

The Restoration of a Dead Lake

The Story of Neela Hauz, Delhi

Introduction:

History of the Lake

Many years ago, the Neela Hauz lake spread was over a 7-hectare area. Once urbanization took over the size of the lake was reduced to less than 3 hectares. The lake became nothing more than a dumping ground for raw, untreated sewage from surrounding colonies (Figure 2). When PWD constructed Aruna Asaf Ali Road Bridge across the lake, the lake was filled with solid waste and construction debris. The residents of JNU and other neighbourhood colonies filed a case against the public authorities before the Hon'ble High Court of Delhi, with a prayer that the Neela Hauz Lake should be restored back to its pristine glory. The court ordered PWD to restore it and although the land belongs to DDA, the PWD was asked to pay the restoration costs to DDA.



Figure 2: Dead Neela Hauz Lake (before restoration)



Figure1: Neela Hauz Lake Today

Restoration

As desired by the local community, DDA decided to develop Neela Hauz Lake as Neela Hauz Biodiversity Park in collaboration with the Centre for Environmental Management of Degraded Ecosystem (CEMDE). Within a span of 3 years, the lake was de-silted and the sediment used for making embankments with natural landscaping. One million litres per day of sewage was converted into clean water by using the constructed wetland system (Figure 3-5).



Figure 3: Desilting of dead lake



Figure 4: Clean water entering into lake from Constructed Wetland



Figure 5: A trail passing through vegetated embankment made of de-silted soil

Constructed Wetland and Restoration: The constructed wetland (CW) system is an alternative to the conventional technology of treating waste water, including sewage. A constructed wetland is similar to a natural wetland but it is engineered for efficient treatment of sewage. The CW designed at Neela Hauz Biodiversity Park is unique in the sense that it has two oxidation ponds (oxidation pond I and II), a gradient channel with a sieve/mesh and boulders acting as filters, three physical treatment tanks (treatment tank I with stone filters, treatment tank II with larger river bed pebbles; and treatment tank III with smaller river bed pebbles), ridges of gavel (20 mm) and furrows having 25 aquatic plants, and other rhizospheric microbial communities. (Figure 6 is a picture of a cascade and a natural wetland). The treated water at the outlet has the almost the same quality as that of river water.



Figure 6: Constructed wetland developed to make sewage into clean Water

DDA Neela Hauz Biodiversity Park: a destination for tourists

The Neela Hauz Lake has now restored to its pristine glory and has clean water. About 300 migratory birds have been sighted, besides resident birds. The embankments are landscaped and vegetated with 35 native tree species; and a scented garden, a butterfly corner and a view point are interesting additions. Neela Hauz Biodiversity Park is, today, a major destination for nature lovers and tourists' interest in viewing for recreation in the area how sewage water is made into clean water. (Figure 7.)



Figure 7: Recreational Park located by the side of Neela Hauz Biodiversity Park



Figure 8: Recreational Park located by the side of Neela Hauz Biodiversity Park