

## **Project Update: August 2007**

The major threats to the Ganges river dolphins in the Koshi River of Nepal are:

**Poaching and accidental death:** A recent poaching incidence of dolphin in the nearby tributary of the Koshi River was reported during an interview with the staff of the Koshi Tappu Wildlife Reserve. A dolphin was poached by a team of local villagers for its meat in a small tributary during the monsoon in a village near the Wildlife Reserve. The snout of the poached dolphin (Figure) was caught by the park staff. Cases of deliberate killings of dolphin were reported in the Indian Territory during interviews with the local fishers. Bycatch in the Koshi River in the Nepalese Territory is occasional which can be illustrated by a juvenile caught by gillnetting few years back downstream of the barrage.

**Habitat loss degradation:** The high human population pressure along the Koshi riverbank has exerted pressure on forest resources. The indiscriminate deforestation in the buffer zone area of the Koshi Tappu Wildlife Reserve (Department of National Parks and Wildlife Conservation, 2000) and change in land use from forest land into agricultural land have resulted in siltation in the Koshi River. This situation has been further accelerated by livestock grazing along the riverbanks, wood collection and over-collection of thatch, grass and other aquatic resources. These activities have caused erosion in the area, altering the aquatic habitat with the heavy load of siltation. Locals reported serious loss of fish species in the river, which can be linked to the dolphin depletion in the Koshi River. The Koshi River basin has also been affected by the construction of several structures such as the Koshi Barrage, the Chatara irrigation canal and several embankments.

**Over exploitation of fisheries:** Observations during the study showed high fishing activities in some areas in Chatara, Srilanka Tappu and Rajabas areas where dolphins were reported by the local communities. Certain locations apart from these places have also been subjected to intensive exploitation of fishes. For instance, fishing near by the barrage area is significant especially in the southern section of the barrage is highly stressed with fishing activities where dolphins were sighted during the study. During interviews, local fishers reported that they like to fish in the areas of dolphin because they can find fish stock nearby them. The traditional fishers (Ghodi, Mallaha, Mukhiya and Bahardhar) and the increased involvements of the immigrants from nearby areas have increased fishing activities in the Koshi River as fishing is the basis of their livelihood. The riverine environment of the Koshi River is degraded with the increasing trend of fishing occupation among other people of the area, and the demand of fish from the Koshi River all over Nepal and in some parts of India has further exerted fishing pressure in the Koshi River. This fishing pressure led to over-harvesting of fish and the decline of fish populations. Even inside the Koshi Tappu Wildlife Reserve, illegal fishing activities are common in Trijuga River, Kamal daha and in the Koshi River in spite of prohibitions inside the reserve. The present study recorded gillnets, drag nets and cast nets especially in the barrage area. He further reported the use of destructive devices such as dynamite, fish poisons, electro-fishing and their negative impact on fish population by destroying brood stock, spawning and the nursery grounds. This clearly indicates the prey depletion in the area which is indirectly affecting the river dolphins and can be linked to reduction in their population.

Though no dolphins were found caught by these nets by the present study, but local communities reported that a juvenile was caught by a gill net few years back downstream of the barrage. Such nets can be very dangerous to the river dolphins as they cannot be detected visually and acoustically by dolphins and can entangle fish fauna of all size and thus can pose a direct threat to the breeding fish populations.

**Pollution and poisoning:** During study, activities like washing of clothes, bathing and waste dumping were observed very often especially in the barrage area. Hotels and small shops near by the Koshi Barrage were dumping their wastes directly into the river. The park staff reported the use of toxic plants extracts as fish poison for mass fishing in the Koshi River. Chemical fertilizers and pesticides are heavily used for agricultural purposes in the Koshi River area. These chemical inputs are another source of pollution. An estimated 87.3% of the economically active population in the buffer zone of the Koshi Tappu Wildlife Reserve is involved in the agricultural activities (Department of National Parks and Wildlife Conservation, 2000) and practices some types of intensive agriculture.

**Barrage and embankments:** The Koshi Barrage has altered the habitat of dolphins by making the river section upstream of the barrage like a lake and eliminating the counter currents downstream of the barrage where dolphins and their prey shelter, thus posing direct threat to the river dolphins of the Koshi River. The barrage has fragmented the downstream and upstream dolphin population. It has been reported by several researchers that the effects of subdividing a single population into non-interacting insular units increase their vulnerability to environmental, demographic, genetic and etiological threats.

**Ineffective law enforcement:** Over the last few years, there have been several acts and policies for the conservation and wise use of aquatic resources, but they have not been implemented effectively so far. Though the river dolphin is a legally protected mammal and is included in Schedule I in the list of 27 protected mammals of National Park and Wildlife Conservation Act 1973 and Appendix I in CITES, very little attention has been given to this flagship species. Some acts: Aquatic Animal Protection Act (AAPA) 1961, National Parks and Wildlife Conservation (NPWC) Act 1973, Water Resource Act 2049 (1992) and Wetland Policy 2003 are obligatory for the protection of endangered species, aquatic life and their habitats. Despite these acts and regulations, indiscriminate habitat loss and degradation of freshwater species, destructive fishing practices and poisoning of water bodies continue to have negative impacts on the freshwater species including endangered river dolphin. For instance, Aquatic Animal Protection Act 1961 mandates the conservation of aquatic life by recognizing the value of wetlands and aquatic animals. It prohibits illegal killing and trapping of aquatic life, but the freshwater fishes are usually harvested using poison, electrical devices and trapping.

The Government of Nepal has not initiated concrete conservation measures for its protection at both the local and national levels. Species conservation action plans for keystone species have been given high priority in the National Biodiversity Strategy of Nepal 2002 but there is no action plan for the river dolphins in Nepal.

