Indian Journal of Fundamental and Applied Life Sciences ISSN: 2231-6345 (Online)
An Online International Journal Available at http://www.cibtech.org/jls.htm
2012 Vol. 2 (1) January- March, pp. 1-7/Gupta et al.
Research Article

WINTER MIGRATORY WETLAND BIRDS IN HARYANA ARE CONFRONTING ADVERSE CONDITIONS IN RURAL PONDS RESULTING IN REDUCTION IN ARRIVAL NUMBER: A CASE STUDY OF VILLAGE AMIN IN THANESAR BLOCK IN KURUKSHETRA DISTRICT

Rohtash Chand Gupta[1], *Tirshem Kumar Kaushik[2] and Prem Kumari Gupta3
[1]Department of Zoology, Kurukshetra University, Kurukshetra, Haryana; Institute of Environment Studies, Kurukshetra University, Kurukshetra, Haryana)
E Mail:-rohtashchandgupta@rediffmail.com
[2]Govt. Senior Secondary School, Umri, Kurukshetra, Haryana.
E-Mail:-tarshemkaushik@rediffmail.com
[3]Department of Chemistry, Indira Gandhi National College, Ladwa, Kurukshetra, Haryana.
**Author for Correspondence*

ABSTRACT
The present studies deal with winter migratory birds that arrive in à very healthy pond namely Suraj-Kund in Amin Village in Thanesar blocks in Kurukshetra district in Haryana (29° 55′ 0″ N, 76° 51′ 0″ E). The present study reveals that a total of 46 species of wetland birds belonging to 8 orders and 14 families were observed from this holy pond. Out of these 46 species of wetland birds, 22 species of birds were winter migratory, 8 species were local migratory, 13 species resident and only three species were summer migratory. The present studies hint towards those conditions and reasons which have discouraged birds during 2007-2011 i.e. only 4 years. The familiar migratory birds observed in 2007 include Bar-headed Goose *Anser indicus*, Gadwall *Anas strepera*, Eurasian Wigeon *Anas penelope*, Mallard *Anas platyrhynchos*, Northern Pintail *Anas acuta*, Northern Shoveller *Anas clypeata*, Common Pochard *Aythya ferina*, White-tailed Lapwing *Vanellus leucurus*, Common Sandpiper *Actitis hypoleucos*, Ruff *Philomachus pugnax*, Marsh Sandpiper *Tringa stagnatilis*, Wood Sandpiper *Tringa glareola*, Pied Avocet *Recurivirostra avosetta*, Comb Duck *Sarkidiornis melanotos*, Spotted Redshank *Tringa erythropus* and Common Redshank *Tringa totanus* amongst several other terrestrial ones. However, the birds seen in 2008 declined which continued through 2009-2010 and 2011.The few birds seen in 2011 include Northern Shoveller (20 birds), Northern Pintail (13 birds), Common Teal (4 Birds) and Gadwall (8 birds)
The main reason for this destructive development for the conservation of migratory birds includes the large scale interference with the topography of the pond. The large part of the pond has been land filled and encroached upon for the sake doing hackneyed daily chores by the villagers. This paper attempt to highlight the practice of deliberate destruction of the old traditional rural ponds which have served as good sojourning locations in India for migratory birds which come from as far away distance like Siberia, China, Russia, and mid Himalayas since time immemorial. This negative trend if not checked on war footing, the migratory birds' arrival in Haryana will be hundred percent in doldrums. The paper urge upon Govt. of Haryana to take urgent steps to ensure conservation of rural ponds and thus conservation of avian diversity

Key Words: *Suraj-Kund, Amin Village, Migratory Birds, Destruction of Ponds*

INTRODUCTION
One can glance winter migratory birds parading in the cold and calm waters of rural ponds, roadside, puddles, Jheels, dams, barrages and virtually in each and every wetland in Haryana between late September and late February –each winter season. Merely up to 1990s, the number and rich diversity of

these winter migratory birds was astonishing and amusing. However, in the recent years, specially between 2005 and 2011, all these water-fronts have been land filled, polluted, destroyed, altered, transformed towards the worse thus threatening the globally significant and already acutely endangered birds of our world. This paper highlights this on-going destruction process for birds' diversity by actually focusing attention on a healthy, rural perennial pond in a historical village Amin in Thanesar block in Kurukshetra district in Haryana. No work has been done on these lines in Haryana and hence this paper. At the same times, relevant to migratory birds' diversity; Gupta *et al*. (2010); Gupta *et al*. (2009, 2010 a-c) and Gupta and Kaushik (2010a-e, 2011a-b) have done substantial research work.

