

REPORT

OCCURRENCE OF THE SMOOTH-COATED OTTER *Lutrogale perspicillata* (GEOFFROY, 1826) IN PUNJAB, INDIA

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Abstract: Decline in the populations of the Smooth-coated Otter throughout its range of distribution and a perception that it is a 'keystone species' for riverine ecosystem stirred the idea of the presented paper. The species inhabits major freshwater wetlands throughout the south and south-east Asia and often comes into the direct conflict with humans for food and habitat. Further the species is also suffering with neglecting attitude and mismanagement due to lack of baseline information. Thus WWF India initiated the conservation work towards the documentation of the distribution of the species in Punjab in 2010. State wide population assessment surveys and secondary information obtained shows the occurrence of smooth-coated otters along some stretches of Rivers Beas, Sutlej and Ravi and Harike wetland in Punjab.

Key words: Aquatic mammals, Punjab, Smooth-coated otter

INTRODUCTION

Otters are emblematic species for nature conservation in a broad societal context; hence it is often advocated as a model species in the studies for fluvial ecosystem functioning and anthropogenic stress (Norris and Michalski, 2009). The amphibious life style of otters allows them to disperse over wide areas of riverine landscapes, and as a result, they influence the ecological processes of the river floodplain in a direct manner (Khan et al., 2014). Smooth-coated otter (*Lutrogale perspicillata*) play a vital role in balancing the freshwater ecosystems as a top carnivorous species and may therefore significantly influence the overall spatio-temporal dynamics of the ecoregion over a long period of time (Khan et al., 2014). There is little information available on the status of otter populations in India, although there seems to have been a rapid decline due to loss of habitat and intensive poaching (Hussain et al., 2008). Presently, the otter population is severely fragmented throughout its distribution range and isolated populations are restricted mostly to protected areas (Hussain, 1999; Nawab, 2007; Nawab, 2009). Having a semi arid bio-geography, the situation is further grim in the state of Punjab.

Smooth-coated otters inhabit major freshwater wetlands throughout the south and south-east Asia (Nawab, 2009). Being found in one of the world's most human dominated and economically poor landscape, their ecological requirements often conflict with human food and water security. Though, the species is protected under

Indian Wildlife (Protection) Act, 1972 (The Wild Life (Protection) Act, 1972 2008), and listed in appendix II of the CITES (CITES 2014), it is still subjected to poaching for its skin and fat (Shenoy et al., 2006; Nawab and Gautam, 2008; Hussain, 1999; Nawab, 2007, 2009; Hussain et al., 2008). Deficiency of baseline data on its distribution and ecology is another major constraint that hampers the protection of the species in India (Nawab and Gautam, 2008; Hussain, 1999; Nawab, 2007; 2009; Hussain et al., 2008). No reliable estimates of its population are available from India. However, based on the available data, it is projected that the population will continue to decline in future due to habitat loss and hence has been classified as Vulnerable by the IUCN (Hussain et al., 2008). Once commonly found throughout its distribution range, the species started disappearing from a number of its known distribution locations. Shrinking span of distribution limits the species to the protected areas and these isolated sub-populations are still subjected to further anthropogenic threats like construction of large-scale hydroelectric projects, reclamation of wetlands for settlements and agriculture, reduction in prey biomass, poaching and pollution (Shenoy et al., 2006; Nawab and Gautam, 2008; Hussain, 1999; Nawab, 2007; 2009; Hussain et al., 2008).

It is well known that the infrequency of occurrence or absolute absence of high level predator creates a functional void in its specific ecosystem that can trigger a series of linked changes leading to degrade the complexity of its ecosystems, which further creates adverse environment for the low level organisms as well. In order to protect ecosystems as a whole, biodiversity conservation plans should aim to restore the ecologically effective densities of such apex species (Ritchie et al., 2012). Being sensitive towards the environmental changes, smooth-coated otters are suitable indicators for the health of wetland ecosystem (Nawab, 2009). Hence, the presence of otters gives a more accurate, integrative and direct knowledge about the health of the wetland than that of mere facts about a site's contamination status, as we get from chemical or radiological monitoring of environmental health (US EPA, 2002).

