

# Contribution to the birds and mammals of Ladakh (N India)

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**Abstract.** Altogether 86 bird and 11 mammal species were observed during two one-month visits to eastern, southern and central Ladakh (ca 3300–5500 m asl) in 2007 and 2011: they are listed, and more detailed information added for some of them. Data on abundance and family size of *Anser indicus* on the lake Tso Moriri are given, a detailed map with numbers of *Equus kiang* in visited areas is provided, and occurrence of the endangered species *Grus nigricollis* and *Panthera uncia* is confirmed. A new bird species (*Emberiza stewarti*) is added to the list of Ladakh's vertebrates.

*Key words:* birds, mammals, Ladakh

## Introduction

Ladakh, the westernmost part of the Tibetan Plateau, belongs among the less known areas of the Earth as regards wildlife. The very first synthesis of data on Ladakh's birds and mammals was published by Otto Pfister as recently as 2004. He put together all his detailed knowledge of Ladakh's wildlife from several long-lasting stays in the region, as well as the results of published and unpublished wildlife data from more than 150 years of "Ladakh's ornithology and mammalogy", from the middle of the 19<sup>th</sup> up to the beginning of the 21<sup>st</sup> century. A further important step was made by WWF India (Chandan *et al.* 2011, Shawl *et al.* 2011) which published books on bird and mammal fauna in the Ladakhi language to bring more information on the high values of Ladakh's wildlife to local people.

"Among the various biogeographical regions in India, the spectacular Ladakh region, called Trans-Himalayas, is perhaps the least studied ... Magical remoteness, limited accessibility, extreme weather conditions, and relatively undisturbed wildlife make Ladakh a special attraction to hardcore naturalists and adventure travellers." – Asad R. Rahmani, the director of the Bombay Natural History Society, writes in the Foreword to Pfister's book. The area of Ladakh is large (103,600 km<sup>2</sup>) but its population is very low (some 130,000 inhabitants), the number of visitors is increasing but of course not all of them are biologists gathering data

during their visits ... thus, every contribution to the knowledge of local wildlife is welcome.

The submitted article has no ambition to significantly improve knowledge of Ladakh's fauna, it is just a tiny contribution based on two one-month trips to this region. However, it is considered better to offer some field notes to further work by O. Pfister and his successors than to leave them shut in a desk.

## Study area

Ladakh is situated in northern India, in the state of Jammu and Kashmir, and Pfister (2004) divides its area into five parts for the purposes of his book: Western, Southern, Central, Eastern and Northern Ladakh. This article deals with the Eastern (especially the lakes of Tso Kar, Tso Moriri and Pangong Tso), Southern (the upper Zangskar and Tsarab river valleys) and Central (Leh and adjacent areas) regions according to Pfister's division.

Local geographical names (especially their transcription) and the altitudes of important points differ widely in different maps and publications on Ladakh. For the purposes of this article both the names and altitudes from the map by Hanish & Co. (2010) have been used.

Different areas of Ladakh were visited twice for nearly a month – in 2007 (July 20 to August 14, treks nos. 1–4) and 2011 (July 7 to August 5, treks nos. 5–9):  
(1) July 20–24, 2007: Leh (3506 m asl) and its surroundings (Alchi, Likir, Shey, Thikse, Kharu, Thag thog)  
(2) July 22–23: Pangong Tso (Spangmik, 4298)  
(3) July 24 to Aug 4: Tso Kar (4268) – Nuruchan – Horlam Kongka (4900) – Rajung Karu – Kyamayuri La (5430) – Gyama Barma – Yalung Nyau La (5440) – Korzok Phu – Korzok (4553) – Tso Moriri – Kyangdam (4500) – Khulmoche – Lhatho Gongma – Thargang (4700) – Zozogong – Thelakung La (5020) – Barma – Pang (4630)  
(4) Aug 4–14: Serchu (4253) – Khamirab – Chumik Marpo – Phirtse La (5490) – Zhingchan – Toden La (4990) – Tantse – Testha – Purni – Phukthal – Testha – Kargyak – Lhaxhang – Shingo La (5095) – Chumik Nakpo – Pal Lhamo – Darcha (3400)  
(5) July 7–12, 2011: Leh and its surroundings (Ridzong, Likir, Shey, Thikse, Hemis, Chemde)  
(6) July 12–14: Kharu (3963) – Upshi (3384) – Hyamnya – Kyere – Mahe – Puga Sumdo – Nusgur La (4840) – Thadsang Karu – Tso Moriri (Korzok) – Puga Sumdo – Puga – Polo Kongka (4970) – Tso Kar (4268) – Pang (4630)  
(7) July 14–25: Serchu – Khamirab – Chumik Marpo – Phirtse La – Zhingchan – Toden La – Thable –

