Volume : 5 | Issue : 2 | February 2016 • ISSN No 2277 - 8179

Research Paper

Perception of Local People on Urban Wilderness habitats in Kolhapur City

Environmental Science

KEYWORDS : Urban wilderness, green city, Social Impact Assessment, people's perception

Nilisha Desai — Department of Environmental Science, Shivaji University, Kolhapur, Maharashtra, India (416003)

Jay Samant — Development Research, Awareness and Action Institute (DEVRAAI) R.K.Nagar, Kolhapur – 416 013

ABSTRACT

Green spaces, green corridors, open spaces, and urban wilderness particularly in and around city, town and urban and semi-urban areas have gained significant importance in the growing urban landscape. Due to their diversity of ecological structures, characters, functions, including their role both in environmental and social health, Urban Wilderness (UW) areas are crucial and inseparable part of any urbanisation, defining the quality of life in the cities and towns. Therefore interactions of the residents with their physical and socio-cultural surroundings create a wide impact on UW areas. The tools like Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) were used in the study to reveal local people's perception regarding needs, use of and threats to the 77 UW habitat sites. Perception of 1320 local respondents on UW areas, in and around growing city of Kolhapur, was studied with multiple logistic regressions and test for goodness of fit was used for better understanding of the UWs.

Introduction

Urbanization is an increasing phenomenon globally (Germaine et al. 2001; McKinney 2006). In 1900, only 9% of the world's human population lived in "urban environments." This figure had increased to 40% by 1980, 50% by 2008, and is expected to grow over 66% by 2025 (World Bank, 1984; UNEP, 2012).Urban agglomeration is nothing but a continuous urban sprawl, constituting a town and its adjoining urban outgrowths or two or more physical contiguous towns together and any adjoining urban out growths of such towns.

In the recent years, particularly in and around growing cities, towns and urban areas, concepts of wilderness, green spaces, green corridors, and open spaces have gained considerable prominence in the altering landscapes. Since early 2000s, apart from classical 'greening concepts', the concepts of 'urban wilderness areas', 'green city', 'liveable city' came front with great prominence. (Rink, 2009)

It is to be understood that the 'Wilderness Areas (WA) are the places where biotic diversity is recognised and valued by society and are defined using arbitrary thresholds of remoteness, naturalness and total area.' The idea of wilderness in the city is a relatively a new concept even for town planners (Meyre, 2009). According to the World Commission on Protected Area, (WCPA, 1992) 'Urban Wilderness' as "a large area of unmodified or slightly modified land, and / or sea, retaining its natural character and influence without permanent or significant habitation which is protected and managed so as to preserve its natural condition". Today world over urban wilderness is considered as a natural heritage with serious concern about it is being threatened in the process of urbanisation since the early twentieth century (Michele, et. al 2006).

Urban wilderness areas include diverse habitats in natural or semi natural conditions including forests, woodlands, wetlands, grasslands, and even plantations and traditional orchards and fields. Basically wilderness areas provide space, shelter and food to a diverse wild fauna in close company of man. Urban ecology addresses this multiplicity of functions by viewing human and natural systems in urban areas not as separate entities, but as interacting components of an integrated whole (Grimm et al. 2000; Pickett et al. 2004; Alberti et al. 2008).

The concept of 'Green City' has emphasis on inclusion and integration of green spaces, open spaces, and wilderness habitats in traditional urban environment. Though these habitats act as lungs of any urban landscape, In India they are increasingly shrinking and getting degraded due to the anthropogenic pressure as a result of unplanned urban growth. United Nations Environment Program (UNEP) has mobilised the concept of 'liveable city'which aims to combine environmental management and planning in order to improve the quality of life for citizens. It is also determined by the access of residents to meet up their needs (Palej, 2000). In nut shell liveable city can also be referred as Sustainable City as liveable city provides livelihood and ecological sustainability (Evans, 2002).The recent 'smart city' and 'smart village' concept of Government of India, is though based on similar concept, has more emphasis on development of infrastructure, economic development and pollution control rather than required stress on conservation of natural resources, wilderness and heritage areas. Therefore these 'smart cites' essentially need to be 'green or eco-friendly' for their sustainability, by protecting and preserving existing wilderness areas in their environs for mutual benefits of ecology, wilderness and the resident population. .

