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Disappearing Wetland: A Study of Basai Wetlands, Haryana (India)

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ABSTRACT

“Wetlands are land transitional between terrestrial and aquatic system where the water table is usually at or near the surface or the land is covered by shallow water”. Wetland helps in flood control, waste water treatment, bird’s habitat and also generates income for people living in the vicinity of the wetland through crop production and fishing. It is a known fact that wetlands helps in maintaining the healthy balance between terrestrial and aquatic ecosystem, but, now-a-days, they are facing the threat of extinction owing to development and urbanisation which is leading to a decrease in their total area day by day. Basai wetlands, located in Gurgaon city in Gurugram district of Haryana, India has been experiencing rapid shrinkage in its area over recent years due to continuous encroachment resulting from ever expanding city. The paper, based on secondary data, examines the importance, threats and challenges faced by the wetland along with presenting a comparison between Basai and Sultanpur wetlands, which are located close to each other but in terms of conservation efforts display wide disparities. The paper highlights the extent of damage suffered by Basai wetlands on account of government and public apathy.

Keywords: Wetland, Important Bird Area (IBA), Threat, Challenge, Basai, Sultanpur.

1. INTRODUCTION

Wetlands are the most important and unique features of nature that provide a broad range of functions as they are the source for drinking water, erosion control, crop production, flood control, climate stabilizers, ground water recharge, purification of the water and detoxification.

Local communities benefit greatly from wetlands as they are an important source of fodder and water to both wild and domestic fauna especially during dry part of the year and at times of drought. Besides,

wetlands also provide food, fuel wood and timber for construction, raw materials for furniture industry, medicines and fodder to rural communities. Wetlands supplement the income of rural households especially women. Hence, wetlands contribute significantly to effort aimed at poverty reduction and food self-sufficient (Amsalu and Addisu, 2014).

Wetlands are the habitat of large number of aquatic and terrestrial animals and plants. Wetlands have many definitions circulating around the world but Ramsar Convention on wetland is the most desired one. Article 1 states that “area of marsh, fen, peatland of water, whether natural or artificial permanent or temporary, with water that is static or flowing, fresh brackish or salt, including areas of marine water the depth of which at low tides does not exceed six meters” (Ramsar 1971). Despite of this, today wetlands are facing many problems internationally like decrease in their total area, pollution from industrialisation and also the ignorance of local population about the merits of wetlands which indirectly augments the degradation of wetland.

Most of the wetland in urban areas are deeply threatened as they are being converted into non-wetland uses by way of encroachment of the drainage through landfilling, pollution by solid wastes and industrial effluents, hydrological changes through change in inflow and withdrawal of water and over-exploitation of resources. All of these adversely affect the biodiversity along with goods and services provided by wetlands (Ramachandra, 2009 a,b,c; Ramachandra et. al., 2012).

In India, deteriorating water quality of wetlands resulting into negative economic, social and environmental consequences is a matter of grave concern. This problem is more alarming especially in case of small water bodies such as lakes, tanks and ponds. These water sources are known to have performed several functions in the past such as economic (fisheries, livestock and forestry), social (water supply), and ecological (ground water recharge, nutrient, and biodiversity maintenance). Despite all these benefits, wetlands are thought of as ‘wastelands’ by many decision-makers and even by the local residents who take maximum benefits from the wetlands by way of various goods and services but are rarely willing to pay for this extractive use (Verma, 2001).

These problems are mainly from anthropogenic factors like encroachment by the industrialists and local people for their personal needs. This public apathy towards the wetlands is taking a huge toll on them to the extent that many wetlands are facing the threat of extinction today. One such wetland is Basai wetland in Gurugram district of Haryana which has been experiencing rapid shrinkage in its area over recent years due to continuous encroachment resulting from ever expanding city. This paper is essentially focussed on the current status of Basai wetland and also draws a comparison with Sultanpur National Park which is located very close to it but enjoys prime environmental attention and status.

