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## Avian Species of Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest in district Kurukshetra, Haryana (India)

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### Abstract

During periodic visits from February, 2008 to Februarys, 2009, Scan sampling method (Altman, 1974) was followed to record avian fauna of Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest, Haryana (India). In Saraswati Plantation Wildlife Sanctuary, 17 species of birds, namely, *Acridotheres tristis*, *Corvus splendens*, *Dendrocitta vagabunda*, *Turdoides caudatus*, *Turdoides striatus*, *Phalacrocorax niger*, *Phalacrocorax carbo*, *Ardeola grayii*, *Babulus ibis*, *Dendrocygna javanica*, *Anas clypeate*, *Haliastur indus*, *Pavo cristatus*, *Columba livia*, *Psittacula krameri*, *Halcyon smyrnensis* and *Saxicola torquata* while in Bir Sonty Reserve Forest, 15 species of birds, namely, *Acridotheres tristis*, *Corvus splendens*, *Dendrocitta vagabunda*, *Turdoides caudatus*, *Turdoides striatus*, *Phalacrocorax carbo*, *Ardeola grayii*, *Dendrocygna javanica*, *Anas clypeate*, *Haliastur indus*, *Pavo cristatus*, *Columba livia*, *Psittacula krameri*, *Halcyon smyrnensis* and *Saxicola torquata* were recorded. Order Passeriformes has recorded with maximum percentage of species, i.e. 35% and 40% in Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest respectively.

**Keywords:** Biodiversity, Fauna, Sanctuary, Forest, Haryana.

### 1. Introduction

Birds are very fascinating creatures of nature and are important part of biodiversity. They are bipedal, warm blooded vertebrate animals (Ali, 2002; Acharya *et al.*, 2010). These are characterized by feathers, a beak with no teeth, laying of hard shell eggs with a size range from 60mm (bee, Humming bird) to 13cm x 16cm (Ostrich) (Huxley, 1868; Ali and Ripley, 1968). Amongst the most fascinating aspects related to birds is their ability to fly via pushing themselves through the air with the help of wings. Some birds can glide on air currents without flapping while some birds can hover and remain stationary in one place in the air for long (Baker, 1935; Sihag, 1991; Allen, 2002; Awan, 2004). Birds adapt or change themselves to make possible for them to live in varying conditions, i.e., from freezing cold environment (Penguins, Albatrosses, Storm Petrels etc.) to hot deserts environment (Bustard, Roadrunner etc.). Birds vary in appearance, size, shape of beak, length of legs and colour of body. India, one of the 17 mega diversity nations of the World, harbours different types of habitats ranging from snow cloud Himalayas in the North to Deccan plateau in the South, Indo-Gangetic plains in the central region and rain forest in the North-East to arid desert in the West. Besides, it has 2 of the world's eighteen biodiversity hotspots located in the Western Ghats and Eastern Himalayas (Myers, 1999). It has a rich geographical diversity and biological heritage comprising nearly 8100 vertebrate species including 340 species of mammals, 1250 species of birds, 420 species of reptiles and 142 species of amphibians (Narang, 2000). However, scanty information is available on various aspects of avian species in Haryana. Therefore, present study was planned to assess avian species in Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest in district Kurukshetra, Haryana (India).

### 2. Materials and Methods

Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest were selected as study site (Fig. 1). Saraswati Plantation Wildlife Sanctuary (76° 33' E latitude and 29° 56'- 30° N longitude) is located in between two districts (Kurukshetra and Kaithal) of Haryana and occupies an area of 11,003 acres (Fig. 1). The climate of area is subtropical, semi-arid type and contain alkali soil. Annual rain fall in the area is 516 mm and average temperature is 32.4 °C and vegetation of the Saraswati Plantation Wildlife Sanctuary is categorized as "Sub-group 5B