Owing to the diverse range of ecological structures, characters, and functions; including their role both in social and environmental health, Urban Wilderness (UW) areas are crucial inseparable part of the urban fabric. Along with the ecological values, in addition these areas are active resource providers, pollutant recyclers and sinkers, crucial micro habitats, breeding and roosting sites of diverse organisms, ecotonal areas, and wildlife corridors between rapidly fragmenting natural habitats. Health of the UW areas therefore intimates interactions dependence with the urban society. Therefore they need to be properly valued for their diverse long term benefits, particularly for the sustainable eco-friendly existence and development of the present and future generations in the urban environs.

In India these wilderness areas have traditionally been used by the urban society like 'local commons' as source of natural resources, for purpose of religious sites, recreation, aesthetic view, educational site, cultural asset, stress relief site etc..When protected and conserved, basically the UW areas merge local ecology with the social sphere of the urban landscape. According to Raymore (2002) the quality of life in cities and towns can thus be strongly correlated to the availability and experience of greenery and nature in the characteristic UW areas. Therefore people's interactions with their physical and socio-cultural surroundings, with socio-ecological approach, are widely used as a framework in urban Sustainable Development (SD).

Volume : 5 | Issue : 2 | February 2016 • ISSN No 2277 - 8179

This exercise, which is a part of Ph.D. study (Desai, 2014), was aimed to understand the level of awareness and perception of the local people about the existing urban wilderness areas in their vicinity, which is likely to be affected in the proposed Kolhapur Municipal Corporation (KMC) limit expansion.

Material and Methods

Study Area

The focus of the study was on the urban wilderness habitats in KMC boundary limit and the proposed expansion in its fringe villages. Kolhapur is one typical growing city in the state of Maharashtra; situated at 16^0 70' N latitude and 74^0 23' E longitudes at 546 msl on bank of Panchganga River. The city is situated near spurs of the Western Ghats and has undulating terrene. It is known for moderate climate, picturesque natural surroundings and fertile irrigated soils supporting a rich quality of life. This historical place, a municipal corporation, is still a developing city and is spread over 66.82 Km^2 area. The total population of KMC is around 5 lakh (census 2011). After the proposed expansion of KMC boundary, 17 fringe villages on its periphery with diverse wilderness habitats, will be included in the urban environ by increase in area up to 191.09 Km^2 and would support population over 7 lakh residents and a large migrant and floating population. Considering this expansion the field study sites were selected within a 20 Km periphery of Kolhapur city and within its existing boundary limits. Thus the present KMC limit and all the 17 villages, to be included in the proposed expansion, were considered for selectionof the77 field sites. Later these sites were categorised on their wilderness potential into five separate habitat types namely wetlands, grassland, hilly area, woodlands and gardens. The table no.1 shows distribution of the sites inthe five wilderness habitats categories.

Table no 1. Number of study sites in the five wilderness habitat from within and on fringe of Kolhapur Municipal Corporation (KMC) limits

Sr. No.	Habitat	Study Sites Within KMC limits	Study Sites Outside KMC limits	Total Number of Sites
1	Wetlands			
a	Irrigation tanks	08	11	19
b	Streams	02	02	04
c	Marshlands	03	01	04
d	River	01	00	01
		14	14	28
2	Grasslands	06	08	14
3	Hills	02	07	09
4	Woodlands	07	12	19
5	Gardens	07	00	07
Total		**36**	**41**	**77**

Methods

The research design included personal observations and Social Impact Assessment (SIA) as a tool of Environmental Impact Assessment (EIA) to understand perception of local people regarding value, use, threats and conservation needs of the urban wilderness habitats.

After initial pilot survey, carried out to assess local conditions, final questionnaire survey of the 1320 local residents from 77 identified sites was carried out during years 2009-11 to understand their views on the local habitat conditions(Desai, 2014). Stratified random sampling method was used in the field study. The structured questionnaire, with 23 questions in Marathi, was filled by the investigator during interaction with each respondent separately.