Punjab, as the name suggests, the land of five rivers, has water stressed environment and semi-arid biogeography. Highly irrigated landscape of agriculture and dense human population left almost no room for wildlife to occupy but still the state harbors a multitude of wildlife species including endangered aquatic mammals like smooth-coated otter and indus river dolphin *Platanista gangetica minor* (Khan, 2013).

The distribution of smooth-coated otter is reported widespread in Punjab and are locally called *Ludhar* (Singh, 1991). Presently, the population is severely fragmented throughout its distribution range and isolated populations are restricted mostly to protected areas (Hussain 1999; Nawab 2007; Nawab 2009).

MATERIAL AND METHODS

Decline in the populations of smooth-coated otter throughout its range of distribution (Nawab 2007) and a perception that it is a 'keystone species' for freshwater ecosystem stirred the idea of present study. State wide population assessment surveys following Hussain and Choudhury (1997) together with secondary information were carried out during 2010-2012 in Punjab state (India). Water bodies were divided into 25km survey zones using Survey of India's 1:50,000 topographic maps and every 5km was considered a sampling site. At each site presence/absence of otter occurrence was recorded. In order to collect data on the indirect evidences of otter occurrence such as tracks, spraints, den sites or scent marks the searches were made along the edge of the river, by walking. As an integral part of the survey, interviews with locals (n=97) were conducted to seek information on faunal

occurrence. These interviews were conducted at every encounter with locals to seek information on faunal occurrence in the stretch. Questionnaire was verbal, informal and centred on coloured plates of authentic field guides on Indian fauna. The questionnaire survey was including the following procedures. (a) Ask respondents to identify the local aquatic species from pictures. (b) Ask respondents to give a physical description of otter. (c) If the respondents were found to be correct in their identification and descriptions they were investigated further for supplementary information.

RESULTS

The population assessments showed the occurrence of smooth-coated otters along some stretches of Rivers Beas, Sutlej and Ravi and Harike wetland in Punjab (Figure 1). During the field work, eight otter sightings were made in and around the Harike Wildlife Sanctuary. The maximum group size recorded was of seven individuals (2 adults and 5 young ones). The interviews with locals confirm the occurrence of smooth-coated otter in the upper reaches of River Sutlej i.e. between Nangal barrage (31°22'46.5" N, 76°21'51.4" E) and Ropar barrage (31°59'16.5" N, 76°30'43.0" E) whereas the upstream of River Beas till Dhunda Pattan (31°53'37.4" N, 75°34'05.0" E) was found devoid of otter's presence. In case of River Ravi which flows in a zig-zag manner along the international line of control between India and Pakistan, almost homogenous distribution of the species was recorded from Dhanera (32°26'34.2" N, 75°44'42.8" E) to Ganie-ke-Bait (32°02'07.4" N, 75°58'08.1" E). The reason for the avoidance of River Sutlej by the species may be the degraded habitat quality in terms of water pollution and over fishing. Two incidents of otter road kills were also recorded during the study in February 2012. These incidents took place just outside the Harike Wildlife Sanctuary near the Ferozpur Feeder Canal (31°08'33.03" N, 74°56'51.33" E) on the National Highway No. 15 connecting Amritsar and Ferozpur city.