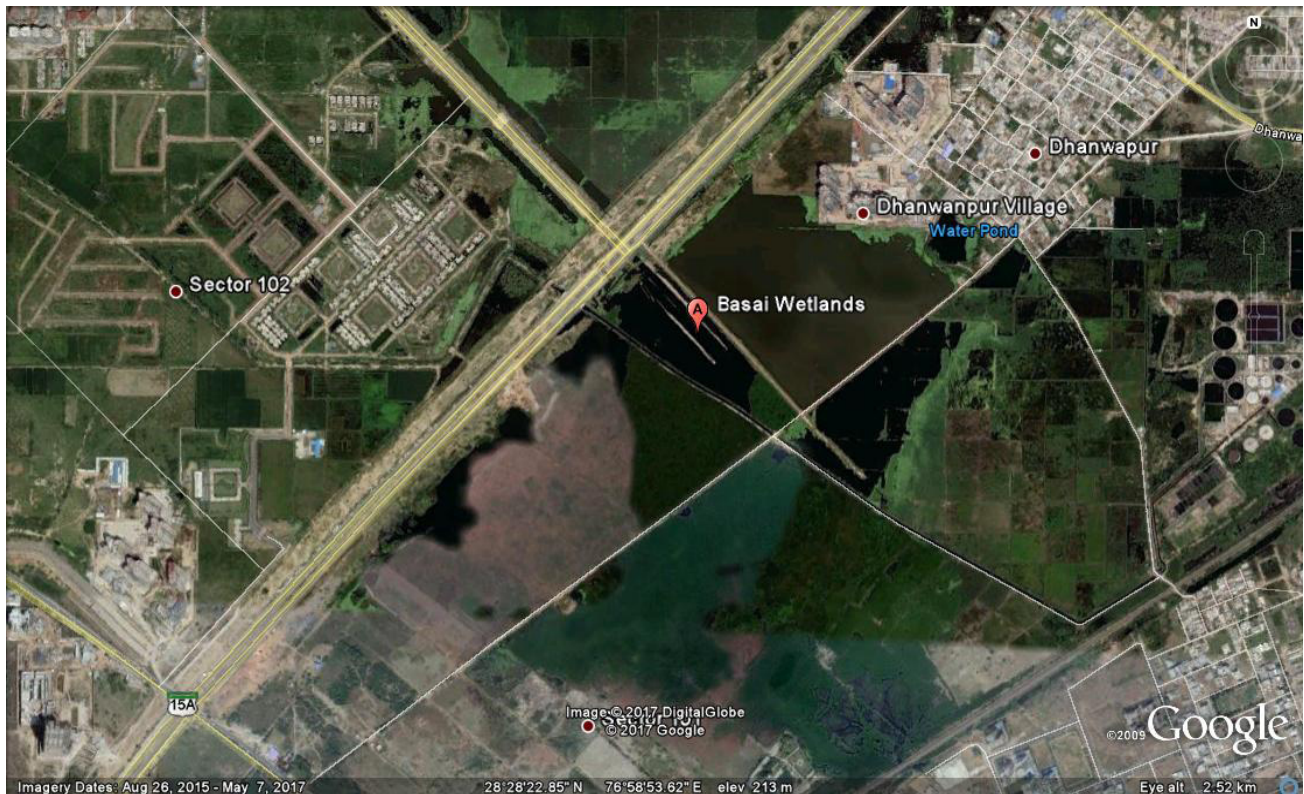
2. OBJECTIVES OF THE STUDY

- (i) To examine the ecological and environmental significance of Basai wetland.
- (ii) To highlight the features and importance of the wetland.
- (iii) To make a broad comparison between Basai and Sultanpur Important Bird Areas (IBAs) to understand their differences.
- (iv) To investigate the threats and challenges being faced by the wetland reflecting the neglect of the government towards this wetland.