Kargyak – Hi – Thanso – Shangkha – Tantse – Teshta – Malinche – Yal – Purni – Kalbok – Tsetan – Cha – Phukthal/Yugar

(8) July 25 to Aug 1: Yugar/Phukthal – Yata – confluence of the Tsarab and Shingra rivers – Thantak – Shade – Thantak – Nialo Kontse – Nialo Kontse La (4850) – Gotonda La (5100) – Hormoche – Mars-hun – Yarshun – Munele – Satak – Tsokmitsik – Tak  
(9) Aug 1-5: Baralacha La (4892) – Topogongmo – Topoyongmo – Chandra Tal – Batal

## Methods

The main aim of visits was trekking. The first few days were devoted to acclimatisation, walking or driving a car in and around Leh (“treks” nos. 1 and 5). The other days were spent trekking along the routes described (treks nos. 2–4 and 6–9). All bird and mammal species observed on the respective treks were noticed and determined, if not already known, using Pfister (2004) and Grimmett *et al.* (2006). Binoculars 10x40 were used for observations; weather during the stays was helpful (sunny or partly cloudy, windy, without rain).

In 2007 simple species lists were prepared only, and all kiangs (*Equus kiang*) were mapped (including their numbers and sex, if possible) along the respective routes. In 2011 a bird species list was produced with an estimation of relative abundances – very common species (many birds seen or heard at many localities along a route), common species (a single or a few birds only seen or heard usually at more localities), and single observations (usually one bird at one locality only) (see Appendix).

The taxonomy and nomenclature follows HBW (1992–2011) for birds, HMW (2009–11) for carnivores and ungulates, and Pfister (2004) for other groups of mammals.

## Results and discussion

Altogether 86 bird and 11 mammal species as a minimum were registered during the two visits (see Appendix). One of the bird species (*Emberiza stewarti*) is not listed in any of the three lists consulted (see later) and is considered new for Ladakh. More detailed information is given for several species, as regards date and locality (altitude) of observations especially, mainly for comparison with data in Pfister (2004).

There are probably only three useful lists of birds observed in Ladakh. The first one, by Pfister (2004), mentions 276 species with much detailed information provided. The more recent lists by Chandan *et al.* (2011) and Lepage (2011) contain 286 and 305 species respectively, but without any details and references that they excerpted.

*Tachybaptus ruficollis*: July 22, 2007 – Shey marshes, 1 bird.

*Podiceps cristatus*: July 29, 2007 – Tso Moriri (southern tip), min. 19 birds; July 13, 2011 – Tso Moriri (northern tip), min. 13 nests with incubating adults.

*Egretta garzetta*: July 8, 2011 – the Indus valley near Leh, 1 bird.

*Anser indicus*: The species occurred on the lake Tso Moriri only. In 2007 (July 29, the west bank south of Korzok) the majority of geese were concentrated at the southern tip of the lake – 88 out of 90 adult birds and 15 out of 16 families. In 2011 (July 13, the west bank north of Korzok) all birds were seen at the northern tip only. Altogether 25 families with young and 32 pairs without young were registered during both visits. The mean family size reached 2.1 goslings (age of young not taken into account) (Table 1).

*Tadorna ferruginea*: Aug 4-5, 2011 – Chandra Tal lake, one pair only at the lake (with 10 small young).

*Merqus merganser*: July 29, 2007 – Tso Moriri, 1 female with 6 young.