MATERIALS AND METHODS

The present studies have been carried out in the vicinity of historical "TIRTH-STHAL" called Suraj-Kund in Amin village in Kurukshetra district in Haryana during 2005-11. The Amin Village is located at a distance of about 8 kilometers from Kurukshetra city. The geographical position is 29° 55′ 0″ N, 76° 51′ 0″ E.

Monthly visits were made during 2005 to 2011 either by chance or by way of a larger survey for PhD dissertation during 2005-08. The camera used was Zenith 1986 model with 200M tele lens and Digital Camera Nikon COOLPIX P500. Wetland birds observed from Suraj-Kund Pond in Amin village were categorized into various categories like: "Resident"; "Winter Migratory"; "Local Migratory" by following the technique developed by Kumar *et al*. (2005). Birds were identified with the help of reference books (Ali and Ripley, 1987; Ali, 1996; Grimmet *et al*., 1998; and Kumar *et al*., 2005). Nomenclature follows Manakadan and Pittie (2001).

RESULTS AND DISCUSSION

It is evident from Table-1 that rich varieties of birds used to come in Amin village pond in Kurukshetra district in Haryana during 2005-11. It is interesting to note that every small and big wetland of all hues receive water fowls in Haryana and so is the case in its neighbouring states like Punjab, Delhi, Himachal Pradesh, Rajasthan and Uttar Pradesh,. As per the present studies, atleast 46 species of wetland birds were observed from Amin village pond in Thanesar block in Kurukshetra district in Haryana. These are segregated over 8 orders and 14families. Out of 46 species of wetland birds observed from Amin Pond in Kurukshetra district, 22 species of birds were winter migratory, 8 species were local migratory, 13 species resident and only three species were summer migratory (Fig.3).

The prominent migratory birds among these include Lesser- whistling Duck *Dendrocygna javanica*, Bar-headed Goose *Anser indicus*, Comb duck *Sarkidiornis melanotos*, Gadwall *Anas strepera*, Eurasian Wigeon *Anas penelope*, Mallard *Anas platyrhynchos*, Spot-billed Duck *Anas poecilorhyncha*, Northern Pintail *Anas acuta*, Garganey, Northern Shoveller *Anas clypeata*, and Common Teal *Anas crecca* (Table-1).

It is important to mention that Gupta and Kaushik (2010b) reported 66 species of wetland birds from rural village ponds in Kurukshetra district in Haryana. At the same time, Gupta *et al*. (2010b) observed 63 species of wetland birds from Kaithal district in Haryana. Also, Gupta *et al*. (2009) recorded 72 species of wetland birds from village ponds in Karnal district. It is interesting to point out that birds like Darter *Anhinga melanogaster*, Painted Stork *Mycteria leucocephala*, Asian Openbill Stork *Anastomus oscitans*, Tufted Pochard *Aythya fuligula*, Little Ringed Plover *Charadrius dubius*, Black-tailed Godwit *Limosa limosa*, Little Stint *Calidris minuta*, Temminck's Stint *Calidris temminckii*, Spotted Greenshank *Tringa guttifer* and Pallas's Gull could not be observed from this holy pond but these birds were observed from other rural ponds in Kurukshetra district.

The most dominant Order Charadriiformes is represented by wetland birds like Pheasant-tailed Jacana *Hydrophasianus chirurgus*, Kentish Plover *Charadrius alexandrinus*, Yellow- wattled Lapwing *Vanellus malabaricus*, Red-wattled Lapwing *Vanellus indicus*, White-tailed Lapwing *Vanellus leucurus*, Spotted

Redshank *Tringa erythropus*, Common Redshank *Tringa totanus*, Common Sandpiper *Actitis hypoleucos*, Ruff *Philomachus pugnax*, Marsh Sandpiper *Tringa stagnatilis*, Wood Sandpiper *Tringa glareola*, Black-winged Stilt *Himantopus himantopus*, Pied Avocet *Recurivirostra avosetta* and River Tern *Sterna aurantia* (Fig.1). Further, the next dominant order Anseriformes is represented by water birds like Lesser-whistling Duck *Dendrocygna javanica*, Bar-headed Goose *Anser indicus*, Comb duck *Sarkidiornis melanotos*, Gadwall *Anas strepera*, Eurasian Wigeon *Anas penelope*, Mallard *Anas platyrhynchos*, Spot-billed Duck *Anas poecilorhyncha*, Northern Pintail *Anas acuta*, Garganey, Northern Shoveller *Anas clypeata*, and Common Teal *Anas crecca* (Fig.1). The least represented Orders are Falconiformes and Podicipediformes which include birds like Brahminy Kite *Haliastur Indus* and Little Grebe *Tachybaptus rufficollis* respectively (Fig.1). It is pertinent to point out here is that several of these birds that come to Amin pond come from far off places like China, Russia, Siberia and Tibet west and central Asia etc.