Study Area

Basai wetlands in Haryana state of India are located between Sectors 101 and 102 of Gurgaon city and 8 km east of Sultanpur National Park. The wetland, spreading on an area of about 250 acres, is a shallow wetland comprising of open water Water Hyacinth and Typha reed beds and receives water supply from a breached water channel which brings waste water and treated sewage from the Gurgaon Water and Sewage Works. During monsoons, the area of the wetland increases up to 1 sq. Km mainly due to rain water and diversion of water for irrigating rice fields by farmers. The wetland is an ideal grazing ground for Bar-headed Geese *Anser indicus* which flock here during winters. Recently, there has been construction of a deep-water reservoir close to the Ashram on the Sultanpur road carried on by Gurgaon Water and Sewage Works, which now has become an attraction for diving duck, grebes and cormorants. This wetland, along with Sultanpur National Park and three others, is the Important Bird Area (IBA) of Haryana.

Basai Wetland



Source: Google Earth Image.

Source of Data

The present study is totally based upon secondary data taken from various Government, National and international websites, national newspapers and research articles, etc. Besides, secondary information has also been taken from various nationally and internationally recognised societies working for the conservation of environment. The data collected has been examined and interpreted to depict the government apathy towards the study area.

Basai Wetland: Features and Importance

The Basai wetlands display rich avifauna and since February 2001 more than 239 species have been recorded. In a bird ringing camp of Bombay Natural History Society (BNHS) in September 2001, 154 bird species were recorded in 5 days here. Numerous threatened birds including Sarus Crane, Marbled Duck, Greater Spotted Eagle, Lesser Spotted Eagle, Imperial Eagle and Lesser Kestrel Falco have been sighted here apart from various near threatened species including Painted Stork, Black-necked Stork, Black-headed Ibis or Oriental White Ibis, Pallid Harrier and Asian Dowitcher. The number of Bar-headed Goose, who comes during winters, has reached up to 1,100 whereas during spring and autumn season, the number of ducks of 18 species reaches up to 5,000 and number of waders of 36 species peak to 10,000. According to Indian Bird Conservation Network, the number of birds species spotted at Basai is far higher than the 1% bio geographic threshold limit estimated by Wetlands International (2002). As per the 1% bio geographic threshold, the number of Bar-headed Goose is 560 whereas in Basai, around double of this number (1100) has been spotted (IBCN, 2015).

M D Sinha, the conservator of forests (Gurgaon circle) has acknowledged that the wetlands, within and surrounding the Gurugram city, perform an important function of maintaining hydrological balance in the region. Basai wetlands are saline in nature, a feature which is essential for bio-filtration of groundwater. Moreover, these wetlands help in maintain the ecological balance of the area as they are a habitat of numerous insects, animals and birds (Arora, 2016).

Birders, environmentalists and nature lovers give a frequent visit to Basai wetland to enjoy in lap of nature. This wetland near Sultanpur Bird Sanctuary is probably one of the most frequently visited wetland of Delhi-NCR birders. Unknown to the weekend picnic tourists who usually head for Sultanpur Bird Sanctuary, Basai provides a great opportunity to watch various species of birds from a very close distance (Phukon, 2017). In fact, Basai Bird Sanctuary, located in the heart of the city amidst concrete jungle of high-rise buildings is one of the least talked about birding destinations in Delhi (Upreti, 2016).

The Basai wetlands is a proof that even treated sewage water can be home of thousands of birds if properly protected and maintained. This fact holds great importance, especially in present times, when most of the natural shallow wetlands have been converted into agricultural fields by draining out water or pollution in the Indo-Gangetic plains. Hence, there is a need to create more wetlands along with conserving and restoring the natural ones (IBCN, 2015).

Basai and Sultanpur Bird Areas: A comparison

The potential of Sultanpur was first recognized at the Conference of the International Union of Conservation of Nature and Natural resources (IUCN) held in New Delhi in 1969 which resulted into declaration of an area of 1.21 sq. Km. as a Sanctuary under section 8 of the Punjab Wildlife Preservation Act, 1959 which was further upgraded to National Park under Section 35 of the Wildlife (Protection) Act, 1972. Simultaneously, the area of 0.21 sq. Km. was added and hence, the total area of the new designated National Park was increased to 1.42 sq. Km. The Sultanpur National Park comprises of the land taken out from Sultanpur, Sadhrana, Chandu, and Saidpur villages (Haryana Forest Department). On the other hand, Basai wetland, although, comes under the jurisdiction of Sultanpur Bird Sanctuary but has not been granted any conservation status yet. In fact, Bombay Natural History Society (BNHS) and Central government approve

Basai as an Important Bird Area (IBA) but Haryana government is not declaring it as a wetland. Overall, in Haryana, an area of 27,975 hectares which makes up 0.63% of the total area of the state comprises of five IBAs, one national park and nine wildlife sanctuaries.

