

MANAGING SUSTAINABLE – PROTECTED - AREAS IN URBAN ENVIRONMENT: OBSERVATIONS FROM PALLIKARANAI MARSH LANDS OF CHENNAI, INDIA

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A wide variety of wetlands like marshes, swamps, open water bodies, mangroves and tidal flats and salt marshes etc. exists in our country. Wetland systems directly and indirectly support lakhs of people, providing goods and services to them and have numerous functions. Wetlands are transition zones between uplands and deeper water, unique ecosystems which serves a home for diverse and fragile living organisms. The water level remains near or above the surface of the ground for most of the year. It covers about 6% of the earth's land surface (106.6 million hectares). As per Directory of Wetlands (1988), in India, a total area of 40,494 sq. km. is classified as wetlands. This constitutes only 1.21 per cent of the total land area.

People considered wetlands as unproductive areas and hence destroy or drain them for developmental activities. The importance and usefulness of wetlands was first brought to the notice of the world through a convention of wetlands held at the Iranian city Ramsar in 1971. To commemorate the date of signing of the convention on wetlands, 2nd February of every year is observed as World Wetlands Day. The Ramsar convention states that, "The wetlands are areas of marsh, fen, peat land or 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 tide does not exceed six metres." Recognizing the importance of protecting such water bodies, the Government of India operationalized a wetland conservation programme (National Wetland Conservation and Management Programme – NWCMP) in 1985/86 in close collaboration with concerned State Governments. Out of the 94 identified wetlands under NWCMP, Tamil Nadu has three areas i.e.:- **Point Calimere; Kaliveli and Pallikaranai Marsh.**

Pallikaranai marsh, one of the wetland identified for the conservation/preservation by the NWCMP is chosen as the study area. The Pallikaranai Marsh is amongst the few and last remaining natural wetlands of South India. The approximate position of the study area is between 80.09'N to 80.15'N and 12.55'E to 12.59'E. Pallikaranai marsh is a fresh water

marshland adjacent to Bay of Bengal situated about 20 km south of Chennai city with an area of 50 sq km and it falls within Perungudi and Pallikaranai villages of Kancheepuram District. The general terrain of the area is plain with an average altitude of about 5 m above mean sea level. Till about 30 years ago the marsh spread over an area of more than 5000 ha (50 sq km). Lack of understanding of the importance of a marsh in an urban environment as a flood regulator, lung space and environmentally a high productive habitat has resulted in the marsh being reduced to around one-tenth of its original extent on account of ill-planned urbanization, destructive reclamation, dumping of solid and liquid waste generated by the urban society. According to the State Revenue records the marshland was classified as wasteland and so the Government of Tamilnadu fragmented the marsh and large parts were reclaimed to be developed as residential & rehabilitation areas. Jayashree Vencatesan, (2007) from Care Earth studied about the Pallikaranai Marsh. And her results indicated that the marsh has lost about 90% of its original extent and was spread over only 593ha. The total number of species of flora and fauna dominated by the presence of 106 bird species were identified.

The marsh was being destroyed because of the factors such as reclamation to establish institutions, using a large portion of the marsh as garbage dump and disposal of partially treated sewage. After several stakeholders meeting people became aware of the problem. Finally 317 ha of the marsh were declared as Reserve Forest. This includes the area that is being used as the garbage disposal site. Thirunavukkarasu, (2002), in his presentation discusses about the encroachments in the Pallikaranai Marshland which was legally accepted by the Government of Tamil Nadu. Most of the marsh area was diverted for developmental activities.

Besides the above, an area of about 19.00 ha has been allotted for solid waste disposal of the Corporation of Chennai. The area of 100 ha is occupied by an Engineering College, an arts College, Tamil Nadu hospitals, Firewood wholesale market, Perungudi sewage treatment plant etc. The unauthorized occupation for residential purpose and area allotted for slum clearance board may be around 100 ha. Thus he states that total area of about 474 ha. of the swamp has already been allotted/occupied. Chandramohan and Bharathi, (2009) consider that, among various abiotic factors for a strong and healthy habitat in the wetland, sustainable land use development is very important which requires planning for ecological integrity and it can be

achieved through public management of common property resources. He emphasizes a combination of government, society and experts act in the allocation and use of natural resources in order to get optimum benefits. For the protection and preservation of PML there are various governmental agencies involved like Chennai Corporation, CMWSSB, CMDA, Forest Department, TNPCB, Local Panchayat etc. But for the effective management of the marshland all the above governmental organizations should cooperate between themselves. Due to the ignorance on the part of the government about the treasure house of wetland, last wetland died in Chennai was the Koyambedu Marshland. This was taken over by the government for the purposes of housing, bus terminus and vegetable and fruit markets.

At present Pallikaranai Marshland and its associated water bodies have been polluted and converted into waste water drains resulting in the loss of habitat. Evidence reveals that not only the marshland has shrunk, but also the 31 tanks located in the catchment area of the marsh. For instance, the Adambakkam Tank, one of the water sources of the swamp has reduced from its original size of 70 ha to 20 ha due to encroachments. Velachery Tank also reduced drastically due to urbanization and infrastructure development. The author feels it is better to prevent than curing the losses of depletion and degradation of Pallikaranai Marshland, and advises to utilize the best engineering practices available to minimize adverse impacts when project construction in a wetland is deemed to be the only practical alternative.