The few other important birds spotted in the vicinity of suraj-Kund tirth in Amin village are White-necked Stork *Ciconia episcopus,* Oriental White Ibis *Threskiornis melanocephalus,* White-tailed Lapwing *Vanellus leucurus,* Yellow-wattled Lapwing *Vanellus malabaricus,* Lesser Pied Kingfisher *Ceryle rudis* and Black Ibis *Pseudibis papillosa,* The family Anatidae is most dominant family represented by 12 species of waterfowls followed by Ardeidae (7 Spp) and Scolopacidae (6Spp) The present studies hint towards the fact that the threats to birds in rural ponds in Haryana are a multitude of surmounting irresponsible use of an invaluable natural resource as epitomized by a traditional ponds. To mention few of these; extremely polluted water linked with dumping of each and every discarded item in the ponds. Most severe source of polluting pond water is the cow-dung carried into the mainstream by the run-off rainy water rendering it into a horrible black soup. The most dangerous adverse circumstance is the result of ever decreasing water capacity of ponds due to siltation, encroachment for house building in the accompaniment of speedily eutrophication accelerated by over-excessive growth of hyacinth. An equal level threat is posed by the FISH-FARMING practices on modern lines promoted by Govt. of Haryana by doling out huge subsidies on fingerlings as seeds, at the very door-step colossal technical expertise and guidance through the most responsible interface with Krishi Gyan Kendras.

It is pertinent to mention that the said pond was full of water and every corner was dotted with birds in December-January in 2007-08. However upto2008, the pond was totally in doldrums with virtually no water and hence no migratory birds. Thus one good sojourning place for migratory birds has gone into oblivion for good. It is not a single case in isolation. Instead, it is process that is depleting the wetlands

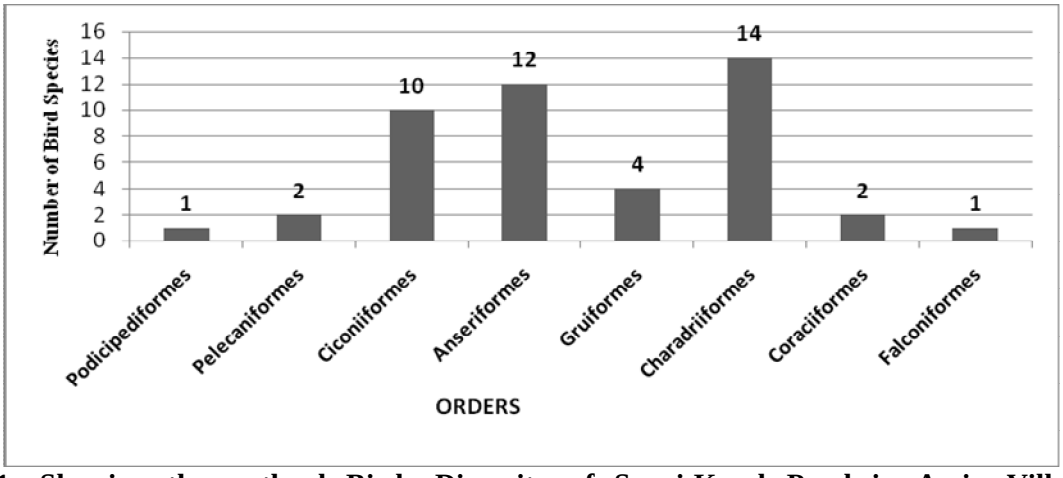

Figure 1: Showing the wetland Birds Diversity of Suraj-Kund Pond in Amin Village in Kurukshetra district in order-wise manner during 2005-11

Table 1: Checklist of Wetland Birds of Suraj-Kund Pond in Amin Village in Kurukshetra District In Haryana During 2005-11