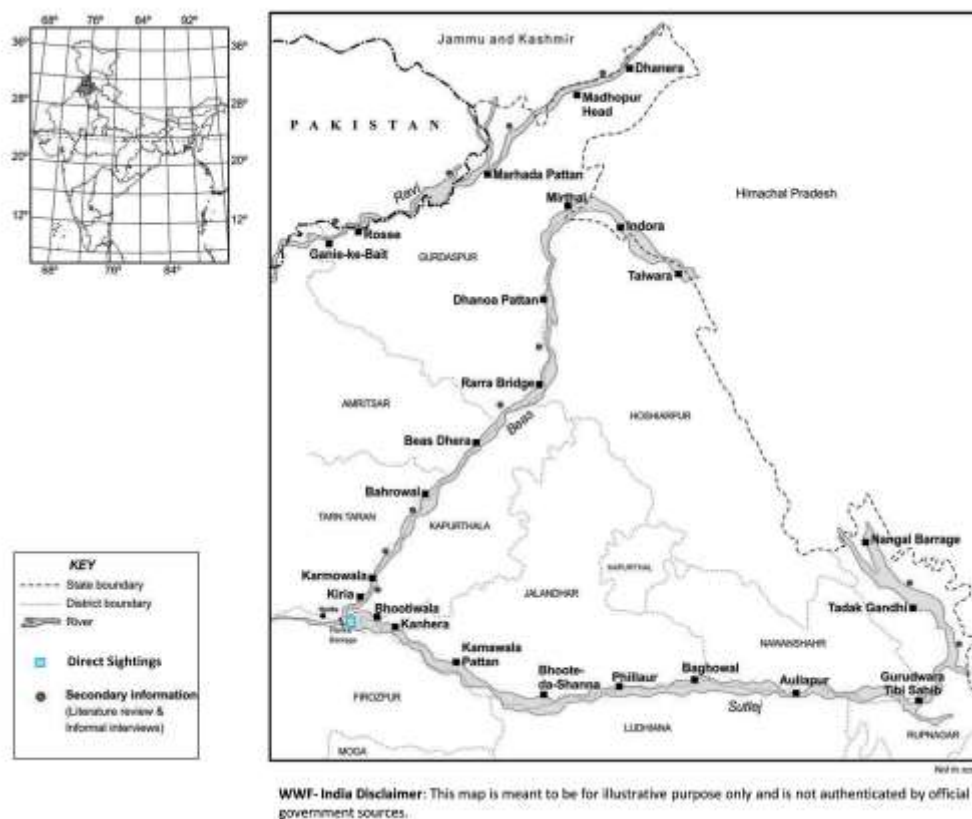


Figure 1. Smooth-coated otter occurrence records

DISCUSSION

It is important to secure the possibilities for animal to pass the roads at least near the protected areas by slowing down the vehicles and responsible driving. Further, the sense of ownership and desire for stewardship towards the conservation of smooth-coated otter and its fragile habitat need to be developed by the way of promoting greater public awareness and by involving local communities in the conservation work. Locals especially youngsters of riverine community should be engaged in conservation practices and if possible pay some stipend for the same, which consequently reduces their direct dependency on the river system.

The local influential persons should be convinced through education and outreach programs as it develop the local leadership for the self-sustainable long term conservation of the species. School children should also be motivated through various creative activities and local school campaigns. Since 2010, WWF India is working towards the documentation of distribution of smooth-coated otter in Punjab together with the aspects of its ecology. The future surviving viability of the species depends on how it was managed in past (Khan, 2013). Therefore, it is recommended to take the initiative to prepare the species management plan for the state which will subsequently unite with other states and help in developing the national action plan for the species.

