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ABSTRACT

The present work proclaims that a very-very rich diversity of winter migratory birds from across the Himalayas used to arrive in Brahmsarovar-a holy wetland in Kurukshetra (29° 57′ 36″ N, 76° 49′ 48″ E). In all, 36 species of wetland birds belonging to 8 orders and 11 families were observed from Brahmsarovar during 2005-10. However, due to the introduction of an annual festival, mainly Kurukshetra- Utsav, the number and diversity of these birds has been doomed. The main causative factors are play of fire workers dance and drama events, beating of drums and Nagaras, state level exhibition for a fortnight and above all massive crowds of people who throng Brahmsarovar to enjoy the fabulous cultural events arranged in a very magnanimous way by Govt. of Haryana. It is a case of paradox and dilemma of choosing between two good events wherein one seems better than the other i.e. Biodiversity conservation verses cultural diversity integration.

INTRODUCTION

Brahmsarovar is a rich healthy and robust perennial wetland having its existence since last 3500-5000 years linked with Mahabharata War. This wetland has experienced several transformations in its characteristics and expanse. Its present shape was imparted first in 1973 and later in 1986 by Kurukshetra development board-an organ of Govt. of Haryana under the direct control of Governor. It is located at a distance of 12 Kms from Pipli-crossing towards west on National highway No. 1(Sher-Shah Suri Marg). In the present times, it is highly embellished with religious cultural, ethnic rituals, beliefs and practice. Its’ surmounting significance is better demonstrated by the divine blessing earned by a holy bath on the occasion of Solar Eclipse- the only place in the world prescribed for mass gathering of people for community bathing to earn “Moksh” and “Punaya” equivalent to several thousands of “Ashaw-Megha-Yajanas”.

The present expanse of the wetland is 1800 feet (550 meters) long and1400 feet (430 meters) breadth. It is divided into two equal parts. The maximum depth of the Sarovar is 45 feet except on the moorings with depth of 1-6 feet and very well secured by strong railing (Plate-1).

Other than Solar Eclipse, people gather here in thousands on Amavasyas (No-Moon light) and Chaitra-Mass- Shukla Paksha- Chatuadashi too including Makar-Sankanti in January, Baisaakhi in April and Purna Mashi (Full Moon Day) in Kartika-Mass. Brahmsarovar wetland used to have a very rich culture of lotus plants which used to serve the local society by way of producing Kamal-Kakadi-a root of lotus plants. It was sold in the market as a rich source of proteins for vegetarians. Also, Brahmsarovar was a very conducive habitat for migratory birds like Mallard, Common Coot, Garganey, Pochards, Shoveller, and Pintail.

It was in mid 1980s that a religious registered chain of Hindu Temple in India, namely Jairam Vidyapeeth started 4-5 days discourse on “Geeta-Mahatam” corresponding to the period of Mahabharata-War and delivery of sermons of Geeta by “Lord Krishna”. In the 1990s, a close cooperation between cultural department of Govt. of Haryana and Vidyapeeth came in place to organize this cultural cum religious annual event in the very precincts of Brahmsarovar in Kurukshetra town. Brahmsarovar is a centuries old wetland having religious cultural and tourism significance, dating back to Mahabharata times. It is a very healthy, deep, vast, picturesque wetland.
Linked with drowning of 2-3 expert swimmers of flood-control department of Govt. of Haryana under very captivating, fast, unfortunate and puzzling and racing events in 5-10 minutes, the cooperative management of this annual festival fell apart. Now Jairam-Vidyapeeth was officially restricted to hold Geeta discourses within 200 meter tele-lens. The Camera used was Zenith 1986 model with a few crackers, competitive performances, exhibitions, sale counters, and above all electric lighting in the complex in a dazzling way. The combined negative effect of this annual festival has quite sorrowfully turned away an annual huge assemblage of migratory birds to a cipher level now. To compute this disastrous termination of an important event of migratory birds from across the great Himalayas, an effort has been made in the present studies. Gupta and Bajaj (2000) have provided some information on the cormorants of Brahmsarovar. Relevant work on winter migratory wetland birds in rural village ponds in various district of northern Haryana as well as in various Sanctuaries have been done by Zoology Department of Kurukshetra University (Gupta and Bajaj, 1997, 1998, 1999, 2000; Gupta et al., 2010; Gupta et al., 2009, 2010 a-c; Gupta and Kaushik, 2010a-e; Gupta and Kaushik, 2011a-b).

