust of India sponsored a RAP to popularize the oil among the fishermen at different locations in and around Patna. The extension programme was organized from October to December 2003 and from April to June 2004. The extraction of oil from fish scraps and using the same in oil bait fishery was demonstrated before the local fishermen. On many occasions, the local fishermen used the dolphin oil and the fish oil at the same time mainly to compare the results.

Based on this project, the following steps were recommended:

**Switching from dolphin oil to fish scrap oil:** Fish scrap oil was found to be a better alternative and many fishermen came forward to use this. Apart from yielding higher catch, the prohibitive price of dolphin oil and imminent legal action against this found using it proved to be a deterrent to further use of dolphin oil as more fishermen accepted the alternative fish-bait.

**Generating awareness on the Ganges River Dolphin:** The media coverage given at the time of the project briough to light the issue among policy and decision makers. Continued media exposure would facilitate greater protection for the species.

# 1. INTRODUCTION

The Ganges River Dolphin *Platanista gangetica gangetica*, commonly known as *sons*, is a freshwater dolphin that never enters the sea. It is found distributed in the Ganges-Brahmaputra-Meghna and Sangu-Karnaphuli river systems in India, Nepal (possibly in Bhutan) and Bangladesh from tidal zones of the rivers to as far up as the rivers are navigable. It is one among the four freshwater cetaceans of the world, others being Indus River dolphins (*Platanista gangetica minor*) of Pakistan; the Yang-t-ze River dolphins (*Lipotes vexillifer)* of China and Amazon River dolphins (*Inia geoffrensis*) of Latin America.

IUCN-the World Conservation Union has categorized *sons* as Endangered in 1996 (Bailie and Groomridge 1996). The species is facing threats of extinction in its entire distribution range. Besides habitat degradation of the species, it is over-exploited especially for extracting oil out of its blubber, which is used as an attractant for two species of commercially important cat-fish, *Clupisoma garua* and *Eutropiichthyes vacha*.

The Cetacean Specialist Group (CSG) of the Species Survival Commission (SSC) of IUCN - the World Conservation Union in its Action Plan of 1988-92 suggested to search for an alternative to dolphin oil as a fish bait. In compliance with the decision of the CSG of IUCN/SSC, Dr. R. K. Sinha, one of the members of the Cetacean Specialist Group, discovered one such alternative after a long field trial of 500 hours in three years (Sinha 2002). A need for an extension programme was felt to popularize the alternative oil among the fishermen as a measure to save and conserve the Ganges River dolphin.

The RAP entitled "Popularization of alternative of dolphin oil among fishermen for the conservation of Ganges River dolphin" was started in October, 2003 in the River Ganga at Patna.

## 2. OBJECTIVES

The main objectives of this project were:

- To take up an extension programme among fisher folk to demonstrate the effectiveness of fish oil as an alternative to dolphin oil.
- To transfer the know-how of extraction of oil from fish scraps to fisher folk.
- To develop resource material in Hindi, on the method of fishing with the use of alternative fish oil, to distribute among fisher-folk.
- To popularize the alternative to dolphin oil in fishing among fisher-folk by organizing field demonstrations by skilled fishermen.

## 3. PROJECT AREA

The RAP was conducted in the River Ganga at Patna. The sites selected for the demonstration of oil fishing using fish scrap oil were Fatuha, Gaighat, Digha, Doriganj, Danapur and Collectorate ghat in and around Patna.

## 4. METHODS

In the last week of September, 2003, a local fisherman, Mr. Subhash Sahni, an expert in oil fishing was requested to work under the project. He was advised to collect / procure the fish scraps for which necessary

plastic cans, utensils etc were provided to him. One part time fisherman and a Technical Assistant was also appointed to help him.

Banners and resource material detailing the methods of extraction of oil from the fish scrap and preparation of bait using supplementary ingredients were prepared and printed in Hindi for the benefit of local fishermen. Sites were selected for the demonstration and local fishermen engaged in oil fishing were motivated to assemble at the demonstration site. As per the project it was decided to arrange the demonstration twice a month.

Fish scraps were collected/ procured and they were processed to get fish scrap oil. The fishermen practicing dolphin oil fishing were contacted a day in advance and requested to assemble at a particular place for the demonstration. Media persons were also informed. While they failed to show up during the first phase, adequate coverage on the plight of dolphins and the efforts of the RAP team was given in the second phase, i.e, April - June 2004.

The process of oil extraction from the fish scraps was first demonstrated to the assembled fishermen. The ingredients (roasting and mincing of the gut and fat from the body of goat, etc) were prepared both by Mr. Sahni and his helper in the presence of other fishermen.

Fig. 1

Fig. 2

**Figures 1 and 2:**Fatty membranes of goats collected from butchers are roasted over coal

Fig. 3

Fig. 4

**Figures 3 and 4**:The fish oil is prepared by keeping fish intestines and abdominal fat in plastic cans in sun light so that it melts into oil. The oil which has a distinctive smell is drained and the solids thrown away.

**v e r  d o l p h i n  o i l  a n d  f i s h i n g  w i t h  i t**

Fig. 5

Fig. 6

**Figures 5 and 6:** The roasted membrane of goats is chopped and mixed with the fish oil

**Figure 7:**The mixture is stuffed into pieces of goat skin.

**Figure 8:**The stuffed goat skin is tied to a string and trailed from the boat at a fast flowing point in the river.

Fig. 9

Fig. 10

**Figures 9 and 10:** Attracted by the smell of this oil, which is a dolphin oil substitute, two varieties of fish - *Clupisoma garua* and *Eutropiichthyes vacha* crowd around the goat skin. Fisherman then put a piece of roasted goat fat on to a bent paper pin and hook the fish as they bite.