Data thus generated was analysed for the selected five diverse habitats. The analysis was done using MINITAB and Excel software. Multiple regression analysis, specifically Odds ratio and-Hosmer – Lemeshow test, based on a similar analytical treatment given by Schipperjin et al. (2009) for a comparable study carried out in Denmark and Odense was followed.

3. Results and Discussion -

The SIA tool is proved very effective in revealing local people's perceptions about the UWAs in their surroundings to understand how these areas could be protected and preserved for the health of the urban environment. The need, use and threats, to these natural habitats in transition, differ considerably with their type, remoteness, richness of wilderness within and current status. This is also dependent on their location and local conditions i.e. whether it's in the city or at the rural / semi urban fringe of the proposed KMC extension area. Out of the total respondents surveyed a marginal majority (51.28%) were from the KMC limits while remaining (48.72%) were from outside KMC limits.

Due to social conditions and traditional conservative setting in rural areas, women get less opportunity to express their views, though they may play a major role in managing local natural resources, including wilderness. Therefore attempt was made to get their views as much as possible. This resulted in to a ratio of 59.49% male and 40.51% female in the total number of respondents.

The profile of respondents was considered to be an important factor having influence on their views and opinions about local developmental issue including UW areas. The questionnaire covered four major profile categories such as gender, age group, educational level and income group of the respondent. Besides gender, each of the remaining three categories were further grouped to get clear picture of the perceptions of the specific clubbed groups on different aspects of the UW areas as shown in table no. 2.

Table no.2 Categories of respondents and related groups in each category

Sr. No.	Categories	Groups
1	**Age group**	group I – 18 to 35 years
		group II – 36 to 50 years
		group III – 51 to 65 years
		group IV – 66 to 80 years
		group V – > 80 years
2	**Educational level**	group 0 – Illiterate
		group I – 1^{st} to 10^{th} standard
		group II – 11^{th} to 12^{th} standard
		group III – Other qualification (Diploma/ Certificate/ ITI)
		group IV – Degree
		group V – postgraduate
3	**Income group**	group 0 – with no own annual income
		group I – less than Rs.25,000/-
		group II – Rs. 25,000 to Rs.50,000/-
		group III – Rs. 51,000 to Rs. 75,000/-
		group IV – Rs. 76,000 to Rs.1,00,000/-
		group V – >Rs. 1,00,000/-

Table no 3. Multiple logistic regression analysis of the association between the four Predictor categories in use of Urban Wildernesshabitats (wetlands, grassland, hills and woodlands)in the study area

Habitat	Wetland			Grassland			Hills			Woodlands			Urban Wilderness areas		
Predictor	Odds Ratio	95% CI		Odds Ratio	95% CI		Odds Ratio	95% CI		Odds Ratio	95% CI		Odds Ratio	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper		Lower	Upper		Lower	Upper
Gender															
Female	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Male	1.51	0.62	3.68	3.66	2.17	6.17	5.38	1.78	16.31	3.04	1.37	6.75	1.51	0.94	2.42
Age Group															
I	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
II	0.34	0.10	1.21	0.66	0.35	1.26	0.57	0.16	2.04	1.90	0.79	4.52	0.86	0.46	1.59
III	0.09	0.03	0.31	0.56	0.26	1.22	0.96	0.23	4.08	10.61	3.25	34.67	0.74	0.39	1.40
IV	0.51	0.11	2.30	0.35	0.13	0.98	0.61	0.06	6.74	12.84	2.52	65.4	0.70	0.30	1.63
V	0.13	0.02	0.87	3.04E+08	0.00	>999	2.65E+08	0.00	>999	36.85	2.59	524.05	0.68	0.13	3.56
Educational level															
0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
I	0.00	0.00	>999	1.05	0.26	4.18	1.73	0.05	60.42	0.25	0.04	1.63	0.18	0.02	1.52
II	0.00	0.00	>999	0.69	0.18	2.64	2.78	0.08	98.71	0.55	0.09	3.36	0.19	0.02	1.51
III	0.00	0.00	>999	0.58	0.1	3.21	3.39	0.06	180.09	0.00	0.00	>999	0.23	0.02	2.23
IV	0.00	0.00	>999	4.33	0.97	19.29	13.49	1.41	12077.69	0.41	0.06	2.63	0.30	0.04	2.53
V	0.00	0.00	>999	1.18E+09	0	>999	0.00	0.00	0.00	0.42	0.05	3.29	0.74	0.06	9.12
Income group															
0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
I	1.01E+09	0.00	>999	0.11	0.02	0.49	0.00	0.00	0.00	11.99	1.09	131.55	5.54E+08	0.00	>999
II	6.20E+08	0.00	>999	0.20	0.07	0.58	0.00	0.00	0.11	0.13	0.03	0.56	0.49	0.21	1.12
III	2.36	0.68	8.17	0.90	0.41	1.98	0.31	0.06	1.59	0.13	0.05	0.33	0.95	0.50	1.81
IV	4.35	1.40	13.48	0.81	0.37	1.77	0.15	0.03	0.76	0.23	0.09	0.57	0.87	0.48	1.58
V	2.92E+08	0.00	>999	0.89	0.24	3.26	0.00	0.00	0.00	0.13	0.01	1.14	8.14E+08	0.00	>999