S.No	Common Name	Scientific Name	Residential Status
PODICIPEDIFORMES		**PODICIPEDIDAE**	
1	Little Grebe	*Tachybaptus rufficollis* (Pallas, 1764)	R
PELECANIFORMES		**PHALACROCORACIDAE**	
2	Little Cormorant	*Phalacrocorax niger* (Vieillot, 1817)	R
3	Great Cormorant	*Phalacrocorax carbo* (Linnaeus, 1758)	LM
CICONIIFORMES		**ARDEIDAE**	
4	Little Egret	*Egretta garzetta* (Linnaeus, 1766)	LM
5	Grey Heron	*Ardea cinerea* Linnaeus, 1758	WM
6	Purple Heron	*Ardea purpurea* Linnaeus, 1766	LM
7	Large Egret	*Casmerodius albus* (Linnaeus 1758)	LM
8	Median Egret	*Mesophoyx intermedia* (Wagler 1829)	LM
9	Cattle Egret	*Bubulcus ibis* (Linnaeus, 1758)	R
10	Indian Pond-Heron	*Ardeola grayii* (Sykes, 1832)	R
		CICONIIDAE	
11	White-necked Stork	*Ciconia episcopus* (Boddaert, 1783)	LM
		THRESKIORNITHIDAE	
12	Oriental White Ibis	*Threskiornis melanocephalus* (Latham,1790)	LM
13	Black Ibis	*Pseudibis papillosa* (Temminck, 1824)	R
ANSERIFORMES		**ANATIDAE**	
14	Bar-headed Goose	*Anser indicus* (Latham,1790)	WM
15	Lesser- whistling Duck	*Dendrocygna javanica* (Horsfield, 1821)	SM
16	Comb Duck	*Sarkidiornis melanotos* (Pennant, 1769)	SM
17	Gadwall	*Anas strepera* Linnaeus, 1758	WM
18	Eurasian Wigeon	*Anas penelope* Linnaeus, 1758	WM
19	Garganey	*Anas querquedula* Linnaeus, 1758	WM
20	Mallard	*Anas platyrhynchos* Linnaeus, 1758	WM
21	Spot-billed Duck	*Anas poecilorhyncha* J.R. Forester, 1781	WM
22	Northern Shoveller	*Anas clypeata* Linnaeus, 1758	WM
23	Northern Pintail	*Anas acuta* Linnaeus, 1758	WM
24	Common Teal	*Anas crecca* Linnaeus, 1758	WM
25	Common Pochard	*Aythya ferina* (Linnaeus, 1758)	WM
GRUIFORMES		**RALLIDAE**	
26	White-breasted Waterhen	*Amaurornis phoenicurus* (Pennant, 1769)	R
27	Purple Moorhen	*Porphyrio porphyrio* (Linnaeus, 1758)	R

28	Common Moorhen	*Gallinula chloropus* (Linnaeus, 1758)	WM
29	Common Coot	*Fulica atra* Linnaeus, 1758	WM
CHARADRIIFORMES		**JACANIDAE**	
30	Pheasant-tailed Jacana	*Hydrophasianus chirurgus* (Scopoli, 1786)	SM
31	Bronze-winged Jacana	*Metopidius indicus* (Latham, 1790)	R
		CHARADRIDAE	
32	Kentish Plover	*Charadrius alexandrinus* Linnaeus, 1758	WM
33	Yellow-wattled Lapwing	*Vanellus malabaricus* (Boddaert, 1783	R
34	Red-wattled Lapwing	*Vanellus indicus* (Boddaert, 1783)	R
35	White-tailed Lapwing	*Vanellus leucurus* (Lichtenstein, 1823)	WM
		SCOLOPACIDAE	
36	Spotted Redshank	*Tringa erythropus* (Pallas, 1764)	WM
37	Common Redshank	*Tringa totanus* (Linnaeus, 1758)	WM
38	Common Sandpiper	*Actitis hypoleucos* Linnaeus, 1758	WM
39	Ruff	*Philomachus pugnax* (Linnaeus, 1758)	WM
40	Marsh Sandpiper	*Tringa stagnatilis* (Bechstein,1803)	WM
41	Wood Sandpiper	*Tringa glareola* Linnaeus,1758	WM
		RECURVIROSTRIDAE	
42	Pied Avocet	*Recurivirostra avosetta* Linnaeus, 1758	WM
		LARIDAE	
43	River Tern	*Sterna aurantia* J.E. Gray, 1831	LM
FALCONIFORMES		**ACCIPITRIDAE**	
44	Brahminy Kite	*Haliastur indus* (Boddaert,1783)	R
CORACIIFORMES		**ALCEDINIDAE**	
45	Lesser Pied Kingfisher	*Ceryle rudis* (Linnaeus, 1758)	R
46	White-breasted Kingfisher	*Halcyon smyrnensis* (Linnaeus, 1758)	R

Abbreviation used: WM-Winter Migratory; R-Resident; LM-Local Migratory; and SM-Summer Migratory.