*Buteo rufinus*: Aug 3, 2007 – Pang, 1 bird.

*Falco peregrinus*: July 14, 2011 – Pang, 1 bird; Aug 2, 2011 – Baralacha La, 1 hunting bird.

*Grus nigricollis*: July 13, 2011 – Puga, 2 adult birds feeding in salt marshes; July 14, 2011 – Tso Kar, 1 pair with a small (still rusty) chick. Two pairs of this endangered species (IUCN Red List status 2011: Vulnerable; population decreasing) were observed in traditional localities. The population in Ladakh reaches 63 birds only (based on the census in 2011 – P. Chandan, presentation at the 10<sup>th</sup> Conference of the Parties to the Convention on Migratory Species, Bergen, 21 Nov 2011).

*Gallinula chloropus*: July 8, 2011 – Shey marshes, 1 bird.

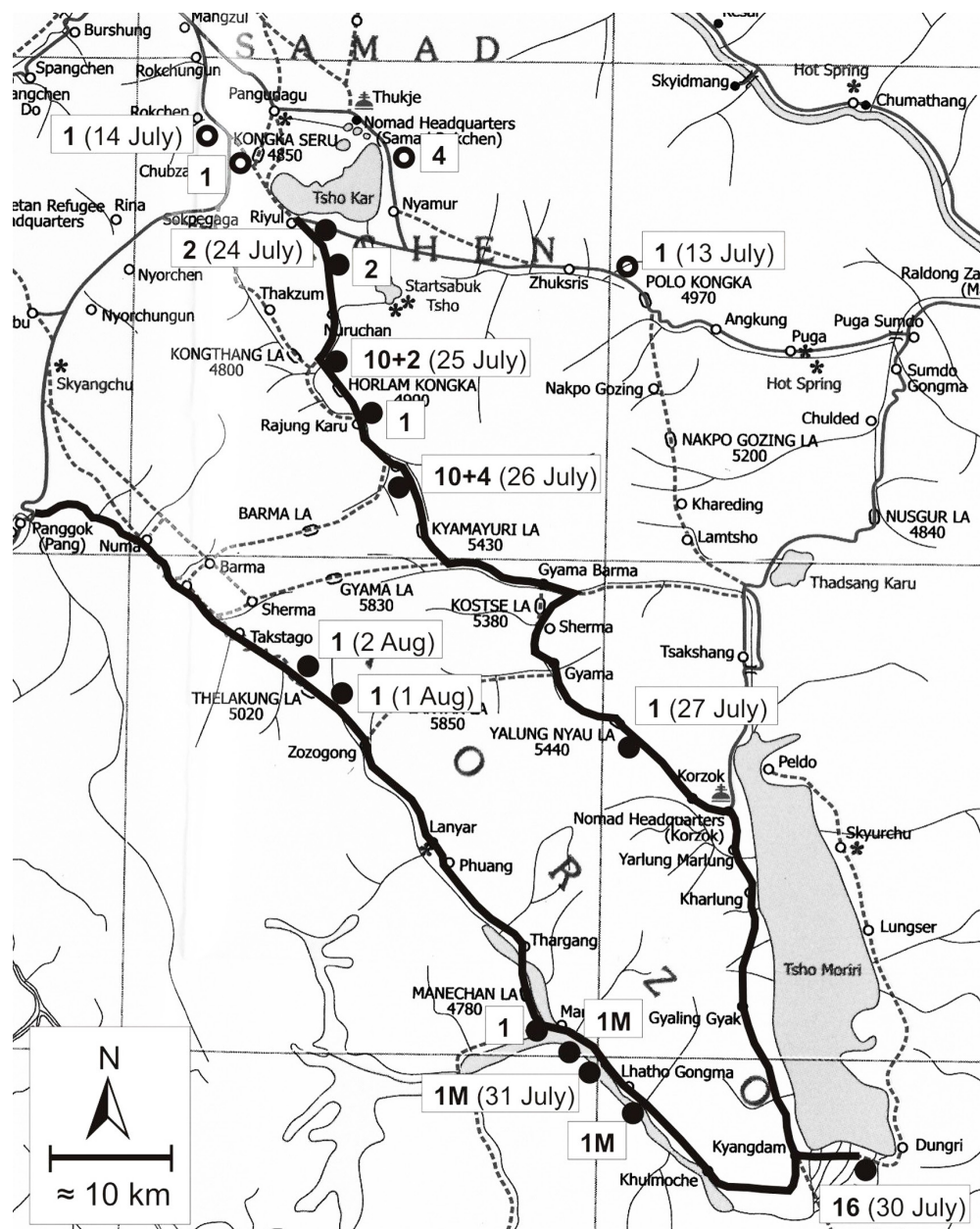
*Fulica atra*: July 8, 2011 – Shey marshes, voices of adult birds and 5 chicks. Confirmed breeding of the species in the region; Pfister (2004) states that breeding had not yet been recorded in Ladakh.