The present quite serious one, context of forcefully driving away the rich and very crucial migratory birds’ diversity from very historical wetland, deserves discussion from various viewpoints. In this paper, the variety of birds that existed in 1980s, has been brought to fore. Also it has been endeavoured to enlist the series of casual factors responsible for the extermination of migratory birds from Brahmsarovar in Kurukshetra town in India.

MATERIALS & METHODS

The period of observations span between 1985-2011 in respect of winter migratory birds that used to arrive and depart in Brahmsarovar between September-February each winter season. The periodicity of visits is casual and incidental although wrapped in a sense of acute observations whenever that could happen. However, Regular visits were made between December-February of winter season during 2005-2011 to record the diversity of migratory birds. Moreover, a sustained gaze was focused on the scenario that was obtained each winter season. A very simple methodology has been innovated which is devoid of the complexities of transect method etc and subsequent un-necessary statistical calculations. Instead, here it has been ensured that Brahmsarovar complex was visited on several occasions in each winter spread over every winter month. Also, it was tried to visit in Morning, Fore-Noon, After-Noon and late-Evening as far as possible. As such, it is a simple attempt to piece together information on a very worrisome issue related with threats to winter migratory wetland birds in Haryana, India.

The shocking depletion in numbers and species diversity of wetland birds that has crushed in a dramatic way in the last 4-5 season has caused the present research paper for the knowledge of all concerned quarters for preservation, conservation and protection of avian fauna in particular and biodiversity in general. The evidence was generated through photographs. The Camera used was Zenith 1986 model with 200 meter tele-lens. The various wetland birds encountered during the study period were further assorted according to their residential status categories like: “Resident”; “Winter Migratory”; “Local Migratory” by following the technique developed by Kumar et al., 2005. Identification of birds was done with the help of reference books (Ali, 1996; Ali and Ripley, 1987; Grimmet et al., 1998; and Kumar et al., 2005). Nomenclature follows Manakadan and Pittie (2001).

RESULTS & DISCUSSION

The present studies reveal that 36 species of wetland birds belonging to 8 orders and 11 families were observed from holy Brahmsarovar in Kurukshetra district in Haryana during 2005-11. Out of 36 species of wetland birds, 21 species of wetland birds were winter migratory coming from great Himalayas, across the Himalayas and from across the areas like Russia, China, Tibet and Siberia (Table-1, Fig.3).The maximum wetland diversity of birds contained in Order Anseriformes (11 species) followed by Charadriiformes (10 species each) and Ciconiiformes (7 species)(Fig.1). Anatitae family is the most represented family (11 species) followed by Ardeidae (7 species) (Fig.2). The prominent winter migratory birds like Gadwall Anas strepera, Eurasian Wigeon Anas penelope, Mallard Anas platyrhynchos, Spot-billed Duck Anas poecilorhyncha, Northern Pintail Anas acuta, Northern Shoveller Anas clypeata, Garganey Anas querquedula, Red-crested Pochard Rhodonessa rufina, Common Pochard Aythya ferina, Tufted Pochard Aythya fuligula, Common Redshank Tringa totanus, Common Sandpiper Actitis hypoleucos, Ruff Philomachus pugnax, White-tailed Lapwing Vanellus leucurus, Black-headed Gull Larus ridibundus and Pallas’s Gull Larus ichthyaetus were observed from Brahmsarovar- a holy tank in Kurukshetra district in Haryana during 2005-11.

