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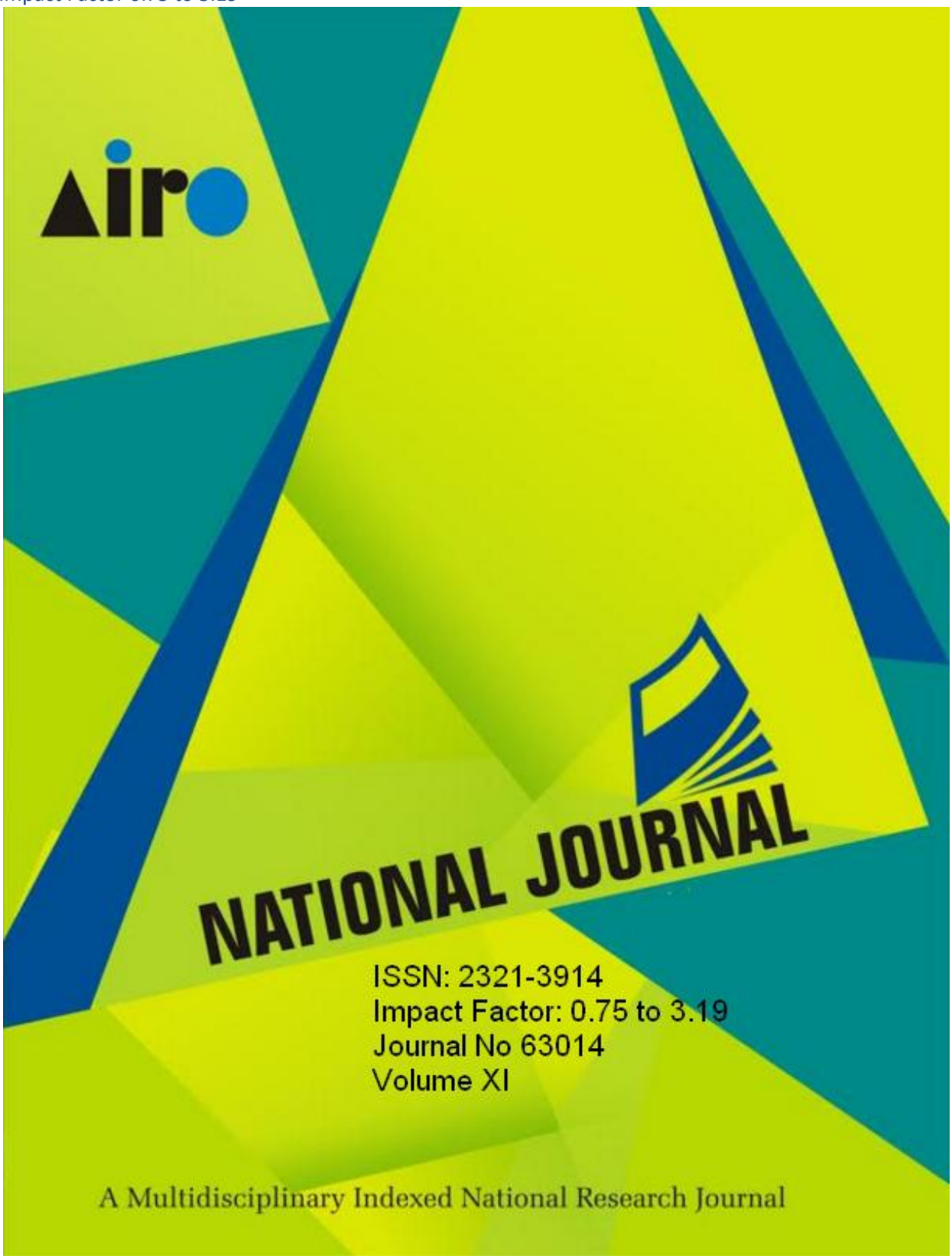

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WETLANDS - BIODIVERSITY AND CONSERVATION IN HYDERABAD KARNATAKA REGION

DR. SYEDA KAHKASHAN TANVEER FATIMA[1]
Department of Zoology
Bi Bi Raza Degree College For Women
Gulbarga – 585104

Prof. K. VIJAY KUMAR[2]
Department of Zoology
Environmental Biology Unit
Gulbarga University
Gulbarga – 585106

Dr. Zeba Parveen [3]
Department of Zoology
Bi Bi Raza Degree College For Women
Gulbarga – 585104.

