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First Record of *Anas querquedula* (Linnaeus, 1758) from Chandertal and Marshy Meadows of Spiti River Near Lossar, in Himachal Pradesh, India

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ABSTRACT

Anas querquedula (Linnaeus, 1758) commonly known as garganey, has been reported for the first time from the Chandertal wetland, an internationally known Ramsar Site and from the wet meadows in the vicinity of Spiti river in Lossar village of Spiti Valley, Himachal Pradesh, India. Garganey has been reported in Himachal Pradesh from Pong Dam wetland (also a Ramsar Site) in Kangra District at an altitude of 390-423 meter above mean sea level. There it has been reported as a late visitor who arrives in the months of August and September every year. It is a new record of this bird from Chandertal wetland and from the Lossar area of Spiti river located on the Eastern side of famous Kunzum Pass.

Key words: *Anas querquedula*, first record, chandertal wetland, migration, spiti river

INTRODUCTION

Chandertal wetland is an internationally known Ramsar site, now has been declared a wildlife sanctuary (Fig. 1). It is a naturally formed fresh water body and lies on the Northern side of high Kunzum Pass. Kunzum is a high mountain pass (4591 m) on the Eastern Kunzum Range of the Himalayas from where the Spiti river originates.



Fig. 1: A picturesque view of Chandertal wetland

Migration is common in the life cycle of many species of birds but over the past two centuries migration has become even more difficult because of extensive habitat loss and fragmentation of remaining habitats. Long-term phenological changes have been used as irrefutable evidence that most plant and animal species are currently reacting to climate change (Parmesan and Yohe, 2003; Root *et al.*, 2003). In most cases, these responses are correlated with changes in ambient temperature (IPCC., 2001; Root *et al.*, 2005). Additional challenges are presented by climate change because of related increases in the frequency of extreme weather events and changes in temperatures at different latitudes affecting migration patterns. It is becoming more alarming because these natural habitats (wetlands) are in imminent danger of disappearance and begun to be exploited for tourism, hunting, construction etc. thus, becoming dangerous habitats for migrating birds. Many biological features of birds, such as: migratory behaviour (Sparks, 1999), breeding performance (Crick *et al.*, 1997), fitness components (Sanz *et al.*, 2003), population dynamics (Saether *et al.*, 2000) or geographical distribution (Thomas and Lennon, 1999) have been significantly linked to climate change.

Present study unveils the first record of *Anas querquedula* (Linnaeus, 1758) commonly known as garganey from the Chandertal wetland and from the marshy meadows in the vicinity of Spiti river at Lossar village of Spiti Valley, Himachal Pradesh, India (Fig. 2a and b). Thus, a new migration pattern of the garganey has been observed in the Trans Himalayas so far as its new habitat exploration is concerned. This new and interesting migration pattern of garganey is opening



Fig. 2(a-b): (a) Spiti river catchment area near Lossar and (b) Lossar village of Spiti Valley in cold desert of Himachal Pradesh

a new vista of avian record from the cold desert of Himachal Pradesh in general and wetland of Lahaul and Spiti in particular.

MATERIALS AND METHODS

Ducks were observed by 10×50 super Zenith field trimatic binocular (Zenith Corp., made in Korea) and 1000 mm tele-lens of Questar make (made in US) and their morphological features were noted down in detail for identification. Birds were photographed with the help of Nikon D-80 camera (Nikon DX 4 F-S Nikkor 18-135 mm 1:3.5-5.6 F ED, Nikon Corp., made in Thailand) fitted with zoom telephoto lenses (Nikon AF-VR zoom- Nikkor 80-400 mm f/4.5-5.6-D ED (5.0x) lens, Nikon Corp., made in Japan). The field identification was carried out with the help of field guides (Ali and Ripley, 1983; Grimmett *et al.*, 1998). The identification was based exclusively on their morphological characters and not a single duck was captured and killed during this investigation. This work was carried out during July-September, 2014 but the bird flocks were noticed in the month of September.

RESULTS AND DISCUSSION

Migration can be defined as the seasonal movement of a species from one place to another. Seasonal migration of a species is considered as an adaptive phenomenon evolved through ages to derive maximum advantage from ambient environmental conditions (Koen, 1992). Birds migrate to an area where food is more abundant, less competition for nesting space, the climate is milder and/or the daylight hours are longer to enhance the chances of survival of a bird and its brood. Most of the birds require a rich and abundant supply of food at frequent intervals because of their high metabolic rate. Adequate food is not available throughout the year at one particular place, therefore, inhabitant of that ecological zone start moving to a place having adequacy of food, less competition with congeneric and conspecific species and factors favorable for reproduction and ecological succession. The nature of a bird's migration can have significant consequences on bird's survival and potentially the status of their population (Hutto, 1998, 2000).