*Himantopus himantopus*: Aug 12, 2007 – Shingo La (ca 5000 m asl), 9 birds at a small lake.

*Tringa totanus*: July 14, 2011 – Tso Kar, hundreds of breeding birds.

Young	1	2	3	4	5	Average	Adults without young	Age not determined
2007	4	7	3	2	-	2.2	29 pairs	6 ind.
2011	5	2	-	1	1	2.0	3 pairs	66 ind.
<b>Total</b>	<b>9</b>	<b>9</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>2.1</b>		

**Table 1.** Abundance of *Anser indicus* and size of its families (number of pairs with 1–5 young) along the west bank of the lake Tso Moriri in July 2007 and July 2011. 2007 (July 29) – W bank from Korzok to the S tip and adjacent lake waters up to ca 200 m from the bank (age of young not distinguished), 2011 (July 13) – W bank from Korzok to the N tip, incl. the whole tip (age of young in 9 families: 5 times 1 big/white young, one 2 small/yellow, 2 big, 4 big and 5 small young) Average – mean number of young per family, Age not determined – birds too far from the observer



**Fig. 1.** Numbers, dates and localities of observations of *Equus kiang* in 2007 (black dots) and 2011 (open circles) (map source: Hanish & Co. 2010). Numbers – number of all animals observed together (in a herd), or number of adults + juveniles, or single males (1M)

*Tringa nebularia*: July 13, 2011 – Tso Moriri (northern tip), 1 bird.

*Tringa glareola*: July 29, 2007 – Tso Moriri, 1 bird.

*Calidris temminckii*: July 30, 2007 – Tso Moriri, ca 10 birds; Aug 12, 2007 – Shingo La (ca 5000 m asl), 2 birds at a small lake.

*Calidris femuginea*: July 30, 2007 – Tso Moriri, 14 birds (mostly in breeding plumage).

*Sterna hirundo*: July 13, 2011 – Tso Moriri (northern tip), 1 bird; July 18, 2011 – Zangskar river near Kargyak, 3 fishing birds; July 28, 2011 – Nialo Kontse lake, 1 fishing bird.

*Chlidonias hybridus*: July 13, 2011 – Tso Moriri (northern tip), 2 birds.

*Syrhaptes tibetanus*: Aug 1, 2007 – Zozogong, 1 pair with 3 small chicks; Aug 2, 2011 – Baralacha La, 1 bird.

*Columba livia intermedia*: July 25, 2011 – confluence of the Tsarab and Shingra rivers, several birds of this subspecies.

*Clamator jacobinus*: July 22, 2011 – Yugar (the village opposite the Phukthal monastery), 1 bird in willow shrubs. Probably the second observation of this species in Ladakh after the one published by Pfister (2004).

*Turdus merula*: Aug 1, 2011 – Tsokmitsik (Tsarab river), 1 female in riverside vegetation.

*Phylloscopus trochiloides*: In 2007 it was one of the common species present in the Zangskar valley (especially in willow shrubs near Thable, Thanso and Tantse). However, in 2011 no bird was heard during the whole stay.

*Lanius schach tricolor*: Aug 13, 2007 – Darcha, 1 bird. Pfister (2004) does not mention any occurrence of the blackheaded subspecies *tricolor* in Ladakh.