CI – Confidence Interval

The table no 3 Expresses multiple logistic regression analysis, of the association between the four predictor categories such as gender, age, education, and income of the respondent used in the four Urban Wilderness habitats namely wetlands, grassland, hills and woodlands in the study area. In all the habitats there was interrelation between gender, age, educational status and income as predictor categories. It was revealed that men used urban wilderness areas more than women. (OR:1.51; 95% CI: 0.94-2.42). The percentages of men using habitats was for wetland, grassland, hills, woodlands and gardens 58%, 60%, 65%, 53%, and 61% respectively.

In case of education a pattern was revealed, where with increase in educational level the possibility of using wilderness areas for different purpose also increased. In Group V (post graduates) the highest use of UW area was recorded (OR: 0.74; 95% CI: 0.06 – 9.12). The use of UW areas for different unrelated purposes by income group I (less thanRs. 25000/-) and income group V (more than Rs. 100000/) (OR: 5.54E+08 and 8.14E+08) respectively was higher than that of the other income groups.

The motive of wilderness use by different groups was diverse as it was revealed that the people belonging to lower income group (group 0 to III, 66%) and with lower educational level (group 0 to III, 66%) were more dependent on wilderness areas for their subsistence and day to day activities. On the other hand respondents from higher income group and higher educational level used such areas as public place for recreation and merely as a place for morning or evening walk.

The odds ratio of using urban wilderness areas by all the age group was more or less similar. The P value of Hosmer Lemeshow was 1.00 (P >0.05) which indicates there was strong association between profile categories (gender, age, educational level and income) and opinion about use of wilderness in and around the city.

4. Conclusion

The current use of the UW areas in Kolhapur municipal corporation limits and the proposed expansion area is seen to be influenced by the user profile characters such as gender, age group, educational level and income group.

In general most of the respondents used all the wilderness habitats in their vicinity depending on their daily requirements. The utilization of the resources from these habitats varied with age and gender of the respondent. The annual household income was a crucial factor in case of the habitat use, as people with lower income group (66% respondents) were basically more dependent on the UW habitats for their subsistence. Respondents

over used or at times misused the habitats as they had free access to the vital resource in the UW area without any restrictions or accountability for the sustained use of the resources.

Expectedly the respondents had limited awareness and information about the ecological or biodiversity values of the UW habitats. They also most did not have any idea about the changing status of the wilderness characteristics of these neighbouring wilderness habitats. However, senior respondents i.e.age group-III (51-65 years), group-IV (66-80 years) and group-V (> 80 years) were relatively more articulate (i.e. 62%, 67% and 100% respectively) than other groups, about this vital parameter due to their perception of the past and present and experience. They endorsed decreasing status of habitats and the biodiversity in the UW areas.