ABSTRACT

An attempt has been made to study wetlands in Hyderabad –Karnataka Region with respect to biodiversity and conservation of these wetlands, study is purely based on the studies of wetlands. Wetland is a "land area that is saturated with water either permanently or seasonally, such that it takes on the characteristics of a distinct ecosystem". The primary factor that distinguishes wetlands from other land forms is vegetation adaptation to hydric soil. Wetlands are the most biologically diverse of all ecosystem.

KEYWORDS: *Wetlands, Conservations, Hyderabad-Karnataka Region etc.*

INTRODUCTION:

"There is a enough for everyone's need but not for everyone's greed"- rightly quoted by 'Mahatma Gandhiji'.

Wetlands are often described as "Kidneys of the landscape" (Mismatch and gosselink 1986). Wetlands as – 'Ramsar Convention on wetlands of 1971' defines wetlands as – "Areas of Marsh, pen, peat land or water, weather natural or artificial, permanent or temporary with water i.e, static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low sides does not exceed six meters". In simple terms, a wetland is a land area i.e, saturated with water, either permanently or seasonally according to this definition ponds, lakes, estuaries, reservoirs,

mangroves and many more water bodies comes under wetlands.

Based on their hydrological, ecological and geological characteristics they are further classified into natural and man-made. Natural wetlands includes high attitudes, Himalayan lakes, followed by wetlands of flood plains of major river systems, saline-temporary wetlands of arid, semi-arid regions, estuaries, brackish water, mangroves, swamps, lagoon.

Man-made wetlands are the result of irrigation, water supply, electricity, fisheries and flood control reservoir etc.

The present paper study aims to study wetlands if present in Hyderabad-Karnataka region. Hyderabad-Karnataka region is located at North-East Karnataka, India. It comprises Bidar, Yadgir, Raichur, Koppal, Ballary and Kalaburagi Rural. It is situated in North-Eastren part of Karnataka State and falls with in the geographical region of North maiden. It is spread between 17^0 60' to 18^0 30' Northen latitude and 75^0 60' to 77^0 70' eastern altitude (Brisbhasi, 2001). Hyderabad-Karnataka Region covers the area of 44138 Sq. Kms. This accounts 23.12% of total geographical area of the Karnataka State.

There are three major river basins of South India i.e, Godavari, Krishna, Tungabhadra covers the are of Hyderabad-Karnataka region. Karanja, Bheema, Krishna, Hagari and Chikkahagari are the major rivers of Hyderabad-Karnataka Region.