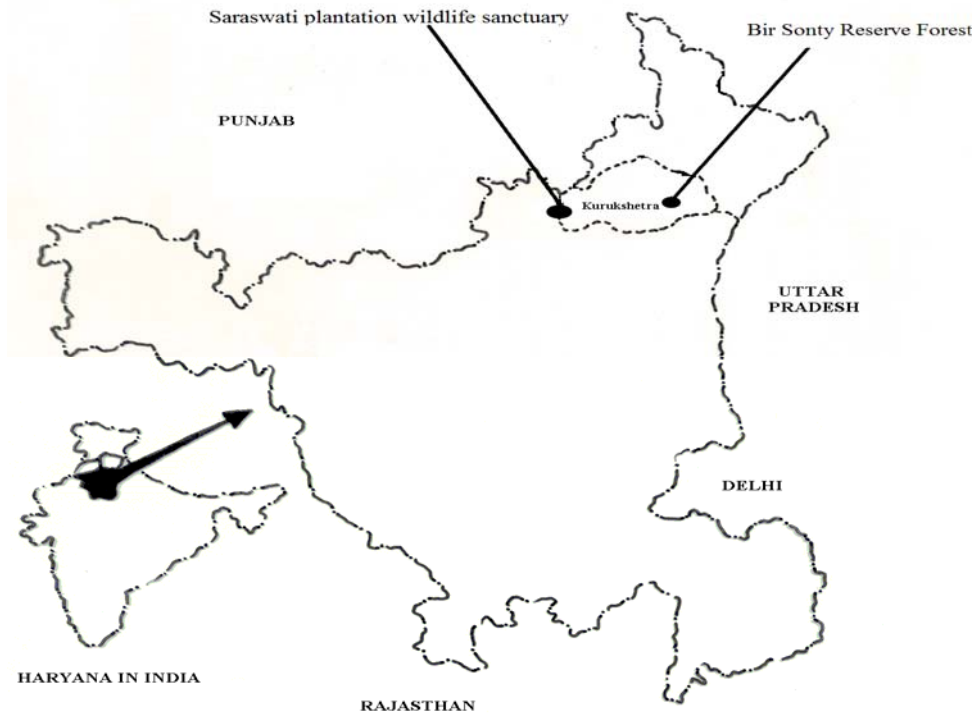
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tropical deciduous forest” (Dagar *et al.*, 2001). Bir Sonty Reserve Forest (30° 0' E latitude and 77° 1' N longitude) is also located on Kurukshetra-Ladwa link road around 20 Km East of Kurukshetra University campus and spread over an area of 474.50 acres (Fig. 1). Bir Sonty Reserve Forest is an artificial forest and contains majority of the cultivated plants. The area has dark colored, alluvial soil rich in organic matter

and having high water retention capacity. During periodic fortnightly visits (from February, 2008 to February, 2009), Scan sampling method (Altman, 1974) was followed to record avian species in Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest. Sighted avian species were identified followed by Ali, 2002; Garwa, 2008; Gupta and Kumar, 2008.



**Fig 1:** Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest in district Kurukshetra, Haryana (India).

**3. Results and Discussion**

In the present study, Saraswati Plantation Wildlife Sanctuary, 17 species of birds, namely, *Acridotheres tristis*, *Corvus splendens*, *Dendrocitta vagabunda*, *Turdoides caudatus*, *Turdoides striatus*, *Phalacrocorax niger*, *Phalacrocorax carbo*, *Ardeola grayii*, *Babulus ibis*, *Dendrocygna javanica*, *Anas clypeate*, *Haliastur indus*, *Pavo cristatus*, *Columba livia*, *Psittacula krameri*, *Halcyon smyrnensis* and *Saxicola torquata* while in Bir Sonty Reserve Forest, 13 species of birds, namely, *Acridotheres tristis*, *Corvus splendens*, *Dendrocitta vagabunda*, *Turdoides caudatus*, *Turdoides striatus*, *Phalacrocorax carbo*, *Ardeola grayii*, *Dendrocygna javanica*, *Anas clypeate*, *Haliastur indus*, *Pavo cristatus*, *Columba livia*, *Psittacula krameri*, *Halcyon smyrnensis*, *Saxicola torquata* were recorded (Table 1).

According to Hosetti and Caplon (2001) and Animal Web Diversity (2012), the country is estimated to have over 45000 plants species and 81000 animal species representing 7% and 6.5% of the world flora and fauna respectively. Aggarwal

(2002), however, has reported about 2546 species of fishes, 204 species of amphibians, 446 species of reptiles, 1228 species of birds and 372 species of mammals in India. Newton *et al.* (1986), Tyabji (1994) and Bhatt and Sharma (2000) recorded a total number of 154 avian species belonging to 17 orders of 53 families in Khanha Tiger Reserve, Madhya Pradesh; 161 avian species belonging to 18 orders of 53 families and 70 avian species belonging to 30 families of 14 orders in Rajaji National Park Uttarakhand, respectively. Similarly, Allen (2002) reported 107 avian species including five threatened species, *viz.*, Greater Adjutant, Ferruginous Pochard, Jerdon’s Babbler, Black-breasted, Parrot Bill and Marsh Babbler in Dibru saikhowa Biosphere Reserve (Assam). Also, Urfi (2003) reported 302 avian species including three vulnerable species (Baer’s Pochard, Indian Skimmer and Bristled Grassbird) and six near threatened species (Ferruginous Pochard, Black-bellied Tern, Darter, Black-headed Ibis, Painted Stork and Black-necked Stork in protected area of Delhi (Okhla Barrage Bird Sanctuary).