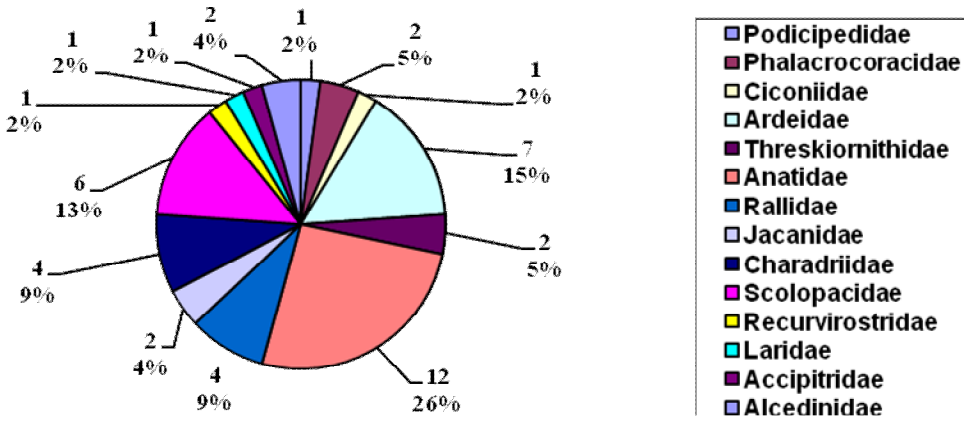

Figure 2: Showing the Birds Diversity of Suraj-Kund Pond in Amin Village in Kurukshetra district in family-wise manner during 2005-11.

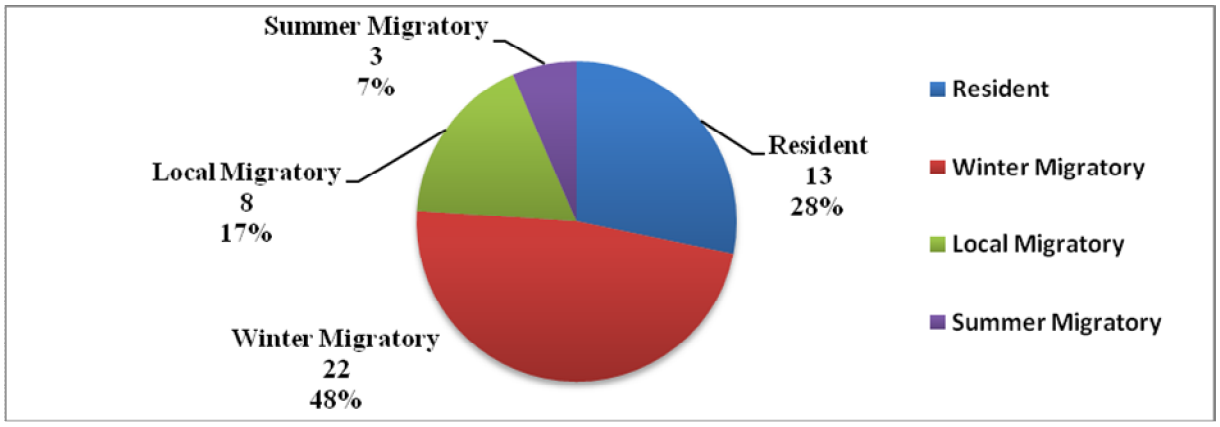

Figure 3: Showing the Residential Status of Wetland Birds observed in Suraj-Kund Pond in Amin Village in Kurukshetra district in order-wise manner during 2005-11

It is pertinent to mention that the said pond was full of water and every corner was dotted with birds in December-January in 2007-08. However upto2008, the pond was totally in doldrums with virtually no water and hence no migratory birds. Thus one good sojourning place for migratory birds has gone into oblivion for good. It is not a single case in isolation. Instead, it is process that is depleting the wetlands day by day and years by years. The present studies highlight the cause for conservation of wetlands and their biodiversity and specially the wetland migratory birds. The urgency is verified due to the international significance of these globally threatened crucial birds of rare importance.