Anas querquedula belongs to the family Anatidae of order Anseriformes and generally found in marshy areas of ponds and wetlands. It is about the size of domestic duck and drake is recognized by its pink-brown white-speckled head with conspicuous broad white eyebrows and bluish grey plumage on wings and shoulders. Duck closely resembles female teal but distinguished by pale streak around the neck and chocolate brown feathers on wings. Garganey is a winter migratory bird distributed throughout the Indian Union, Bangladesh, Pakistan, Sri Lanka and Myanmar. It is one of the earliest migrants, commencing to arrive by August every year. In Himachal Pradesh, garganey has been reported from Pong Dam wetland (also a Ramsar Site) in Kangra District at an altitude of 390-423 m above mean sea level. At Pong Dam wetland it has been reported as a late visitor who arrives in late August and September every year. But recently, it has been noticed for the first time in Chandertal wetland and from the wet meadows in the vicinity of Spiti river at Lossar village of Spiti Valley, Himachal Pradesh, India. Chandertal wetland is situated at an altitude of 4168 m and is separated from the Lossar village (3948 m) by famous Kunzum La. Kunzum La is a high mountain pass (4591 m) on the eastern Kunzum Range of the Himalayas. A flock of 45-55 birds was spotted at the Chandertal wetland (Fig. 3) and three pairs were reported in the wet meadows of Spiti river at Lossar in the month of September, 2014 (Fig. 4a and b). This largely vegetarian bird is a swift flier. It is a new record of this bird from Chandertal wetland and from the Lossar area of Spiti river situated on the South-Eastern side of Kunzum Pass.



Fig. 3: A flock of garganey in Chandertal wetland



Fig. 4(a-b): (a) Female garganey in closer view and (b) Few ducks in marshy swamp in Lossar village of Spiti Valley

The breeding season of garganey is from May to June in the Palaearctic Region (Ali, 2002). Historically, the breeding range of the garganey has fluctuated considerably, with range contraction or expansion in northern areas lasting from one to several decades (Voous, 1960; Dement'ev *et al.*, 1967; Bauer and Glutz von Blotzheim, 1968; Parslow, 1973; Cramp, 1977). Explanations include displacement by drought from southern breeding areas (Cramp, 1977) and cessation of spring hunting that allowed more birds to make breeding attempts (Parslow, 1973). Kistchinski (1973) noted serious destruction of garganey habitat on Sakhalin Island (Russian island in the North Pacific Ocean) in 1969 and ban on spring hunting was imposed in the Amur region (Russian Far East) during the same period. An even more fundamental factor like global warming during the current glacial period has been postulated as a responsible factor for northern range expansion of the Tufted Duck (*Aythya fuligula*) (Palmer, 1976). It is therefore, estimated that any or all of these factors might have affected the garganey in ways that would lead to increased dispersion to an isolated places like Chandertal wetland.

Additionally, as the climate warms and evaporation and transpiration by plants increase, many of these shallow ponds may dry up or be wet for shorter periods, thus making them less suitable for ducks (Glick, 2005). The changing climatic conditions play an important role in bird's migration. Recently, Indian pond-heron (*Ardeola grayii*) has been reported for the first time beyond the high

Kunzum pass in the Spiti Valley (Thakur and Mehta, 2014). Despite the importance of this migratory phase of a bird's life, there are many difficulties in studying migratory patterns and dynamics and consequently there is a limited understanding of the migration needs and challenges for many bird species (Hutto, 1998; Mabey and Watts, 2000; Moore and Aborn, 2000; Rappole, 1995). Knowledge of the arrival dates and breeding dates of bird is important for studying long term trends of changes in timing of breeding in the ongoing climate changes (Parmesan and Yohe, 2003).

The present study unveils the new record of this bird from the area cited and this different but interesting migration pattern is opening the new vista of avian record from wetland and barren lands of Lahaul Spiti district of Himachal Pradesh, India. But more research is needed to study this interesting migration pattern and to fill the data gaps and such information could be used as an indicator tool and impact assessment on the climate changes and ecosystem of a particular area will be evaluated precisely.

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