**Table 1:** Prevalent avian fauna in Saraswati Plantation Wildlife Sanctuary and Bir Sonty Reserve Forest, Kurukshetra, Haryana (India).

No.	Avian species				
	Local name	Scientific name	Order	SPWS	BSRF
1	Common Myna	<i>Acridotheres tristis</i>	Passeriformes	+	+
2	Common crow	<i>Corvus splendens</i>	Passeriformes	+	+
3	Indian treepie	<i>Dendrocitta vagabunda</i>	Passeriformes	+	+

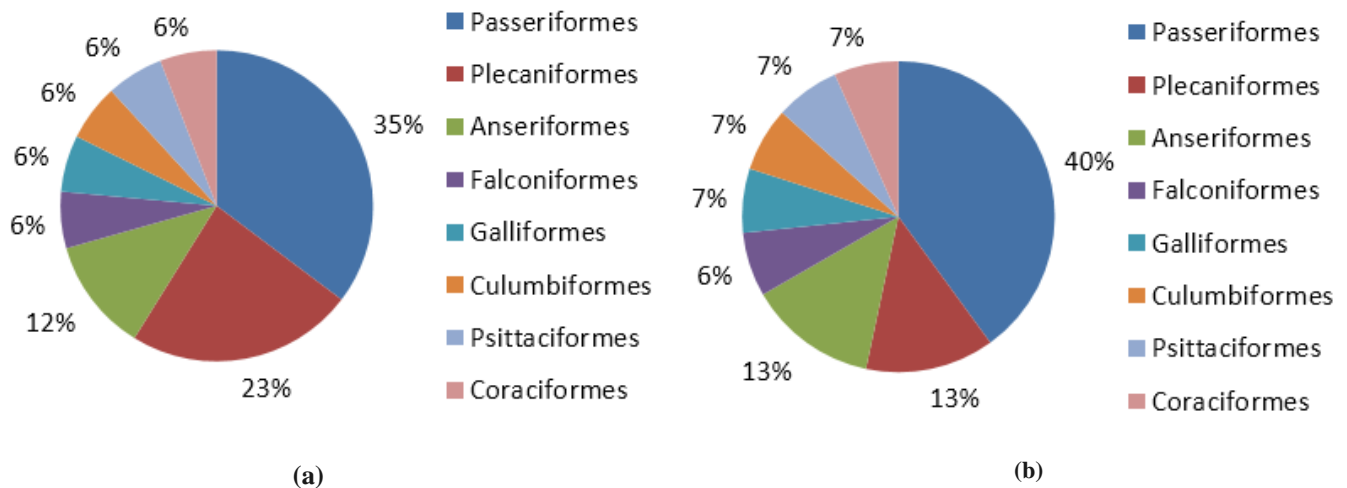
4	<b>Common babbler</b>	<i>Turdoides caudatus</i>	Passeriformes	+	+
5	<b>Jungle babbler</b>	<i>Turdoides striatus</i>	Passeriformes	+	+
6	<b>Little cormorant</b>	<i>Phalacrocorax niger</i>	Pelecniiformes	+	-
7	<b>Great cormorant</b>	<i>Phalacrocorax carbo</i>	Pelecniiformes	+	+
8	<b>Indian pond heron</b>	<i>Ardeola grayii</i>	Pelecniiformes	+	+
9	<b>Cattle egret</b>	<i>Babulus ibis</i>	Pelecniiformes	+	-
10	<b>Lesser whistlingduck</b>	<i>Dendrocygna javanica</i>	Anseriformes	+	+
11	<b>Northern shoveller</b>	<i>Anas clypeate</i>	Anseriformes	+	+
12	<b>Brahminy kite</b>	<i>Haliastur Indus</i>	Falconiformes	+	+
13	<b>Indian pea fowl</b>	<i>Pavo cristatus</i>	Galliformes	+	+
14	<b>Blue rock pigeon</b>	<i>Columba livia</i>	Columbiformes	+	+
15	<b>Rose ringed parakeet</b>	<i>Psittacula krameri</i>	Psittaciformes	+	+
16	<b>White breasted kingfisher</b>	<i>Halcyon smyrnensis</i>	Coraciiformes	+	+
17	<b>Common stonechat</b>	<i>Saxicola torquata</i>	Passeriformes	+	+