Table 1
Haryana: Important Bird Areas
A1 = Threatened species; A2 = Restricted Range species;
A3 = Biome species; A4 = Congregatory species
IBAs of Haryana

<i>IBA site codes</i>	<i>IBA site names</i>	<i>IBA criteria</i>
IN-HR-01	Basai Wetlands	A1, A4i, A4iii
IN-HR-02	Bhindawas Wildlife Sanctuary	A1, A4i, A4iii
IN-HR-03	Kalesar Wildlife Sanctuary	A1, A3
IN-HR-04	Sultanpur National Park	A1, A4i, A4iii
IN-HR-05	Wetlands of Yamuna River	A4iii

Source: ibcn.in/wp-content/uploads/2015/05/Haryana.pdf.

According to Indian Bird Conservation Network (IBCN) data (Table 1), shows that Basai wetland, Sultanpur and Bhindawas wetlands meet the same IBA criteria of A1 (threatened species), A4i and A4iii (congregatory species). Interestingly, Sultanpur and Bhindawas have been granted the status of National Park and Wildlife Sanctuary, respectively, Basai wetland, on the other hand, doesn't fall under any conservation area. A closer comparison between Sultanpur National Park and Basai wetland doesn't reveal much difference between them (Table 2).

Table 2
Basai Wetland and Sultanpur Bird Sanctuary: A Broad Comparison

<i>Category</i>	<i>Basai Wetland</i>	<i>Sultanpur Wetland</i>
IBA Site code	IN-HR-01	IN-HR-04
Area	100 ha	143 ha
Coordinates	28° 28' 60"N, 76° 58' 60"E	28° 28' 00"N 76° 55' 00E
Total Bird Species	240	258
Critically Endangered (CR)	2	5
Endangered (E)	3	4
Vulnerable (VU)	7	10
Near-Threatened (NT)	16	21

Source: ibcn.in/wp-content/uploads/2015/05/Haryana.pdf.

The IBA site codes for Basai and Sultanpur wetlands are IN-HR-01 and IN-HR-04, respectively. Sultanpur National Park has only 43 hectares more area than Basai wetland and they are only 8 kilometres away from each other. Table 2 depicts that Sultapur National Park has only 18 bird species more than Basai wetland. Further, as far as other conservation categories are concerned, Sultanpur National park has only 3 more Critically Endangered (CR), 1 more Endangered (E), 3 more Vulnerable (VU), and 5 more Near-Threatened (NT) bird species than Basai Wetland.

Table 3
Basai Wetland: Bird Species Specification under IUCN Red-List

<i>Critically Endangered (CR)</i>	<i>Endangered (EN)</i>	<i>Vulnerable (VU)</i>	<i>Near-Threatened (NT)</i>
White-rumped Vulture	Egyptian Vulture	Great Spotted Eagle	Alexandrine parakeet
Red-headed Vulture	Steppe eagle	Eastern Imperial Eagle	Asian dowitcher
–	Black-bellied tern	Indian spotted Eagle	Black-headed ibis
–	–	Sarus Crane	Black-necked stork
–	–	Marbled Teal	Black-tailed godwit
–	–	Common Pochard	Curlew sandpiper
–	–	Woolly-necked stork	Eurasian curlew
–	–	–	European roller
–	–	–	Ferruginous duck
–	–	–	Lesser flamingo
–	–	–	Northern lapwing
–	–	–	Oriental darter
–	–	–	Painted stork
–	–	–	Pallid harrier
–	–	–	Red-necked falcon
–	–	–	River lapwing
–	–	–	River tern

Source: <http://avibase.bsc-eoc.org/checklist.jsp?region=INnwhr01&list=howardmoore>.

