

Wetlands in Delhi NCR

Wetlands are usually low-lying areas that can contain water all year-round or temporarily. They support aquatic vegetation (hydrophytes), reeds, and a wide range of waterfowl and associated biodiversity. Birds fly hundreds of kilometres to visit wetlands, mainly in winter. Wetlands also perform ecosystem services as they store and sequester ground water, and provide vital flood control services. They also provide much needed open space in cities, and have been linked to a sense of wellness and good health.



Migratory birds at one of the wetlands of Yamuna Biodiversity Park
(Photo Contributed by DDA)

Wetlands attract a wide range of biodiversity, and if left to function well, will self-purify themselves. India is a signatory to Convention on Migratory Species (CMS) and the Convention on Biodiversity (CBD) which bind us to conserve biodiversity and provide safe passage to migratory species. This makes wetlands very important for achieving both CMS and CBD targets. Delhi and NCR have several major wetlands, but these are under serious threat.



Over view of Yamuna Biodiversity Park Phase II Showing a mosaic of flood plain forest, grasslands and wetlands
(Photo Contributed by DDA)

Najafgarh wetland, Delhi and Haryana

The Najafgarh wetland is an old lake or jheel formed by the Sahibi river. The Sahibi river is over burdened by pollution and now only known as the Najafgarh drain. This 'drain' is 51 kilometres long, which flows through Delhi and Haryana. Historically, this was not a drain- it was a river and a storm water channel. But pollution and apathy have degraded the water body.



Najafgarh Jheel (Courtesy: Manoj Mishra)



Natural Najafgarh drain before it gets polluted (Courtesy: Manoj Mishra)

Despite this, Najafgarh jheel, in Delhi and Haryana, is an amazingly biodiverse place. The jheel and its surrounding fields are an important place for birds. At least 5,000 Greater Flamingos are reported to arrive there each year. These may be coming from Gujarat or even from Kazakhstan. There are also resident Greater Flamingos in the area. This is one of the biggest heronries in North India – more than 200 birds, such as Cormorants, Darters and Ibis have created communal nests in a clump of trees. Heronries are classic features next to wetlands, reminiscent of world heritage site, Bharatpur. Najafgarh also gets Bar-headed Geese and Ruffs which come from Tibet, China and Russia. This [piece](#) on Najafgarh, published in *The Hindu* notes:



Greater Flamingo (Courtesy: Neha Sinha)

Birders have counted more than 150 bird species here, and a half-day count during a recent bird race yielded 120 species—some of them migratory birds from Tibet and the Greater Himalayas. “Over 1,000 bar-headed geese come here to spend winters from the Tibetan plateau. Other wintering waterfowl, numbering several thousand, include the northern pintail, Eurasian wigeon, northern shovelers, common teal, ruddy shelduck, gadwall, common pochard and garganey. Uncommon species seen here are the greater white-fronted goose, ferruginous pochard and common shelduck.”



Tamarix - Phragmites forest community of the wetland showing nests of Night herons at Yamuna Biodiversity Park (Phase I) (Photo Contributed by DDA)

Recently, INTACH or the Indian National Trust for Art Culture and Heritage petitioned the National Green Tribunal for conserving this important wetland. (Original Application No. 153 of 2014)



Sarus Crane (Courtesy: Neha Sinha)

The NGT said that Haryana state had communicated that Najafgarh had been recognised as a water body but final steps for this process remained. The NGT also directed Delhi government to take appropriate steps. Activists says that no action has been taken so far.

There are other threats to the Najafgarh drain, which is 26-kilometre road, covering Kakrola to Wazirabad, is planned on Najafgarh drain. According to natural history researchers this can impede the capacity of the storm water channel to absorb water, to self-clean, and to carry water to rivers. Further, there is a build-up of methane if drains or channels are covered which is injurious to human health. Instead of using drains and storm water channels as real estate, the water channel should be ecologically restored by intercepting sewage, using plantation of correct species which will help clean the water.



Black winged Stilts (Courtesy: Neha Sinha)

Basai wetland near Gurugram

Basai is a rain and sewage fed wetland not far from Najafgarh. While the Government of Haryana has not identified it as a wetland, this is one of NCR's best wetlands. This [piece](#) on Basai published in India Today's online opinion portal, DailyO, notes:

"It is known in bird watching circles as Delhi-NCR's finest wetland. It lies unassumingly in a corner of Gurgaon, shoved uncomfortably close to construction sites. This incredible site, hosting nearly 300 species, designated an "[Important Bird Area](#)" due to its avian wealth, is created by sewage water. But ecosystem processes sieve and save the water, creating not a filthy cesspool but a resounding arena of life. This is one of those rare places where you will find both the migratory goose in the water and the resident eagle in the sky; where you have a wet grassland merging into a wetland."

Basai is identified as an Important Bird Area (IBA) by Bird Life International and BNHS-India because it gets more than 20,000 birds each year. IBAs are globally designated sites, chosen on standardised criteria, which are significant for bird survival. The [IBA](#) list in India, identified by the Bombay Natural History Society and Bird Life International, has recently been upgraded. More than 500 IBAs have been identified. Of these, 225 contain wetlands. These sites typically hold large number of migratory birds, or are visited by critically endangered species or restricted range species.



One of the wetlands showing population of Red Crested Pochard at Yamuna Biodiversity Park
(Photo Contributed by DDA)

The [Ramsar](#) Convention is a global convention on wetland conservation and wise use. One of the criteria for Ramsar selection is the presence of over 20,000 waterfowl. This makes Basai a wetland of international significance.

According to bird lovers a major threat to Basai IBA is the Construction Waste and Demolition Plant coming up in the vicinity. Bird lovers from Delhi – from the Delhi bird Foundation – have petitioned the NGT for moving the plant. (Sinha, 2018). The amount of trash in the wetland is said to be huge and needs to be cleaned and allowed to function as a wetland.



Photo of Birds on Wetlands *(Photo Contributed by DDA)*

Ecological services of wetland

The floodplain forests interspersed with mosaic of wetlands and grasslands render many ecological services like: (i) flood relief in downstream; (ii) prevention of siltation of reservoir; (iii) water purification; and (iv) storage of flood waters and enhancement of ground water recharge, (v) buffer local ambient temperature through the ability of water bodies to absorb and release much more heat than soil/ rocks, (vi) sequester an ample amount of CO₂ of the surroundings, (vii) conservation of the aquatic genetic resources (invertebrates, turtles, fishes, zoo- and phyto planktons) of the river, (viii) promotes ecotourism and social connectivity across the urban city and (viii) to serve as an instrument to disseminate knowledge among students of school/ college and general public on the conservation and importance of wetlands

Wetlands work as natural biofilters and purify water by removing and or biodegrading a range of pollutants from waters. Wetlands that are designed to treat waste water are called constructed wetlands or treatment wetlands. The constructed wetlands remove and or biodegrade many pollutants found in waste water. For example, organic matter, organic pollutants, suspended solids, nutrients (nitrogen and phosphorous), all types of pathogens (bacteria, viruses, fungi, protozoa and helminths) and emergent pollutants like detergents, antibiotics and pharmaceuticals are removed and or biodegraded by constructed wetlands. Constructed wetlands also drastically reduce Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD). Infact, both BOD and COD represent the levels of pollutants in waters and are used for measuring removal efficiency of pollutants from waste waters by constructed wetlands.