+ Present; - Absent; SPWS- Saraswati Plantation Wildlife Sanctuary; BSRF- Bir Sonty Reserve Forest

Earlier coworkers likes Whistler (1918) studied the birds of Hisar and Ambala district Haryana. Afterward, Yadav and Malyavar (1978, 1981), Gupta and Bajaj (1997), Kalsi, (1998), Bajaj (2002), Tirshem (2008), Garwa (2008) and Gupta and Kumar (2009) have reported 203 species of birds in whole of Haryana, 23 wetland birds at Brahamsarovar (Kurukshetra), 161 species from Kalesar wildlife sanctuary (Yamunanagar), 202 species of birds from four bird sanctuaries, 80 wetland bird species from Northern Haryana, 87 species from Kurukshetra and 110 species of birds in and around Kurukshetra respectively.

Kumari (2014) reported avian species belonging to 40 families of 15 orders, namely, Podicipediformes, Pelecniiformes, Ciconiiformes, Anseriformes, Falconiformes, Galliformes,

Gruiiformes, Charadriiformes, Columbiformes, Psittaciformes, Cuculiformes, Strigiformes, Apodiformes, Coraciiformes and Passeriformes (maximum 62 species) in Sultanpur National Park. Similarly, in the present study, maximum percentage of avian species was found to fall under the order Passeriformes (35%) followed by Pelecniiformes (23%), Anseriformes (12%), Falconiformes, Galliformes, Columbiformes, Psittaciformes and Coraciiformes (6% each) in Saraswati Plantation Wildlife Sanctuary (Fig. 2a). Likewise in Bir Sonty Reserve Forest, maximum percentage of avian species belonging to the order Passeriformes (35%), followed by Pelecniiformes and Anseriformes (13% each), Galliformes, Columbiformes, Psittaciformes, Coraciiformes (7% each) and least of 6% in order Falconiformes (Fig. 2b).



**Fig 2:** Order-wise percentage distribution of avian fauna in (a) Saraswati Plantation Wildlife Sanctuary and (b) Bir Sonty Reserve Forest in district Kurukshetra, Haryana (India).

**4. Conclusion**

Birds are very fascinating creatures of nature and are important part of biodiversity. Not much work has been done on various aspects on ecology, behaviour and conservational strategies of birds in Haryana, particular. In Saraswati Plantation Wildlife Sanctuary, 17 species of birds, namely, *Acridotheres tristis*, *Corvus splendens*, *Dendrocitta vagabunda*, *Turdoides caudatus*, *Turdoides striatus*, *Phalacrocorax niger*, *Phalacrocorax carbo*, *Ardeola grayii*, *Babulus ibis*, *Dendrocygna javanica*, *Anas clypeate*, *Haliastur indus*, *Pavo cristatus*, *Columba livia*, *Psittacula krameri*, *Halcyon smyrnensis* and *Saxicola torquata* while in Bir Sonty Reserve

Forest, 13 species of birds, namely, *Acridotheres tristis*, *Corvus splendens*, *Dendrocitta vagabunda*, *Turdoides caudatus*, *Turdoides striatus*, *Phalacrocorax carbo*, *Ardeola grayii*, *Dendrocygna javanica*, *Anas clypeate*, *Haliastur indus*, *Pavo cristatus*, *Columba livia*, *Psittacula krameri*, *Halcyon smyrnensis*, *Saxicola torquata* were recorded. A number of stress factors, i.e., human activities in study areas, habitat destruction, reduction in numbers of preferred tree species which provide adequate protection against predators during roosting, continuous use of pesticides or pesticides treated seeds in the agricultural fields nearby study areas by farmers to prevent damage from pests, existence of electromagnetic

waves emitting from telecommunication towers nearby the study areas, existence of predators such as dogs, cat etc., lack of food items in study areas, reduction in water resources, environmental pollution, extremes of temperature changes and variation in rainfall were noticed which may be responsible for the less number of avian species in the study sites.