It is important to point out that Gupta and Kaushik (2010b) reported 66 species of wetland birds from rural village ponds in Kurukshetra district. The wetland birds like Greylag Goose Anser anser, Bar-headed goose Anser indicus, Comb Duck Sarkidiornis melanotos, Lesser-whistling Duck Dendrocarya javanica, Kentish Plover Charadrius alexandrinus, Little-ringed Plover Charadrius dubius, Black tailed Godwit Limosa limosa, Little Stint Calidris minuta, Temminck’s Stint Calidris temminckii, Spotted Greenshank Tringa guttifer and Wood Sandpiper Tringa glareola were observed from rural ponds in Kurukshetra district but never seen in the premises of Brahmsarovar.
Plate 1. Photographic inventory of the principal features of Brahmsarovar in Kurukshetra district in Haryana, India.
Fig. 1&12 - The premises of Brahmsarovar; Fig. 2- Ancient Hanuman Temple; Fig. 3- Sathaneshwar Mahadev Temple; Fig. 5 - 10 - Winter migratory birds in the holy wetland; Fig. 11- Pilgrims are taking holy dip in the Brahmsarovar.
It is pertinent to mention that birds like Little Egret *Egretta garzetta*, Large Egret *Casmerodius albus*, Grey Heron *Ardea cinerea*, Brahminy Kite *Haliastur indus*, White-breasted Kingfisher *Halcyon smyrnensis*, Lesser Pied Kingfisher *Ceryle rudis*, Little Grebe *Tachybaptus ruficollis* and Cattle Egret *Bubulcus ibis* were also observed from the premises of Brahmsarovar. Further birds like Red-wattled Lapwing *Vanellus indicus*, Yellow-wattled Lapwing *Vanellus malabaricus*, River Tern *Sternula aurantia*, Common Redshank *Tringa totanus*, Common Sandpiper *Actitis hypoleucos* and Ruff *Philomachus pugnax* were also observed from the Holy Tank. It is crucial to mention that Govt. of Haryana on the occasion of Kurukshetra Utsav every year comes up with huge exhibition to show-case the achievements in the form of agriculture, industrial, textiles, natural food produce amongst scores of other merchandise items. The severe blow of disturbance is the harsh and mind blowing sounds and spectacle of the Fire-works and various musical programmes performed by ethnic troops drawn by cultural centre and Govt. of Haryana to show the rare rural customs, ethics, rituals, folk songs, folk dances etc. As such, “Kurukshetra-Utsav” has done more harm to crucial avian biodiversity having global negative consequences. So much is the level of disturbance that even the local resident birds like Cormorant, Egrets and Herons which once upon a time were available in scores, have now deserted Brahmsarovar. It is obligatory on India and Indians to atleast not to contribute towards the sub-conscious destruction of biodiversity.

It is pertinent to mention that winter migratory wetland birds are showing steep declining trends since 1995 onwards till 2011. Moreover, the diversity of these birds has almost crashed. The discerning and visible deterioration is in the number of very significant species like Mallard, Northern Shoveller, Northern Pintail, Spot-billed Duck, Common Pochard, Tufted Pochard, Eurasian Wigeon, Common Coot, Pallas’s Gull, Black-headed Gull and Gadwall which are now seen only in January and that too just 1-2 pairs only. Compared to this, their respective number was over 200-300 in December onwards in Brahmsarovar wetland. It is further pertinent to pinpoint that these winter migratory birds are now attracted towards small rural ponds nearby villages like Sarsa, Sunehri- Khalsa and Kirmich etc. As such, Kurukshetra-Utsav which is now a national festival of India, and is organized on a very large scale every November-December for approximately one to two months has resulted in almost total reduction and repulsion of winter migratory wetland birds.