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WETLANDS SCENARIO

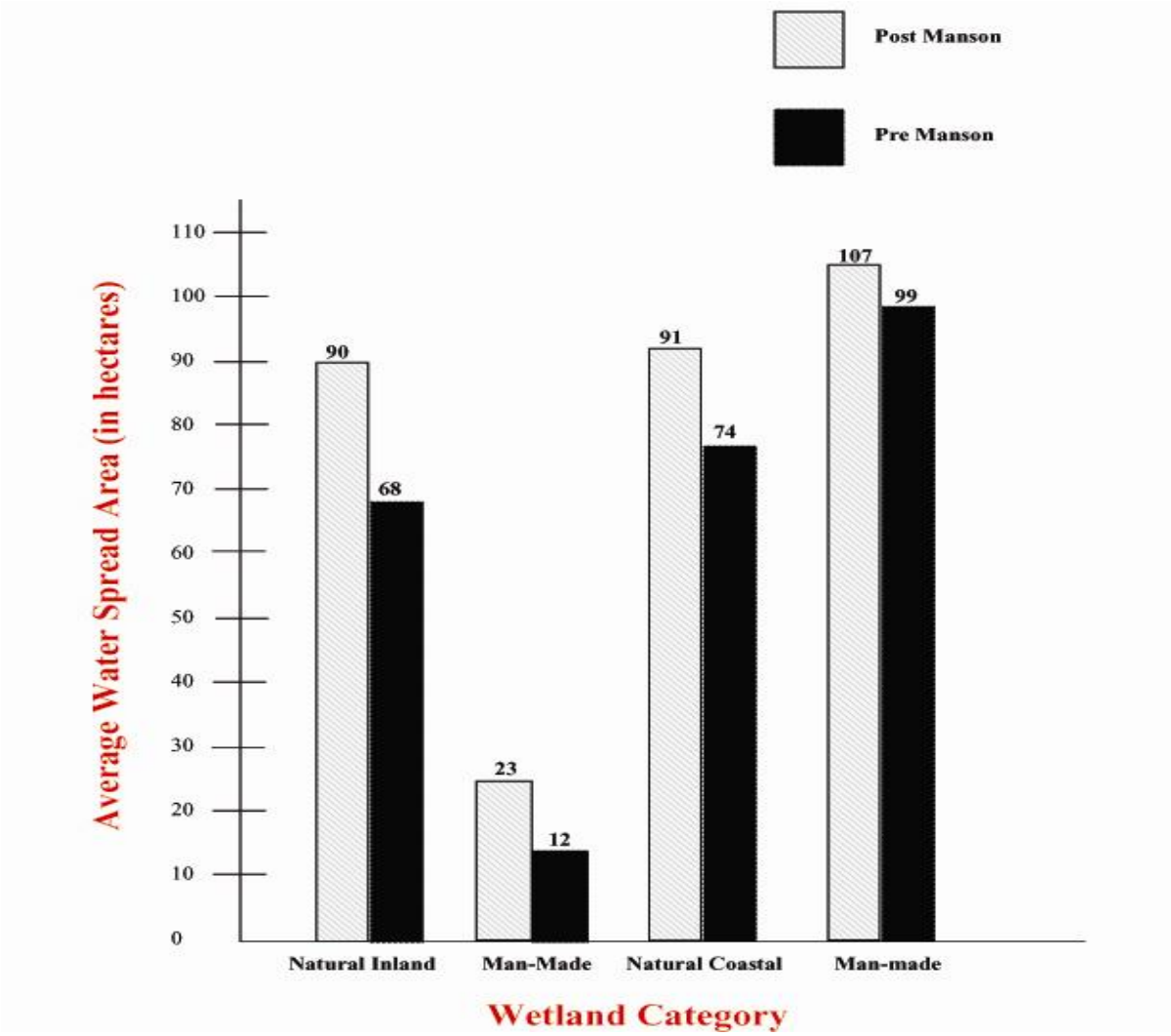
In India 2015 03 wetlands are there across the country prepaid by National Wetlands Altas 2011, by the Space Application Center, Ahmadabad.

India has 757.06 thousand wetlands with a total area of 15.3mha or 4.7% or geographical area. Wetlands in India are spread all over 36 states / Union Territories. Wetlands are the most productive ecosystems on the earth (Ghermandi et al., 2008). Wetlands as per Ramsar Convention are the most of natural bodies (such as: rivers, lakes, coastal lagoons, mangroves, coral reefs) and man-made wetlands (such as : ponds, farm ponds, irrigation fields, reservoirs, sewage farms) consist a wetland ecosystem. Only 26 out of this neumourous wetlands have been designated as Ramsar sites (Ramsar, 2013). As a result many fresh water wetlands ecosystems are threatened and many are already degraded due to urbanization; population growth and increased economic activities (Central Population Control Board, 2008).

WETLAND DISTRIBUTION IN INDIA (Area In HA)

Table 1: Extent of wetlands in India (Parikh & Parikh 1999)

WETLANDS IN INDIA	AREA (mha)
Area under wet paddy cultivation	40.9
Area suitable for fish culture	3.6
Area under capture fisheries	2.9
Mangroves	0.4
Esturies	3.9
Backwaters	3.5
Impoundment	3.0
Total Area	58.2



Graph : Average water spread area under different wetlands, India.

The water spread area of wetlands varies greatly. Inland, wetland has a water spread are of 7.4 mha in post monsoon and 4.8 mha in pre monsoon; coastal wetlands have 1.2 mha and 1 mha in post and pre monsoon respectively (SAC, 2011). Overall reduction in water spread area of inland wetlands is highest (35%) followed by coastal wetlands (16%) within inland wetland reduction is significantly higher in man-made (49.5%) whereas 24% in natural type because they are under pressure to meet various irrigational and non-irrigational needs and is subjected to high evaporation. Man-made coastal wetlands have highest area.