*Passer domesticus*: July 13, 2011 – Tso Moriri (Korzok), present; July 19, 2011 – Kargyak and Hi, present; July 19, 2011 – Thanso, present (according to local people for the whole year, living under roofs; in severe winters the people feed them with rice); July 19, 2011 – Shangkha, absent; July 26-27, 2011 – Shade and Thantak, present (according to local people in summer only, in winter leaving the villages). It seems there is an altitudinal limit of the species distribution in the upper Zangskar valley. The species is present in villages at the valley bottom (Kargyak) and higher on slopes (Hi, Thanso), but absent in the highest village there (Shangkha).  
*Carpodacus rhodochlamys*: July 15, 2011 – Serchu to Khamirab, 1 male.  
*Emberiza stewarti*: between Aug 8–11, 2007 – Zangskar valley, 1 male. Probably a new species for Ladakh's fauna (by comparison with all three checklists mentioned above).  
*Panthera uncia*: July 27, 2007 – Gyama Barma, footprints along a mountain brook (footprint diameter 107 mm – photodocumented); July 25-26, 2011 – confluence of the Tsarab and Shingra rivers, at night (22.<sup>45</sup>) a snow leopard attacked one of the horses resting near our tents (footprint diameter 90 mm, step ca 55 cm – photodocumented). Footprints of this endangered species (IUCN Red List status 2011: Endangered; population decreasing) were found in traditional localities. The present population in Ladakh is estimated at 250–350 animals (Shawl *et al.* 2011).  
*Canis lupus*: July 31, 2011 – Munele to Satak and further on to Tsokmitsik, many footprints and scats, skulls in a wolftrap.  
*Equus kiang*: Altogether 54 kiangs were observed along trek no. 3 in 2007, and 7 animals only on trek no. 6 in 2011 (Fig. 1). In 2007 it was a common species in areas near the lakes of Tso Kar and Tso Moriri. The present population in Ladakh comprises some 1500–2000 animals (Shawl *et al.* 2011) (IUCN Red List status 2011: Least Concern; population stable).

*Lepus oiostolus*: July 13, 2011 – Kongka (4970 m asl), 1 animal.  
*Chiroptera*: July 28, 2011 – Nialo Kontse lake (ca 4100 m asl), 1 middle-sized bat hunting for insects.

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### Appendix. List of bird and mammal species observed in different areas of Ladakh in 2007 and 2011.

Annotations: Areas: **Leh** and surroundings (S: Shey); **PT** – Pangong Tso; **TM,TK** etc. – Tso Moriri and Tso Kar (P: Pang, U-M: Upshi to Mahe); **Zan-Dar** – Zangskar valley and further on to Darcha (D); **Ser-Tod** – Serchu to Toden La; **Zan** – Zangskar valley (U: upper part from Kargyak to Purni, incl. Phukthal and Yugar; L: lower part from Purni to Tsetan); **Phu-Mar** – Phukthal to Marshun; **Mar-Tak** – Marshun to Tak; **Bar-Bat** – Baralacha La to Batal (abbreviation by a respective species means a locality of observation). Trek number (**1 to 9**) – detailed description of routes and dates in the text; \* (after some species) – more detailed information given in the text; + (birds in 2007 and all mammals) – presence (direct observation, song) of a species in a given area/locality; (+) – findings of skulls and/or horns (for ungulates), footprints, scats and/or other signs of presence (for carnivores). Relative abundance (birds in 2011) – **xxx** (very common species), **xx** (common species), **x** (single observations).

Species / Area	Leh	PT	TM,TK	Zan-Dar	TM,TK	Ser-Tod	Zan	Phu-Mar	Mar-Tak	Bar-Bat
Trek number	(1+5)	(2)	(3)	(4)	(6)	(7)	(7)	(8)	(8)	(9)
<b>Birds:</b>										
<i>Tachybaptus ruficollis</i> *	+	(S)								
<i>Podiceps cristatus</i> *			+	(TM)	xx	(TM)				
<i>Egretta garzetta</i> *	+									
<i>Anser indicus</i> *			+	(TM)	xx	(TM)				
<i>Tadorna ferruginea</i> *	+	+	+		xxx					x
<i>Anas platyrhynchos</i>	+	(S)								
<i>Mergus merganser</i> *			+	(TM)						
<i>Gypaetus barbatus</i>			+		+	x	x (U)			x
<i>Gyps himalayensis</i>			+	(P)						

continued...