Table 4
Sultanpur Wetland: Bird Species Specification under IUCN Red-List

<i>Critically Endangered (CR)</i>	<i>Endangered (EN)</i>	<i>Vulnerable (VU)</i>	<i>Near-Threatened (NT)</i>
Indian Vulture	Black-bellied tern	Common Pochard	Alexandrine parakeet
Red-headed Vulture	Egyptian Vulture	Dalmatian Pelican	Black-headed ibis
Sociable Lapwing	Saker Falcon	Eastern Imperial Eagle	Black-necked stork
White-bellied Heron	Steppe eagle	Finn's Weaver	Black-tailed godwit
White-rumped Vulture	–	Great Spotted Eagle	Curlew sandpiper
–	–	Indian spotted Eagle	Eurasian curlew
–	–	Lesser Adjutant	Falcated Duck
–	–	Lesser White-fronted Goose	Ferruginous Duck
–	–	Sarus Crane	Great Thick-knee
–	–	Stoliczka's Bush Chat	Grey-headed Fish Eagle
–	–	–	Laggar Falcon
–	–	–	Lesser flamingo
–	–	–	Northern lapwing
–	–	–	Oriental Darter
–	–	–	Painted stork
–	–	–	Pallid Harrier

(Contd...)

<i>Critically Endangered (CR)</i>	<i>Endangered (EN)</i>	<i>Vulnerable (VU)</i>	<i>Near-Threatened (NT)</i>
–	–	–	Pallid harrier
–	–	–	Red-necked falcon
–	–	–	River lapwing
–	–	–	River tern
–	–	–	Spot-billed Pelican

Source: <http://haryanaforest.gov.in/SultanpurNationalPark.aspx>.

A comparison of bird species under IUCN red-list in Basai wetland and Sultanpur national Park (Table 3 and Table 4) reveals that in both the areas critically endangered species, namely, White-rumped Vulture and Red-headed Vulture are common. The endangered species of Basai wetland i.e., Egyptian Vulture, Steppe Eagle and Black-bellied tern are also present in Sultanpur National park whereas among vulnerable species five are common and two species, namely, Marbled Teal and Woolly-necked Stork are present only in Basai wetland (Table 3). Out of 16 and 21 near-threatened species of Basai and Sultanpur wetlands, respectively, 15 species are common in both while two species, namely, Asian dowitcher and European roller are present only in Basai wetland.

Haryana Government has not notified Basai as a wetland even when it has nearly the same configuration and number of bird species as Sultanpur National Park. It appears that the state government is indifferent towards Basai wetland since it is located between two settlements of HUDA colony in Gurugram i.e sector 101 and sector 102. Moreover, numerous housing projects are coming up in the vicinity of the wetland and the construction of Dwarka expressway is also underway.

Basai Wetland: Threats and Challenges

The Basai wetland presents one of the best examples of habitat destruction on account of neglect by the authorities and unsustainable development which is threatening this bird paradise.

In 2016, about 240 species of birds were spotted at the site, which, however, was less than the number recorded in previous year. As per the figures of wildlife department, around 320 species of birds were spotted in the wetland in 2015 (Pati, 2016). Marbled teal, sarus crane, black-necked stork and Asian dowitcher are among the 240 species seen in the area. Flamingoes and black francolin, the state bird of Haryana, were common in the wetlands once. Their population is now on the decline (Dhankhar, 2017). The people who are aware about this fact are much concerned about the declining bird's species here and also show their deep sorrow to the fact that this wetland, which was earlier a bird's paradise and a big source of ground water recharge, now has shrunk to just a patch of marshy land having only one sq. Km. of area.