Karnataka has (38.5%) of water spread area of wetlands. In Karnataka it is in irrigation

tanks, ponds and reservoirs Hyderabad-Karnataka region has semi arid, hot flora and founa of this region. The seasons are irregular and rainfall is very scanty in this region. Therefore there are no natural wetlands as such present but this region has maximum number of artificial (Inland) man-made wetlands in the forms of ponds, tanks, reservoirs, canal's, irrigation tanks etc.

TABLE 2: Area Estimates of Wetlands in Karnataka

Table 90: Area estimates of wetlands in Karnataka

Area in ha

Sr. No.	Wettcode	Wetland Category	Number of wetlands	Total wetland area	% of wetland area	Open Water	
						Post-monsoon area	Pre-monsoon area
	1100	**Inland Wetlands - Natural**					
1	1101	Lake/Pond	27	638	0.10	314	272
2	1102	Ox-bow lake/Cut-off meander	-	-	-	-	-
3	1103	High altitude wetland	-	-	-	-	-
4	1104	Riverine wetland	61	1051	0.16	558	319
5	1105	Waterlogged	93	2045	0.32	1132	925
6	1106	River/Stream	334	179731	27.93	148113	109240
	1200	**Inland Wetlands -Man-made**					
7	1201	Reservoir/Barrage	70	213527	33.18	187002	92834
8	1202	Tank/Pond	10386	222030	34.50	86679	54147
9	1203	Waterlogged	53	2403	0.37	844	563
10	1204	Salt pan	-	-	-	-	-
		Total - Inland	**11024**	**621425**	**96.56**	**424642**	**258300**
	2100	**Coastal Wetlands - Natural**					
11	2101	Lagoon	2	72	0.01	68	61
12	2102	Creek	13	97	0.02	80	45
13	2103	Sand/Beach	61	1897	0.29	-	-
14	2104	Intertidal mud flat	97	1663	0.26	175	1222
15	2105	Salt Marsh	-	-	-	-	-
16	2106	Mangrove	140	967	0.15	-	-
17	2107	Coral Reef	-	-	-	-	-
	2200	**Coastal Wetlands - Man-made**					
18	2201	Salt pan	4	812	0.13	812	812
19	2202	Aquaculture pond	71	2779	0.43	2144	2551
		Total - Coastal	**388**	**8287**	**1.29**	**3279**	**4691**
		Sub-Total	**11412**	**629712**	**97.85**	**427921**	**262991**
		Wetlands (<2.25 ha)	13864	13864	2.15	-	-
		Total	**25276**	**643576**	**100.00**	**427921**	**262991**

Area under Aquatic Vegetation	80818	107259

Area under turbidity levels		
Low	65547	60149
Moderate	326173	178414
High	36201	24428

Source: National Wetland Atlas by Ministry of Environment & Forest (2011), India.

WETLAND BIODIVERSITY

Wetland executives enormous diversity according to their genesis, geographical location, water regime & chemistry dominant species and soil dominant characteristics (Space Application Center, 2011). Wetlands are important feeding and breeding area for wild life. As with any natural habitat wetlands are important in supporting species diversity and have a complex of wetland values. Wetlands are natural (Rivers, Lakes, Estuaries, lagoons, Mangroves, Swamps) man-made (irrigational canals, ponds, tanks, reservoirs etc.). which supports wetland biodiversity adding to the countries wetland wealth. It is estimated that fresh water wetlands alone contribute 20% of known range of biodiversity in India. (Deepa and Ramachandra, 1999).

In terms of fish production in India wetland plays a significant role. Majority of fish production in the country is from inland water bodies (61% of total production) from rivers, canals, reservoirs, tanks, ponds and lakes.

The state of Karnataka in South India has a rich diversity of flora and fauna. It has a recorded forest area of 38720 Sq. Kms. Which constitute 20.19% of total geographical area of the state. The state has dynamic weather due to the lands altitude topography and distance from the sea. The climate ranges from arid to semi-arid to humid tropical North-East and South-West monsoon brings rainfall to the state. The Hyderabad-Karnataka Region normally called as dry land area and the rainy seasons starts from July and end in the month October the duration of 3 to 4 months the average rainfall in the region is 762.75 mm (2007-2011). It differs from district to district within the region.