<i>Buteo rufinus</i> *					+	(P)								
<i>Aquila chrysaetos</i>					+	(P)	+					x		
<i>Falco tinnunculus</i>		+			+									
<i>F. peregrinus</i> *					+						x			
<i>Tetraogallus himalayensis</i>					+		+					x		
<i>Tetraogallus</i> sp.									x		x (U)	xx	x	
<i>Alectoris chukar</i>		+							xx		xx (U,L)	xx	xx	
<i>Grus nigricollis</i> *									x					
<i>Gallinula chloropus</i> *		+				(S)								
<i>Fulica atra</i> *		+				(S)								
<i>Himantopus himantopus</i> *							+							
<i>Charadrius mongolus</i>		+	+		+				xx (TM)	x			xx	
<i>Tringa totanus</i> *					+	(TM)			xx					
<i>T. nebularia</i> *									x (TM)					
<i>T. ochropus</i>					+	(TM)	+		xx			x	x	
<i>T. glareola</i> *					+	(TM)								
<i>Actitis hypoleucos</i>		+			+	(TM)								
<i>Calidris temminckii</i> *					+	(TM)	+							
<i>C. ferruginea</i> *					+	(TM)								
<i>Larus brunnicephalus</i>		+			+	(TM)			x (TM)					
<i>Sterna hirundo</i> *									x (TM)		x (U)	x		
<i>Chlidonias hybridus</i> *									x (TM)					
<i>Syrhaptus tibetanus</i> *					+								x	
<i>Columba livia</i> *		+			+	(D)						x		
<i>C. rupestris</i>		+	+	+					xxx	xxx	xx (U,L)	xx	xx	xx
<i>C. leuconota</i>					+	(D)								
<i>Streptopelia orientalis</i>		+			+	(D)					x (U,L)			
<i>Clamator jacobinus</i> *											x (U)			
<i>Cuculus canorus</i>					+	(D)								
<i>Athene noctua</i>					+	(TK)								
<i>Apus apus</i>		+			+						x (U,L)	x		
<i>Upupa epops</i>		+	+	+					x		x (U,L)		x	
<i>Calandrella acutirostris</i>									xx					
<i>Eremophila alpestris</i>		+	+	+	+				xxx	xxx	xxx (U)	x	xxx	
<i>Alauda gulgula</i>					+				xxx	x	xx (U)			
<i>Ptyonoprogne rupestris</i>		+	+	+						x	xx (U,L)	xx	xx	
<i>Delichon urbicum</i>		+			+				x (U-M)	x	xx (U,L)	xx	xx	
<i>Anthus roseatus</i>											x (U)		x	
<i>Motacilla alba</i>		+	+		+				x (TM)		x (U)	x	x	
<i>M. citreola</i>		+	+	+	+				xx	x	xxx (U,L)	xx	xx	xx
<i>Cinclus cinclus</i>					+				x	x				
<i>Prunella rubeculoides</i>		+			+				x	x	x (U)			
<i>P. fulvescens</i>					+		+				x (U)	x	xx	
<i>Turdus merula</i> *													x	
<i>Monticola solitarius</i>		+				(S)					x (L)	x		
<i>Luscinia svecica</i>		+				(S)								
<i>Phoenicurus ochruros</i>		+	+	+	+				x	xxx	xxx (U,L)	xxx	xxx	x
<i>P. erythrogasterus</i>					+		+		x	x			x	x
<i>Oenanthe pleschanka</i>					+				xxx	x				
<i>O. deserti</i>		+			+	(TM)	+		x (TM)	x				
<i>Phylloscopus sindianus</i>		+			+				x (TM)		xx (U,L)	xx	xx	

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