Gurugram is one of the biggest industrial hubs in the Delhi NCR region and also famous for the DLF cyber city. Haryana government is auctioning plots here every year which is a serious threat surrounding environment and after introducing 2nd Gurgaon-Manesar master plan, the development level has further raised up which is acting as a termite for Basai Wetland as it is eating away the wetland by way of encroachments. Basai had been completely ignored whereas Sultanpur enjoys the conservation status as a result of its control by the authorities since 1950s. Further, Basai's rich biodiversity had faced destruction due to large-scale urbanization after the introduction of 2nd Gurgaon-Manesar Master Plan, and now is facing the threat of disappearance (Chopra, 2013).

Underground water table is important to ensure enough water supply for the residents of a city and a wetland is the major source of ground water recharge and maintaining hydrological balance. Considering this feature, Basai wetland is of immense importance to a city like Gurugram which faces frequent flooding and resultant traffic chaos almost every monsoon season. Such open spaces provide relief from water logging in these ‘concrete jungles’.

The importance of these wetlands in an over-populated city like Gurgaon (Gurugram) has also been acknowledged by Mr. G.S. Bal, who is an expert in disaster management at Amity University. The ever-increasing population and construction of high rise buildings in the city is adversely affecting its underground water table. In such a scenario, these wetlands become very significant as they perform multiple functions like absorbing rain water and recharging groundwater which otherwise in their absence may lead to the urban floods as it happened in case of Chennai, Tamil Nadu (Arora, 2016).

The National Green Tribunal (NGT) in one of its order has directed every state government to ensure sustainable resource use and control climate change in order to preserve natural wetlands from habitat loss (Pati, 2016). On June 16, 2017, Haryana Chief Minister Shri Manohar Lal Khattar inaugurated a C&D (Construction and Demolition) waste plant on an area of 3.5 acres of Basai wetland, proposed by Municipal Corporation of Gurgaon (MCG) which was expected to treat 500 tonnes of waste every day. The plant is expected to start by the end of this year.

On June 22, 2017, a Delhi based NGO, ‘Delhi Bird Foundation’ filed complaint in National Green Tribunal against Haryana Government for constructing a C&D waste plant near Basai and not declaring Basai as a ‘Wetland’. As stated in the petition, according to the C&D management rules 2016, a plant cannot be constructed near a wetland, forest, sanctuary, water body or human cluster, however, Basai has not been declared as a wetland under the Wetland (Wetland and Management) Rules 2010 despite of having a rich avifauna and aquatic life. Reacting to this, the Union Ministry of Environment, Forest and Climate Change (MoEF &CC) slammed Haryana government for not issuing any notice to identify and classify Basai as a wetland.

On August, 12, 2017, Delhi Bird Foundation (DBF) presented 6 photographs to National Green Tribunal which showed 900 acres in Basai as a wetland and asked to stop the construction of C&D waste management plant near Basai. These photographs were taken from Google images about one to two years back. The NGO said that Basai was a bird paradise and had a huge aquatic ecosystem (Arora 2017).

The stopping of the breach in the water channel and extension of housing project by Haryana Urban Development Authority (HUDA) west of the railways can pose a serious threat to Basai wetland. Moreover, there is a problem of shooting and trapping of birds at night during winters (IBCN, 2015).

3. CONCLUSION

Wetlands, one of the most productive and efficient ecosystems of the world, are facing the threat of extinction and Basai wetland is one of them. Bombay Natural History Society has notified Basai as an Important Bird Area (IBAs) which serves about 240 different birds species including the state bird Black Francolin while Haryana Government has not granted any status to this wetland. Basai wetland, located in the middle of HUDA sectors 101 and 102 can help prevent water logging in the city during heavy rains because wetlands are the best source for ground water recharge apart from supporting agriculture and serving habitat for



Figure 1: Red-Wattled Lapwing (*Vanellus indicus*), (2018, march 12)



Figure 2: Basai (2018, march 12)

birds and aquatic life even in sewage treated water. The state government has been selling land under Basai wetland in the wake of increasing urbanisation and industrialisation leading to rapid shrinkage in its area. It appears that Basai wetland has become entangled between real-estate and infrastructure projects where once again development is occurring at the cost of the environment.

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