CONSERVATION STRATAGIES

Wetlands areas where water collects not in rivers or lake forms, but in ground itself forming marshes, swamps or bogs. Wetlands are very fertile areas and full of animal and plant life and are often used for hunting, fishing, drilling, open spaces for development.

To ensure a sustainable development of available wetlands will be imperative to adhere to the strategy outline by the executive director, UNEP, in this regard. In brief the strategy plays an important role to

emphasis on three key issues Viz:1. Co-ordination. 2. Training 3. Awareness Campaign.

1. Co-ordination is necessary to pursue a cross sectoral approach so that various implementing agencies and specialists belonging to agriculture, forest, agronomy, environment, hydrology, fisheries, ecology, geography, economic and other relevant fields can contribute together to develop appropriate alternatives.

2. Similarly, training facilities will aim at creating indigenous ability to carry out sustainable development work.

3. Finally raising awareness of environmental issues amongst the peoples is considered as a matter of vital importance in conservation.

The task of specialized co-ordination is a particular significance and is an intrinsic requirement in wetland conservation and management. Major components of co-ordination are being:

a) Advance scientific and technical information.

b) People's perception.

c) Development of Agencies active on Wetlands.

The Ministry of Environment, Forest and Climate Change on 31st May 2016 released the drift wetlands (Conservation and Management) Rules 2016 which is necessary for the development of concern regarding the condition of wetlands as they are deteriorating, which may leads to the destruction of natural and man-made environment.

Modifications of physicochemical environment, inturn have a direct impact on the biotic response in the condition in wetlands change even slightly, the biota may respond with massive changes in species composition and richness in ecosystem productivity.

CONCLUSION:

- In recent years, the use of wetlands for purposes other than the natural has been harmfull to the local ecosystem, one major problem is fragile nature of wetlands, one minor change can spread damage or even destroy the entire ecosystem.

- Eg: The standing ground water carries nutrients to a huge verity of plants which simultaneously purify and clean the water by flowing it through a constant mixture of soil, animal waste and absorbent plant roots.

- If the standing ground water is contaminated by factory waste in large quantities the natural purifying systems may not be able to cope up with new demands. Plant and animals will die.

- To conserve wetlands private organizations have come up for sustainable development of flora and fauna of a particular ecosystem.

REFERENCES:

1. A landowners guide; copyright (1996), tip of the mittu watershed counit. wetland conservation and protection: living with Michigan wetlands.
2. CPCB 2008 Central Population Control Board 'status of water quality in India 2007-2008, Central Population Control Board, Ministry of Environment and Forest Government of India. New Dehli.
3. Deepa, R.S:& T.V. Ramachandra 1999 : 'Impact of urbanization in the interconnectivity of wetlands'. Paper presented at the National symposium on remote sensing application for natural resources: Retrospective and prespective (XIX-XXI 1999), Indian Society of Remote Sensing, Bangalore.
4. Gosselink, J.G & R.E Turner 1978: The role of hydrology in fresh water wetland ecosystem; P.P 63-78. In: R.E. Good. D.F Whigham and R.L Simpson (cds) Freshwater wetlands. Ecological and management potential. Academic press, New York.
5. Ghermandi et al; 2008. Ghermandi, J.C, J.M Van Den Bergh, L.M Brander P.A.L.D Nunes 'The economic value of wetlands conservation and creation': A Meta Analysis [working paper 79] 2008, Froda Zione Eni Enrtico Mattei, Milan, Italy.
6. M. Jagranjosh.com : Articles of wetlands in India (website).
7. Mitsch and Gooselink 1986: Wetlands Van Nostrand Reinhold, New York.
8. Nitin Bassi, M. Dinesh Kumar, P. Pardha-Saradhi 'Status of wetlands in India' : A review of extent, ecosystem benefits, threats and management strategies. Journal of Hydrology : Regional studies Nov. 2004, Volume II, - 1 to 19, dio: 10.10.16/j
9. Parikh J & K Parikh 1999 sustainable wetland environmental governance -2, Indira Gandhi Institute of Development Research, Mumbai.

10. Prasad et al: 'Conservation of Wetlands of India' a review.