Fig. 11

Fig. 12

**Figure 11 and 12:** *Clupisoma garua* and *Eutropiichthyes vacha* are highly prized in the market as delicacies.

The fishing demonstrations using the alternative to dolphin oil would start at about 11 am and continue for four to five hours. Initially the fish scrap oil was applied to the roasted skin of goat and lowered into the flowing river water by fixing it to the fishing boat. For the next hour, the fish, *Clupisoma garua* and *Eutropiichthyes vacha*, were lured with the help of the scrap oil and the bait. When large numbers of fish moved close to the boat, Mr. Sahni started fishing using a simple hook with bait.

At two other sites, Gaighat and Digha (Danapur) fishing using dolphin oil instead of fish scrap oil was carried out, the remaining ingredients being the same. During summer, more than 15 fishing boats were engaged in fishing with dolphin oil at the confluence of the Gandak and Ganga just up stream of Mahatma Gandhi Setu (Bridge) at Patna. The catch of both kinds of fishing boats were recorded for comparison as an aid to convincing the fishermen.

More fish were caught during summer. The post-monsoon period from October to December saw a reduction in the catch. The total catch varied from site to site and month to month. Interestingly, the catch with fish scrap oil was found to be higher than the one with dolphin oil during the demonstration. The entire process was photographed for the record. The catch was usually given to the fishermen for their own consumption.

Samir Kumar Sinha of WTI joined the November demonstration at Digha, Danapur. Anirudha Mukherjee, one of the Directors of the Wildlife Trust of India, New Delhi, visited Patna in the first week of December, 2003 to see the entire exercise. Unfortunately no fish could be caught on the first day due to low water temperature. However, fortunately, on the second day the weather improved and a successful demonstration was organized.

On the 13th of December, the Minister of Environment and Forests, Government of Bihar, Sri Jagadanand Singh also undertook a Dolphin Watch and float down the River Ganges with Dr. R. K. Sinha. The PCCF, CCF cum Chief Wildlife Warden and the Member Secretary, State Pollution Control Board besides many officials and local citizens, also accompanied the Minister. During this demonstration, the catch was negligible due to very low water temperature.

After the first half of December, no demonstration could be organized because of low temperatures, during which fish normally remain in deep water near the bottom. Fishing is not possible when the fish do not appear near the surface. The fishing resumes from March onwards.

The second phase of the project started again in April, 2004. The sites previously left out were were now covered between April and June. It was observed that the flow of river water was quite low in April, especially through Fatuha channel (The Ganga separates into two channels after leaving Patna; Fatuha is 23 km downstream of Patna on the right bank of the Ganga, where the River Punpun joins the Ganga). This resulted in a low catch at Fatuha but at Gaighat, near the Ganga-Gandak confluence at Patna, the catch was high (5 kg in four hours of fishing). The fish were almost double in size during the summer season as compared to the post-monsoon period (October-December). At Gaighat the demonstration was repeated especially since the local fishermen (many of who are Muslims) practice fishing using dolphin oil here. Through repeated demonstrations, they were urged to opt for fish scrap oil instead of dolphin oil. At other places, the catch was normal and the local fishermen were more receptive.

Hand-bills describing the details of the processes were distributed among the local masses in general and the fishermen in particular at each demonstration.

## 5. RESULTS

### 5.1 Acceptance of alternative oil

It was found that the local fishermen who used to practice oil fishing using dolphin oil were coming forward to adopt the fish scrap oil instead of dolphin oil. This was more so because dolphin oil is very expensive at Rs. 300/- per kg. At the same, time they realized that legal action may be taken by the government authority against them for using dolphin oil. The RAP team also interacted with government officials responsible for wildlife conservation and informed them about the RAP and requested them to stop the use of the dolphin oil in fishing.

### 5.2 Reduction in dolphin killing

During the entire period of this project, dolphin killing was not reported except in January 2004 near the office of Patna District Magistrate and in the month of March at Kurjee ghat. The matter was reported to the government officials and also to the media. Since demonstrations were carried out in the river by closely interacting with the fishermen, it was easy to get information about any dolphin killing. Media were also invited to the river to get first-hand information about dolphin-oil fishing. Later , the District Magistrate (DM) of Patna informed the general public of the alternative of dolphin oil as fish attractant and instructed all the sub-divisional officers under Patna district to give protection to the Ganges River dolphin and keep a continuous watch on it, failing which, action would be taken. The DM also requested the people's representatives and NGOs to come forward to create awareness for dolphin protection.

### 5.3 Protection of Ganges River dolphin

On 5th June, the World Environment Day, the media highlighted the importance of the dolphins in the Ganga and its tributaries. Mr. Ashwini Chaubey, one of the alumni of the Zoology Department Patna University and currently the BJP leader in the Bihar Legislative Assembly demanded that the entire stretch of the Ganga between Patna and Sahibganj (about 350 km) be declared as Dolphin Sanctuary for proper protection of the dolphin.

## 6. RECOMMENDATIONS

Based on this project, the following steps were recommended:

**Switching from dolphin oil to fish scrap oil:** Apart from yielding higher catch, fish-scrap oil was a cheaper alternative to dolphin oil, a fact that would be more acceptable to fishermen.

**Generating awareness on the Ganges River Dolphin:** The media coverage given at the time of the project brought to light the issue among policy and decision makers. Continued media exposure would facilitate greater protection for the species.

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The endangered Ganges River Dolphin, already threatened with extiction due to shrinking habitat was under added threat because of its oil that was used by fisherman as an attractant to commercially useful fish. The author's discovery of an alternative oil from fish scraps gave a new lease of life to the Ganges River dolphin. This is a report on the Rapid Action Project to popularise the alternative fish attractant among fishermen in Bihar.

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