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REFERENCES

- CITES (2014)**. Convention on International Trade in Endangered Species of Wild Fauna and Flora. Appendices I, II and III, valid from 14 September 2014.
<http://www.cites.org/sites/default/files/eng/app/2014/E-Appendices-2014-09-14.pdf>
- Hussain, S.A., Choudhury, B.C. (1997)**. Status and distribution of Smooth-coated Otter *Lutra perspicillata* in National Chambal Sanctuary. *Biol. Conserv.* **80**: 199-206.
- Hussain, S.A. (1999)**. Otter conservation in India. *Envis Bulletin – Wildlife and Protected Areas.* **2**: 92-97.
- Hussain, S.A., De Silva, P.K., Feeroz, M.M. (2008)**. *Lutrogale perspicillata*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. <www.iucnredlist.org>. Downloaded on 22 December 2014.
- Khan, M.S. (2013)**. Indus River Dolphin: The Survivor of River Beas, Punjab, India. *Curr. Sci.* **104** (11): 1464-1465.
- Khan, M.S., Dimri, N.K., Nawab, A., Ilyas, O., Gautam, P. (2014)**. Habitat use and conservation status of Smooth-coated Otters *Lutrogale perspicillata* in Upper Gangetic Basin, India. *Ani. Biodiv. Conserv.* **37**: 69-76.
- Nawab, A. (2007)**. Ecology of Otters in Corbett Tiger Reserve, Uttarakhand; India. Ph.D. Thesis, Forest Research Institute, Dehradun, India.
- Nawab, A., Gautam, P. (2008)**. Living on the edge: Otters in developing India. In Wetlands – The Heart of Asia. Proc. Asian Wetland Symp., Hanoi, Vietnam.
- Nawab, A. (2009)**. Aspects of the ecology of Smooth-coated Otter *Lutrogale perspicillata* Geoffroy St. Hilaire, 1826: A Review. *J. Bombay Nat. Hist. Soc.* **106**: 5-10.
- Norris D., Michalski, F. (2009)**. Are otters an effective flagship for the conservation of riparian corridors in an Amazon deforestation frontier? *IUCN Otter Spec. Group Bull.* **26**: 73-77.
- Ritchie, E.G., Elmhagen, B., Glen, A.S., Letnic, M., Ludwig, G., McDonald, R.A. (2012)**. Ecosystem restoration with teeth: what role for predators. *Trends Ecol. Evol.* **27**: 265-271.
- Shenoy, K., Verma, S., Prasad, K.V.D. (2006)**. Factor determining habitat choice of Smooth-coated otter, *Lutra perspicillata* in a South Indian river system. *Curr. Sci.* **19**, 637-643.
- Singh, G. (1991)**. Status of Smooth-coated Otter (*Lutra perspicillata*) in Punjab. *Indian Forester.* **117**: 878-880.

The Wild Life (Protection) Act, 1972 (As amended upto 2006) (2008). TRAFFIC India, WWF-India, New Delhi. Natraj Publishers, Dehradun.

US EPA (2002). Methods for Evaluating Wetland Condition: Biological Assessment Methods for Birds. Office of Water, U.S. Environmental Protection Agency, Washington, DC. EPA-822-R-02-023.

RÉSUMÉ

DISTRIBUTION DE LOUTRES A PELAGE LISSE *Lutrogale perspicillata* (GEOFFROY, 1826) A PUNJAB EN INDE

Le déclin de la population des Loutres à pelage lisse le long de son aire de distribution et son importance en tant qu'espèce clé dans les écosystèmes des rivières et des fleuves ont motivé la réalisation de ce travail. Cette espèce est majoritairement établie le long des zones humides du Sud et du Sud-Est de l'Asie, et cette distribution entre régulièrement en conflit avec l'Homme sur le point des ressources alimentaires et de l'habitat. De plus, cette espèce souffre d'une attitude négligente et d'une mauvaise gestion essentiellement liées à un manque de connaissances basiques. Donc, la WWF indienne initia un travail de conservation de cette Loutre par la diffusion de documentation concernant sa répartition à Punjab en 2010. Les surveillances et la collecte d'information secondaire de cette population de Loutre à l'échelle de l'État de Punjab ont révélé la présence de Loutres à pelage lisse le long de certains bras des rivières Beâs et Sutlej, et dans la zone humide de Harike.

RESUMEN

OCURRENCIA DE LA NUTRIA LISA *Lutrogale perspicillata* (GEOFFROY, 1826) EN PUNJAB, INDIA

La declinación en las poblaciones de Nutria Lisa en todo su rango de distribución, y la percepción de que es una "especie clave" de los ecosistemas fluviales, motivaron la idea de este trabajo. La especie habita los principales humedales de agua dulce en todo el sur y sudeste de Asia, y a menudo entra en conflicto directo con los humanos, por alimento y por hábitat. Además, la especie también está sufriendo a partir de una actitud de descuido y de mal manejo, debido a la falta de información de base. Por eso, WWF India inició en 2010 un trabajo de conservación dirigido a documentar la distribución de la especie en Punjab. Las prospecciones de evaluación poblacional hechas en todo el estado, y la información secundaria obtenida, muestran la ocurrencia de la nutria lisa a lo largo de algunos tramos de los Ríos Beas, Sutlej y Ravi, y en el humedal Harike, en Punjab.