Some respondents (49%) reported minor accidental risks due proximity of their houses to nearby wilderness areas. At the same time little more (51%) respondents reported that there was no risk at all due to the wilderness areas in the vicinity. Out of the respondents (12%) who reported risk from wilderness areas mentioned snakes, rodents, insects and mosquitoes as menace. In general a large proportion (71%) of respondents endorsed that culturally, aesthetically and environmentally the urban wilderness areas were necessary for eco-friendly development of their area in particular and the city in general.

It can be concluded, based on the perception of the local respondents, that it is essential to create awareness among the locals and other stakeholders about the values, direct and indirect benefits, and ecological necessity of protection of the urban wilderness areas. Ultimately responsibly of the 'wise use' and preserving the quality of the UW habitats lie with them for their own needs and health, as well as for the future generations.

According to Dearborn and et al. (2009), within any country, cultural traditions, financial resources, religious beliefs, and local environmental issues all will influence the goals of urban wilderness conservation. Thus, to make successful choices among priorities, the local stakeholders will need to be involved in protection and preservation of the urban wilderness habitats. The urban planners in KMC need to take note of the peoples' aspirations and perceptions in order to ensure sustainable urban development.

REFERENCE

• Alberti M; (2008) Advances in urban ecology. Integrating humans and ecological processes in urban ecosystems Springer, New York • Alberti, M. J. (2005) The effects of urban patterns on ecosystem function. International Regional Science Review.28(2):168-192. • Alberti, M. J., J. Marzluff, E. Shulenberger, G. Bradley, C. Ryan, and C. Zumbrunnen. (2003) Integrating humans into ecology: opportunities and challenges for studying urban ecosystems. BioScience 53(12):1169-1179. • Anonymous (1975) Regional Plan for Kolhapur –Ichalkaraji region. (1971-91) • Anonymous (2001) Census of India, Government of India (GOI) • Desai Nilisha (2014) Study on conservation of urban wilderness: a case study of Kolhapur city, Ph.D. thesis, Shivaji University, Kolhapur • Evans Peter (2002) Livable Cities? : Urban Struggles for Livelihood and Sustainability, University of California Press • Grimm, N. B., J. M. Grove, S. T. A. Pickett, and C. L. Redman. (2000) Integrated approaches to long-term studies of urban ecological systems. BioScience 50:571-584. • McKinney, M. (2006) Urbanization as a Major Cause of Biotic Homogenization. Biological Conservation. 127, 247-260. • MyereAmenda (2009) The Nature of and Need for Urban Parks (Private circulation Paper) • Palej, A. (2000) "Architecture for, by and with Children: A Way to Teach Livable City". Paper presented at the International Making Cities Livable Conference. Vienna, Austria. • Pickett S., Cadenasso, M. And Grove, J. (2004) Resilient cities: Meaning, models, and metaphor for integrating the ecological, socio-economic, and planning realms. Landscape and Urban Planning 69, 369–384. • Pickett, S. And Grove, J. (2009) Urban ecosystems: what would Tansley do? Urban Ecosystems 12, 1-8. • Pickett, S.T.A., and M.L. Cadenasso. (2002)The ecosystem as a multidimensional concept:meaning, model, and metaphor. Ecosystems 5:1-10 • Rink Dieter (2009) Wilderness: The Nature of Urban Shrinkage? The Debate on Urban Restructuring and Restoration in Eastern Germany, Nature and Culture 4(3),: 275–292 • Schipperijn Jasper, Ola Ekholm, Ulrika K. Stigsdotter, Mette Toftager, Peter Bentsen, Finn Kamper- Jorgensen, Thomas B. Randrup (2009) Factors influencing the use of green space: Results from a Danish national representative survey, Landscape Urban Plan • Schipperijn, J. (2010) Use of urban green space, Forest & Landscape Research No. 45-2010. • Schneider A, Logan KE, Kucharik CJ (2012) Impacts of urbanization on ecosystem goods and services in the U.S. Corn Belt. Ecosystems 15:519–541 • United Nations (1993) World Urbanisation Prospects- The 1992 Revision United Nations. New Work