It is worrying fact to note that in the winter of 2010-11, there were no migratory birds seen at all. This is certainly linked with Kurukshetra Utsav + Solar eclipse. The solar eclipse Mela is a gathering of about 10 lakh peoples in Brahmsarovar complex. Moreover, the District authorities prepares Brahmsarovar complex to receive 10 lakh pilgrims atleast 2-3 months in advance by interfering with water sheet where birds generally arrive. It is pertinent to mention that Gupta and Bajaj (1997) studied migratory birds of this holy tank and reported 23 species of migratory birds. They observed the large flocks of Common Coots *Fulica atra* followed by Red-crested Pochard *Rhodonessa rufina*. In the present study, Common Coots and Red-crested Pochards were seen in very small flocks in this holy Sarovar.

It is pertinent to mention that Common Coots’ flocks were available in hundreds and thousands during 2000-2005. These birds used come in September-October first followed by gradual concentration in December and Mid-January every year. Gupta and Bajaj (1997) reported that Common Coots arrive in October every year and were observed in the highest number (7800). However, it is shockingly to mention here that only 10-20 Common Coots were seen in the winter of 2010-2011 from Brahmsarovar Wetland in Haryana and at the same time, no winter migratory birds were observed.

The only and only causative factor is the intense festivities and activities that are performed as per the officially approved schedule of events during the “Kurukshetra Utsav” which is held
Table 1. Checklist of wetland birds diversity of Brahmsarovar in Kurukshetra district in Haryana, India during 2005-11