ACKNOWLEDGEMENTS
The authors are grateful to authorities of Kurukshetra University, including Chairman, Department of Zoology for inspiring and extending cooperation.

REFERENCES

Ali S and Ripley SD (1987). Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka. Compact ed. Delhi: *Oxford University Press.*

Ali S (1996). The Book of Indian Birds. 12th Edition (Revised and enlarged): *Oxford University Press,* Mumbai.

Grimmet R, Inskipp C and Inskipp T (1998). *Birds of the Indian subcontinent. Oxford University Press*, Delhi: 888.

Gupta R C and Bajaj M (1997). Preliminary investigations into the migratory birds of Braham Sarovar at Kurukshetra. *Jeevanti*, **15:**29-41.

Gupta R C and Bajaj M (1998). Preliminary observations on winter avifauna of a perennial sewer wetland body of Kurukshetra. *Jeevanti*, **16** 46-57.

Gupta R C and Bajaj M (1999). An analysis of Ecological and behavioral patterns of migratory Shoveller (*Anas clypeata*) (Linnaeus) in certain wetlands of Haryana. *Jeevanti*, **17** 27-35.

Gupta R C and Bajaj M (2000). Preliminary observation on a rare lapwing species, white-tailed, (*Vanellus leucurus)* (Lichtenstein). *Journal of Nature Conservation,* **12**(2) 197-203.

Gupta R C and Kaushik TK (2010a). Determination of the domain of spectrum concerning diversity of endangered winter visitor wetland birds in Haryana. *Journal of Experimental Zoology. India* **13** (2) 349-354.

Gupta R C and Kaushik TK (2010b). Computation of wetland birds in rural areas of Kurukshetra, Haryana, India. *Journal of Nature Conservation,* **22**(1):1-11.

Gupta R C and Kaushik TK (2010c). On the causative factors responsible for the pathetic plight of Yellow wattled Lapwing in Kurukshetra suburbs. *Journal of Nature Conservation.***22**(2) 181-187.

Gupta R C and Kaushik TK (2010d). Determination of spectrum of winter migratory birds in Yamunanagar district in Haryana (India). *Environment conservation Journal,* **11**(3):37-43.

Gupta R C and Kaushik TK (2010e). Understanding Rural Ponds' Migratory Avian Diversity in Panchkula District in Haryana, India. *Journal of Advanced Zoology* **31**(2):117-123.

Gupta R C and Kaushik TK (2011a). On the fast depleting trends of Cormorants in Kurukshetra wetlands in the last twenty five years. *Journal of Experimental Zoology. India* **14**(1) 81-85.

Gupta R C and Kaushik TK (2011b). On the fundamentatals of natural history and present threats to Red-wattled Lapwing in Kurukshetra environs. *Journal of Applied and Natural Science*. **3**(1) 62-67.

Gupta R C, Parasher M and Kaushik TK (2010). Analysis of Avifauna of Chilchilla Bird Sanctuary in Haryana, India. *Journal of Advanced Zoology*, **31**(1) 35-44.

Gupta R C, Kumar S and Kaushik TK (2010c). Computation of Route Specific Avi-faunal Diversity in Morni Hills in Panchkula district in Haryana State in India. *Journal of Advanced Zoology*, **31** (1) 1-9.

Gupta R C, Kaushik TK and Kumar S (2010b). Evaluation of the extent of wetland birds in district Kaithal, Haryana, India. *Journal of Applied and Natural Science*. **2**(1) 77-84.

GuptaR C, Kaushik TK and Kumar S (2010b). An account concerning arrival and departure time of few selected winter migratory birds in Haryana rural ponds. *Environment conservation Journal,* **11**(1&2):1-9.

Gupta RC, Kaushik TK and Kumar S (2009). Analysis of winter migratory Wetland Birds in Karnal district in Haryana. *Journal of Advanced Zoology*, **30** (2) 104-117.

Kumar A, Sati JP, Tak PC and Alfred JRB (2005). Handbook on Indian Wetland Birds and their Conservation: i-xxvi; 1-468 (Published by Director, *Zoological Survey of India.*

Manakadan R and Pittie A (2001). Standardized common and scientific Names of the birds of the Indian subcontinent. *Bucero,* **6**(1) 1-37.