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**Ranjit Singh**

Department of Bio-Sciences,  
M.L.S.M. College Sunder Nagar,  
District Mandi, Himachal  
Pradesh, INDIA

**DR Thakur**

Professor and Head, Department  
of Bio-Sciences, H. P. University  
Summer Hill, Shimla-5,  
Himachal Pradesh, India

## Wagtails (Motacillidae: Passeriformes: Aves) of Chandertal wildlife sanctuary in Himachal Pradesh, India

**Ranjit Singh and DR Thakur**

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### Abstract

The wagtail birds belonging to family Motacillidae are small to medium sized, mostly insectivores exhibiting worldwide distribution and breeding grounds at altitude up to 4500 m above mean sea level. The complete description of wagtail has not been yet recorded from Chandertal Wildlife Sanctuary of Himachal Pradesh. Scientific survey were conducted to fulfill this taxonomic gap which result in documentation of three species belonging to genus *Motacilla* of family Motacillidae. The studied area harbours high altitude Wetland as internationally known Ramsar site (No. 1569) due to its characteristic and few endangered flora and fauna. The Chandertal lake with 2.5 km circumference and few small semi-permanent water bodies interspersed with grassy meadows and rocky pastures, hosts different alpine chordates and non-chordate (mostly insects) fauna making ecological food web.

**Keywords:** Chandertal wetland, Wildlife Sanctuary, diversity, wagtail, passerines

### Introduction

The Chandertal wildlife sanctuary is an internationally known Ramsar site and wetland of national importance situated near the famous Kunzam Pass (4520 m above msl) on Manali – Kaza state highway no. 30. The sanctuary is situated at 32° 29'N latitude and 77° 36'E longitude with an altitude of 4337-4830 m above mean sea level, falling in the 1 B Tibetan Plateau Biogeographic zone and wetland exhibits along with few small semi-permanent land locked water reservoirs, a big half-moon shaped rock basin Lake (4370 m a msl) formed by glacial melt in land locked depression with single outlet which drains down into Chandra river. The sanctuary area remain snow covered for about five months of year making it inaccessible for humans via land transport. To give deailed account of wagtails in this semi-arid high altitude ecosystem present study has been carried out which revealed the presence of three species belonging to genus *Motacilla* of family Motacillidae. We have recorded juveniles of *Motacilla citreola* in this sanctuary (Singh R. *et al.*, 2014) <sup>[10]</sup>. There are 447 avian species inhabiting Himachal Pradesh of which 250 species belonging to only Passeriformes. Of the total account of Himachal Pradesh, Lahaul & Spiti district harbours only 74 avian species. In the relative percentage of residential status of birds of Himachal Pradesh, Lahaul & Spiti district represent about 45% birds as resident to Himalayas, 21% as summer visitor, 19% as seasonal altitudinal migrant, 9% as resident with local movements and only 2-3% as winter visitor (Mahabal 2005) <sup>[6]</sup>. The avian diversity of the Trans-Himalayan cold desert of Ladakh is represented by 310 species belonging to 150 genera of 50 families and 16 orders. Passerines dominates the whole avians of Ladakh with 157 species (Tak *et al.*, 2008) <sup>[14]</sup>.

### Materials and Methods

Various scientific field surveys were carried out in the study area from June to early October months and major observations were made in, on and around the lake and other semi-permanent water bodies present in the sanctuary along with meadows and pasture. The steppe and rock crevices were also observed for nesting habits etc. The identifying features of birds were observed with 10 × 50 super Zenith field binocular along with 1000 mm tally lens of Quester make and informations written in field note book. Wagtail were found mostly near the banks or coasts of water reservoir where we made artificial hideout for observing their habits and morphology by being statue or standstill. Nikon D-80 camera with zoom tele-lenses was used for field photography of birds and those images used for comparision with already identified species.

**Corresponding Author:**

**Ranjit Singh**

Department of Bio-Sciences,  
M.L.S.M. College Sunder Nagar,  
District Mandi, Himachal  
Pradesh, India

The identification of birds was carried out with the help of field guides of Grimmett *et al.* (1998) [3] and Kumar *et al.* (2005) [5] and nomenclature of Manakadan and Pittie (2001) [7] followed.