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Residential Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Little Grebe</td>
<td>Tachybaptus ruficollis (Pallas, 1764)</td>
<td>R</td>
</tr>
<tr>
<td>2</td>
<td>Great Crested Grebe</td>
<td>Podiceps cristatus (Linnaeus, 1758)</td>
<td>WM</td>
</tr>
<tr>
<td>3</td>
<td>Little Cormorant</td>
<td>Phalacrocorax niger (Vieillot, 1817)</td>
<td>R</td>
</tr>
<tr>
<td>4</td>
<td>Great Cormorant</td>
<td>Phalacrocorax carbo (Linnaeus, 1758)</td>
<td>LM</td>
</tr>
<tr>
<td>5</td>
<td>Little Egret</td>
<td>Egretta garzetta (Linnaeus, 1766)</td>
<td>LM</td>
</tr>
<tr>
<td>6</td>
<td>Grey Heron</td>
<td>Ardea cinerea Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>7</td>
<td>Purple Heron</td>
<td>Ardea purpurea Linnaeus, 1766</td>
<td>LM</td>
</tr>
<tr>
<td>8</td>
<td>Large Egret</td>
<td>Casmerodius albus (Linnaeus 1758)</td>
<td>LM</td>
</tr>
<tr>
<td>9</td>
<td>Median Egret</td>
<td>Mesophoyx intermedia (Wagler 1829)</td>
<td>LM</td>
</tr>
<tr>
<td>10</td>
<td>Cattle Egret</td>
<td>Bubulcus ibis (Linnaeus, 1758)</td>
<td>R</td>
</tr>
<tr>
<td>11</td>
<td>Indian Pond-Heron</td>
<td>Ardeola grayii (Sykes, 1832)</td>
<td>R</td>
</tr>
<tr>
<td>12</td>
<td>Gadwall</td>
<td>Anas strepera Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>13</td>
<td>Eurasian Wigeon</td>
<td>Anas penelope Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>14</td>
<td>Garganey</td>
<td>Anas querquedula Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>15</td>
<td>Mallard</td>
<td>Anas platyrhynchos Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>16</td>
<td>Spot-billed Duck</td>
<td>Anas poecilorhyncha J.R. Forester, 1781</td>
<td>WM</td>
</tr>
<tr>
<td>17</td>
<td>Northern Shoveller</td>
<td>Anas clypeata Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>18</td>
<td>Northern Pintail</td>
<td>Anas acuta Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>19</td>
<td>Common Teal</td>
<td>Anas crecca Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>20</td>
<td>Red-crested Pochard</td>
<td>Rhodonessa rufina (Pallas, 1773)</td>
<td>WM</td>
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<tr>
<td>21</td>
<td>Common Pochard</td>
<td>Aythya ferina (Linnaeus, 1758)</td>
<td>WM</td>
</tr>
<tr>
<td>22</td>
<td>Tufted Pochard</td>
<td>Aythya fuligula (Linnaeus, 1758)</td>
<td>WM</td>
</tr>
<tr>
<td>23</td>
<td>Common Coot</td>
<td>Fulica atra Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>24</td>
<td>Yellow-wattled Lapwing</td>
<td>Vanellus malabaricus (Boddaert, 1783)</td>
<td>R</td>
</tr>
<tr>
<td>25</td>
<td>Red-wattled Lapwing</td>
<td>Vanellus indicus (Boddaert, 1783)</td>
<td>R</td>
</tr>
<tr>
<td>26</td>
<td>White-tailed Lapwing</td>
<td>Vanellus leucurus (Lichtenstein, 1823)</td>
<td>WM</td>
</tr>
<tr>
<td>27</td>
<td>Common Redshank</td>
<td>Tringa totanus (Linnaeus, 1758)</td>
<td>WM</td>
</tr>
<tr>
<td>28</td>
<td>Common Sandpiper</td>
<td>Actitis hypoleucus Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>29</td>
<td>Ruff</td>
<td>Philomachus pugnax (Linnaeus, 1758)</td>
<td>WM</td>
</tr>
<tr>
<td>30</td>
<td>Pied Avocet</td>
<td>Recurvirostra avosetta Linnaeus, 1758</td>
<td>WM</td>
</tr>
<tr>
<td>31</td>
<td>River Tern</td>
<td>Sterna aurantia J.E. Gray, 1831</td>
<td>LM</td>
</tr>
<tr>
<td>32</td>
<td>Black-headed Gull</td>
<td>Larus ridibundus Linnaeus,1676</td>
<td>WM</td>
</tr>
<tr>
<td>33</td>
<td>Pallas's Gull</td>
<td>Larus ichthyaeus J.E.Gray,1831</td>
<td>WM</td>
</tr>
<tr>
<td>34</td>
<td>Brahminy Kite</td>
<td>Haliastur indus (Boddaert,1783)</td>
<td>R</td>
</tr>
<tr>
<td>35</td>
<td>Lesser Pied Kingfisher</td>
<td>Ceryle rudis (Linnaeus, 1758)</td>
<td>R</td>
</tr>
<tr>
<td>36</td>
<td>White-breasted Kingfisher</td>
<td>Halcyon smyrnensis (Linnaeus, 1758)</td>
<td>R</td>
</tr>
</tbody>
</table>

Abbreviations: - WM-Winter Migratory; LM-Local Migratory; R-Resident
every year in Brahmsarovar complex on a very large scale with
grandeur in the accompaniment of huge crowds of people inspired
by religious temperament desire to buy articles from the exhibition
where shopkeepers arrive in the festival from virtually every state
of our country. However, observations hint towards the extremely
friendly relationship that exists between rural people and winter
migratory birds in rural ponds in Haryana. It is an extremely amusing
revelation that on every visit the authors’ presence nearby winter
migratory birds’ diurnal place of activity i.e. pond created panic in
birds. But compared to this, villager’s constant proximity with birds
by way of performing daily chores, the birds never showed any sign
of alarm. In view of this it is the inadvertant actions of Govt. of
Haryana that have caused 100% elimination of arrival of very
rich diversity of migratory birds in Brahmsarovar.

Precisely speaking, winter migratory wetland birds in Brahmsarovar
have fallen a prey to multifarious disturbance arising out of Kurukshetra
Utsav. As such it is a dilemma of biodiversity conservation and promotion
of enrichment of cultural values. It is totally a new façade “Man-Animal”
conflicts that are pre-disposed in diabolical situations. The solution to
Brahmsarovar winter migratory bird’s protection is rather clouded at
the moment.

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