

## **A PRELIMINARY STUDY OF FAUNAL DIVERSITY IN MADIWALA LAKE; BANGALORE**

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### **INTRODUCTION**

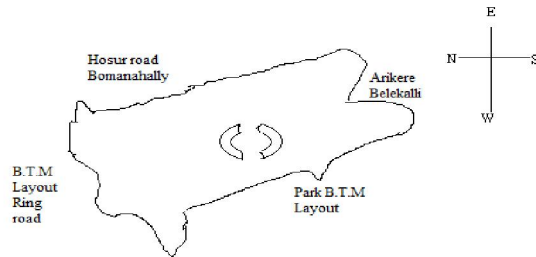
Around 30 years ago, in Bangalore, which was a city of lakes as it possessed about 262 lakes which subsequently reduced to 81. The reduction in the number of the lakes has created a lot of tension in the present days as lakes are highly valued for their recreational, educational, scientific, aesthetic, spiritual and cultural values. Lakes and its wetlands are of international importance as they form a home to a diverse fauna and flora as well as providing support to many communities. There is a need to foster awareness among the urban dwellers regarding the consequences about the loss of natural resources so that policies made for wild life and protection issues can be better evaluated.

The bottom line is, “we live where the wild things are,” said report co-author Reid Ewing, a Professor at the National Center for Smart Growth and in Urban Studies and Planning at the University of Maryland. “We need to do a better job accommodating the natural environment along with the human environment. With proper planning, it doesn’t have to be a question of us versus them or development for people versus habitat for wildlife.”

Environmental decisions taken on limited information available on biological components of the area to be impacted becomes misleading. Planning for the management of wild life in urban areas is often stifled by inadequate support and collaboration from resource agencies. Hence the proposed study aims at collection of preliminary data about the biodiversity, land cover change and human intervention to aid in the restoration of the lake facilitating the implementation of suitable actions and policies by both governmental and private organizations.

### **STUDY AREA**

Madiwalalake is one of the biggest lakes in Bangalore spread over an area of 114.3 hectare. It is situated in the BTM Layout at 12° 54' 28" North, 77° 37' 0" East in Bangalore city. The full tank level is 94.50 HA, maximum water level is 95.50 RL. Total water spread area of the lake is 7,50,803sqm and the total wetland area is 24.74 acres. The water holding capacity of the lake is 22,36,737 cubic meters. The lake comes under the administration of Karnataka State Forest Department. Children park and boating facilities are available.



## **METHODOLOGY**

The study area has been visited five times during the months of August and September. Basic data such as location, boundaries and zoogeography of the area were collected. Life forms in the area were observed through naked eyes and with the aid of a binocular and their photographs were taken using a camera. An enquiry about the human interventions and the obstacles in the maintenance of the lake was made to the nearby residents and

to the range forest officer Mr Ganesh. Visits were made to the nearby dhobi Ghats, fishery department, pollution control board. Boating was undertaken in order to study the birds and the water plants at the lake.



## RESULTS

	BIRDS	SCIENTIFIC NAMES
1	Spot billed Pelican	<i>Pelecanusphilippensis</i>
2	Ashy Prinia	<i>Pelecanusphilippensis</i>
3	Dab Chicks	<i>Tachybaptusruficollis</i>
4	Spot billed duck	<i>Anaspoecilorhyncha</i>
5	Little cormorants	<i>Phalacrocoraxniger</i>
6	Pond heron	<i>Ardeolagrayii</i>
7	Brahming kites	<i>Haliasturindus</i>
8	Grey heron	<i>Ardeacinerea</i>
9	Pariah kite	<i>Milvusmigrans</i>
10	Purple moorhen	<i>Porphyrioporphyrio</i>
11	Cattle egret	<i>Bubulcus ibis</i>
12	Little egret	<i>Egretagarzetta</i>
13	Pied bush chat	<i>Saxicolacaprata</i>
14	River tern	<i>Sterna aurantia</i>
15	Indian Moorhen	<i>Gallinulachloropus</i>

16	Darter	<i>Aniingarufo</i>
17	Jungle myna	<i>Acridotheresfuscus</i>
18	Blyth's reed warbler	<i>Acrocephalusdumetorum</i>
19	White breast kingfisher	<i>Halcyon smyrnesis</i>
20	Sunbird	
21	House crow	<i>Corvussplendens</i>
22	Pied kingfisher	<i>Cerylerudis</i>
23	Large pied wag-tail	<i>Motacillamaderaspatensis</i>
24	Rose ringed parakeet	<i>Psittaculakrameri</i>
25	Indian robin	<i>Saxicoloidesfulicatus</i>
<b>Fishes</b>		
1	common carp	<i>Cyprinuscarpio</i>
2	silver carp	<i>Hypophthalmichthysmolitrix</i>
3	Tilapia	<i>Oreochromisniloticus</i>
4	Mrigal	<i>Cirrhinuscirrhosus</i>
5	Murrels	<i>Channamarulius</i>
6	Gangeticleafish	<i>Nandusnandus</i>
7	Mola	<i>Amblypharyngodonmola</i>
8	Catfishes	<i>Heteropneustes fossilis</i> )
<b>Reptiles</b>		
1	water snake	
2	insects	
3	bugs	
4	butterflies	
5	dragon fly	
<b>Ph</b>	5.6 and 7.5.	

## DISCUSSION

Madiwalalake is a home to many migratory birds. The lake was earlier spread across 374 acres, but now only 273 acres remain. The rest of it is being encroached officially or unofficially for residential

layout formation. There are certain parts of the lake being dried up and some being polluted. Madiwalalake receives sewage and storm water from surrounding localities. Untreated sewage flows in to the lake from Bommanahally CMC area kodichikkanahally side. the lake is dirty, and full of hyacinth weeds. Even though there are no onsite sources of contamination, its proximity to industrial locations, the presence of waste water from domestic and Municipal sewage, pose a serious threat to the ecosystem of these lake. Some of these pollutants are directly discharged by industrial plants and municipal sewage treatment plants, others come from polluted runoff in urban and agricultural areas, and some are the result of historical contamination. Contaminated sediments can threaten creatures in the benthic environment, exposing worms, crustaceans and insects to hazardous concentrations of toxic chemicals. Change in the Lake water quality, decline in fisheries, poverty prevalence and migration of the local fishing community. Domestic sewage, industrial waste, detergents, flower and idols dropped during festivals etc results in eutrophication. Faecal contamination makes the whole place stinky, enhancing the multiplication of Coliform bacteria.





## **CONCLUSIONS**

### **IMMEDIATE RESTORATION STRATEGIES INCLUDE:**

1. Cleaning the water of all floating weeds, which prevents light penetration.
2. Washer men in the bank of the lake should be rehabilitated and provided alternate source of water.
3. Management strategies should focus on bank vegetation that supplies cover and food to birds, amphibians etc. A natural buffer of vegetation should be developed along the wetland margins.
4. There is also a need to identify and fence its boundary to prevent further encroachment.
5. The slum dwellers along the banks of the lake should be rehabilitated or provided proper toilet facilities.
6. As an effective measure for further diversity, detritivorous fishes, turtles etc could be introduced in the lake.
7. Adequate local community involvement in conservation and access to natural resources.
8. Monitoring the illegal dumping of plastic bags, chemicals.
9. Prohibiting fishing at the lake without permit by the local people.
10. Monitoring the indiscriminate dumping of organic wastes, idols, flowers at the lake as a part of rituals.