### Results and Discussions

Wetland are reservoir of biodiversity by providing habitat for flora and fauna so that complex food web maintained. In this high altitude Chandertal wetland and wildlife sanctuary we observed various invertebrates (mostly hibernating) and birds and mammals (mostly migratory and very few residents in lower altitude along river basin) Singh and Thakur (2012, 2013, 2021) [11, 12, 13]. Mani (1990) [8] have also reported some species belonging to Noctuidae, Nymphalidae, Satyridae, Pieridae and Lycaenidae from high altitude of Himalaya. In present studied area, wagtails commonly were found near northern bank of Chandertal and other marshy areas of sanctuary having more relative density of insects. Mostly they move their tail up and down actively. For short distances these mostly fly at low heights. We described three species *viz.* *Motacilla alba*, *M. citreola* and *M. flava* from the Chandertal wildlife sanctuary during the scientific tours of different survey years (Rana *et al.*, 2014) [9]. We recorded adults along with their juveniles of *M. citreola* which make this sanctuary as breeding ground at such a high altitude above the tree line (Singh R. *et al.*, 2014) [10], (Badyaev and Hendrick, 2001) [1]. The studied area harbors few species (3 spp.) of Motacillidae (Passeriformes) signifies that there is decrease in biodiversity with increasing altitude above tree line (Kikkawa and Williams, 1971) [4]. Systematic position and description of recorded wagtails is as follows.

<b>Class</b>	Aves	
<b>Order</b>	Passeriformes	
<b>Family</b>	Motacillidae	
<b>Genus</b>	<i>Motacilla</i>	
<b>Species</b>	<i>alba</i> Linnaeus	

1758. *Motacilla alba* Linnaeus, Syst. Nat., ed.10, 1:184.

#### Common Name: White Wagtail

**Description:** Variable colour patterns, head black and white, mantle grey, white to black wing coverts. Breeding, non-breeding and first winter bird shows considerable colour variations.

**Habitat:** Mostly near water bodies looking for aquatic *Gammarus* species and trichopteran larvae. Also noticed in open marshy and grassy pastures for feeding insects.

**Habits:** Build nest in buildings in lower areas but in higher altitude it adapt in rock crevices.

**Distribution:** Resident, winter visitor, shows altitudinal movements. Breeds in Himalaya from North-East Pakistan to Arunachal Pradesh ranging from 1500 to 5000 m above mean sea level.

<b>Class</b>	Aves	
<b>Order</b>	Passeriformes	
<b>Family</b>	Motacillidae	
<b>Genus</b>	<i>Motacilla</i>	
<b>Species</b>	<i>flava</i> Linnaeus	

1758. *Motacilla flava* Linnaeus, Syst. Nat., ed.10, 1:185.

#### Common Name: Yellow Wagtail

**Description:** Adult is about 18 cm long. Breeding male has olive green upper parts while underparts are yellowish. There is racial variations in head colour. Voice is loud disyllabic tswe-ip.

**Habitat:** Damp pastures and grassy margins of lakes and swamps.

**Habits:** Typical wagtail feeds on insects.

**Distribution:** Breeds in Western Himalayas. Found in Pakistan, Nepal, Bhutan, Bangladesh and India. In India, breeds in between 3600 to 4500 m above mean sea level. During winter it visits plain and hills upto 1800 m above mean sea level.

<b>Class</b>	Aves	
<b>Order</b>	Passeriformes	
<b>Family</b>	Motacillidae	
<b>Genus</b>	<i>Motacilla</i>	
<b>Species</b>	<i>citreola</i> Pallas	

1776. *Motacilla citreola* Pallas, Reise Russ. Reichs, 3: 696.

#### Common Name: Citrine Wagtail.

**Description:** Female possess broad yellowish supercilium, which reaches the yellow of throat, crown grey and yellow underparts. Head and underparts are yellow with black mantle.

**Habitat:** Spends summer on marshy patches below melting glaciers while durind winters around lakes and low altitude river bank.

**Habits:** Gregarious in winters, prefers wetlands, feeds mostly aquatic molluscs, crustaceans, insect's larvae and seeds.

**Distribution:** Resident and common in Himalayas upto 5000 m while winters in plains, India, Pakistan, Nepal, Bhutan and Bangladesh.

### Conclusions

In the Chandertal wetland and wildlife sanctuary, three species of genus *Motacilla* were observed with 10 × 50 super Zenith field binocular along with 1000 mm tally lens of Quester make and photographed with Nikon D 80 camera

with zoom tele lenses. The presence of *Motacilla alba*, *M. citreola* and *M. flava* have been confirmed in studied area during July to October months. The juveniles of *M. citreola* confirms their breeding at such high altitude ecosystem. None of pipits species belonging to Motacillidae were noticed. Although the studied area is protected as wildlife sanctuary but still strict protective measures must be implemented especially during tourist season which directly or indirectly deteriorates the natural environment needed for rich biodiversity. The wagtail species viz. *Motacilla citreola* and *Motacilla alba* found in Sanctuary are listed in Schedule IV of the Wildlife Protection Act, 1972 (BNHS, 2002) [2].

India 2008;108(Part-2):27-53.

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