## 5. References

1. Acharya BK, Vijayan L, Chettri B. The bird community of Shingba Rhododendron Wildlife Sanctuary, Sikkim, Eastern Himalayas, India. *Tropical Ecology* 2010; 51(2):149-159.
2. Aggarwal M. Selection of avian prey by wintering sparrow hawks, *Accipiter nisus* in Southern Scotland. *Ardea* 2002; 83:381-389.
3. Ali S. The book of Indian birds. Oxford University Press, Mumbai 2002; 3(11):118.
4. Ali S, Ripley SD. Handbook of the birds of India and Pakistan Vol 10, Oxford University Press, Bombay 1968, 235.
5. Allen D. A bird survey of the Amarpur area of the Dibru-Saikhowa Biosphere Reserve, Assam, India. *Forktail* 2002; 18:87-91.
6. Altman J. Observation study of behavior: sampling methods. *Behaviour* 2002; 49:227-265.
7. Animal Diversity Web. Birdnet Bird Account 2012.
8. Awan NM, Awan SM, Ahmed KB, Khan AA, Dar NI. A preliminary study on distribution of avian fauna of Muzaffarabad-Azad Jammu and Kashmir, Pakistan. *International Journal of Agriculture and Biology* 2004; 6(2):300-302.
9. Bajaj M. Studies on the Avian Fauna of Bird Sanctuaries, Ph.D. Thesis, Department of Zoology, Kurukshetra University Kurukshetra, Haryana (India) 2002, 1-157.
10. Baker ECS. The nidification of birds of the Indian empire 3 Vol, Taylor and Francis London, 1935.
11. Bhatt D, Sharma R. Diversity, status and feeding ecology avifauna in Motichur area of Rajaji National Park, India. *Canadian Journal of Zoology* 2000; 8(2):179-191.
12. Dagar JC, Singh G, Singh NT. Evaluation of forest and fruit tree used for rehabilitation of semiarid alkali-sodic soil. *India Journal of Arid land Research and Management*, 2001; 15(2):115-133.
13. Garwa R. Study on Avian biodiversity of District Kurukshetra Suburbs, Haryana, India, M.Phil. Dissertation, Kurukshetra University, Kurukshetra 2008:1-102.
14. Gupta RC, Kumar S. Determination of avian bio diversity in Morni hills in district Panchkula, Haryana. *Journal of Advanced Zoology* 2009; 30(1):44-53.
15. Gupta RC, Bajaj M. Preliminary investigations into migratory wetland birds of Brahma Sarovar at Kurukshetra. *Jeevant* 1997; 15:29-41.
16. Hosetti VV, Calpan JR. Daily patterns of energy storage in food caching birds under variable daily predation risk: a dynamic state variable model. *Behavioural Ecology and Sociobiology* 2001; 50:239-250.
17. Huxley C. Birds of Ranthumbhore national park, Rajasthan. *Journal of Bombay Natural History Society* 1868; 38(3):121-127.
18. Kalsi RS. Birds of Kalesar Wild Life Sanctuary, Haryana (India). *Forktail* 1998; 13:29-32.
19. Kumari S. Ph.D. thesis on A Study on Avian biodiversity of Sultanpur National Park, Haryana (India). Department of Zoology, Kurukshetra University, Kurukshetra, Haryana (India) 2014, 1-193.
20. Myres PN. The atlas of Australian birds. Melbourne University Press, Melbourne 1999:1-138.
21. Narang ML. Wildlife, in, Verma LR. (Eds.) nature resource and development in Himalaya. Malhotra Publishing House, New Delhi 2000 103(2-3):11-13.
22. Sihag RC. Ecology of European honey bee (*Apis mellifera*) in semi arid and subtropical climates II: seasonal incidence of diseases, pests, predators and enemies. *Korean Journal Apiculture* 1991; 6:16-26.
23. Tirshem K. Study of Wetland Avifauna of Seven Districts of Haryana. Ph.D. Thesis, Kurukshetra University, Kurukshetra 2008, 1-112.
24. Urfi AJ. The birds of Okhla Barrage bird Sanctuary, Delhi, India. *Forktail* 2003; 19:39-50.
25. Whistler H. Notes on the birds of Ambala District, Punjab Part II. *Journal of Bombay Natural History Society* 1918; 26(1):665-681.
26. Yadav JS, Maleywar RP. The birds of Haryana, a few more spotting. *Pavo* 1981; 19:51-55.