

**FIRST TAGGING WITH A RADIO-TRANSMITTER OF A RESCUED INDUS RIVER DOLPHIN NEAR SUKKUR BARRAGE, PAKISTAN****Dr. Arshad H. Toosy<sup>1</sup>, Uzma Khan<sup>2</sup>, Rizwan Mahmood<sup>3</sup> and Hussain Baksh Bhagat<sup>4</sup>**

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**INTRODUCTION**

River Dolphins are among the world's most threatened mammal species and they inhabit some of the largest river systems of South-Asia. The Indus River Dolphin (*Platanista minor*) is one of the four obligate freshwater dolphin species which is endangered and is endemic to the Indus River, Pakistan. The minimum abundance of the species is about 1,341 according to the last comprehensive survey conducted in 2006 (Pakistan Wetlands Programme, WWF – Pakistan, unpublished data). There is a 12% increase in the population since the last comprehensive survey in 2001 where the minimum abundance was about 1,200 (Brault 2006). It is restricted to about 1,375 km stretch of the Indus River between Jinnah and Kotri barrages. The highest density is currently observed in the Sindh Province, mainly between Guddu and Sukkur barrages. In 1974 an area of about 200 km between Guddu and Sukkur barrages was declared as a Dolphin Reserve by the Government of Sindh. This Reserve is also a Ramsar Wetland.

The existing population of the Indus River Dolphin is threatened by water pollution due to domestic, industrial and agrochemicals pollutants, commercial fishing, degradation of the habitat due to water infrastructure development and diversion of water for agriculture without maintaining minimum environmental flows in the River. Moreover, there are accidental deaths after becoming trapped in irrigation canals or fishing nets. WWF - Pakistan is working with the Sindh Wildlife Department for the conservation of this species since 1998. The Project component focusing on the Indus River Dolphin conservation involves community based conservation initiatives along with research and awareness. Translocation of trapped dolphins from irrigation canals to the mainstream of the River is one of the key interventions of the Project. As a part of scientific research programme one of the objectives of the Project is to document the natural history of the species. Non-invasive research methods such as remote-telemetry are used to conduct studies on the behaviour of the animal, the post-rescue survival, and the movement and distribution patterns.

**Rescue of an Indus River Dolphin:** An Indus river dolphin was spotted by the staff of Sindh Wildlife department on 11<sup>th</sup> January 2009 trapped in Mirwah irrigation canal, at Patna regulator, emanating from the Sukkur Barrage (GPS location N 27°38'25.9, E 68°51'49.5). After making the assessment of the stranding site a rescue operation was organised on 13<sup>th</sup> January, 2009 by WWF - Pakistan in collaboration with the Sindh Wildlife Department and the Environment Agency, Abu Dhabi. The objective was to rescue and tag the stranded dolphin and return it back to the Indus River.

**Capture and handling of the animal:** After the assessment of the stranding site and debriefing of the personnel involved in the rescue operation, the nets were placed by a team of community-based swimmers to encircle the dolphin. The nets were then pulled towards the shallow water close to the canal bank. The dolphin was then caught as it swam close to the shallow water by a team of swimmers. Soon after capture, the animal was moved on a stretcher with foam mats and was weighed, sexed and body measurements were taken. This method has been adopted from marine mammal rescues (Joseph and Geraci and Lounsbury 1993) and refined later by Khan (2005). Initial medical assessment was done by recording the condition of the teeth, mouth, the colour of mucous membranes, any signs of external injuries and scars, skin condition and body condition. After completion of medical assessment the dolphin was transported by a pickup to the release site. During transportation animal was closely monitored for any signs of stress. Respiration and heartbeat were checked during this period. To avoid hyperthermia, the animal was covered with wet towels, except the blowhole. The dolphin that appeared to be a 2.5 years old 18 kg male measuring 118 cm in length has been named *Musafir* (traveller). It was successfully transported to the release site (Indus River) close to the Sukkur barrage (N 27°41'28.0, E 68°52'54.7) and soon after release joined a group of dolphins that was present in that area. The rescue operation lasted overall three hours.

**Radio transmitter tagging:** Technical support for fixing the transmitter and training of staff to conduct radio-tracking was also provided by the Environment Agency, Abu Dhabi. Before the release a VHF radio-transmitter was fixed to its dorsal fin. It was the first time this species had ever been tagged. The biggest challenge in fixing the transmitter was the size of the dorsal fin. Unlike marine dolphin species the size of the dorsal fin is very short in river dolphins. A 17.6 grams external mount radio-transmitter (Model F2060 - Advance Telemetry Systemic, Inc, USA) powered by a Lithium battery giving a life expectancy of 654 days was selected for the study. Two sterile hypodermic needles were passed through the base of the dorsal fin. The two plastic coated wires (external attachments) attached to the transmitter were then pushed through the hypodermic needles. Both the needles were pulled out leaving the wire (external attachments) in place. A disc was slid down through each wire on the opposite of the transmitter and was locked with the help of sleeves. To avoid injury to the delicate skin, a padding of Neoprene (synthetic rubber) was placed between the transmitter and the disc. After fixing the transmitter the dolphin was released back into the mainstream and the location of the release site was recorded with GPS (Map Figure 1).

**Conclusion:** Our first experience of tagging an Indus River Dolphin has been successful. The dolphin is being tracked twice daily by boat during the daytime and its GPS locations are being recorded by the field staff. Visual observation is also being done when possible. During tracking, care is taken not to affect the behaviour of the dolphin. This tracking will help in understanding the movement of the dolphin particularly through the barrages and the extent of movement with fluctuation in the water level between dry and wet season. So far very interesting telemetry data on its movement have been collected. The dolphin has been able to cross the Sukkur barrage during the low water flow at 14,000 cusecs, moving both ways downstream and upstream. This provides the first scientific proof

of the movement of the Indus River Dolphin across the barrage. In future, the possibility of fixing a Satellite GPS transmitter will be explored.

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