



Short Communication

Study on Noise Pollution level in Parks of Allahabad City, India

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Abstract

The present work is concerned with assessment of Noise pollution at different parks of Allahabad on weekdays (Normal Days). In the present study the Noise level were measured with the aid of TES1350A sound meter along with GPS location of the monitoring sites. The Noise pollution was found to be more than 50 dB (A) during day and 40 dB (A) in night which are the prescribed standard level for Silent Zone by CPCB at all parks under investigation on weekdays. The Lnp values for Sumitranandan Park was 79.06 dB (A), P D Tandon Park was 77.81 dB (A) and Chandrashekhar Park was 77.68 dB (A); these parks had highest level of noise pollution whereas Lnp values Minto park was 75.58 dB (A), Bharadwaj Park was 70.08 dB (A) and Khusro Bagh was 67.50 dB (A); these parks recorded lower level of noise pollution. The reason behind high level of pollution was the traffic passing by the park at some parks while other parks had low level of noise due to presence of tree plantation or about 10 meter high boundary or height of park level was above the road level. Therefore the noise pollution can be significantly reduced by developing green zone around the park as well as building wall (noise barrier) around the park.

Keywords: Noise pollution, parks, traffic.

Introduction

The word Pollution has been derived from the Latin word 'Pollutionem' (meaning to defile or make dirty). Pollutant is a substance, the presence of which causes pollution. The pollutants reach us through the air we breathe, the water we drink, the food we eat and the sound we hear¹. Noise is the term given to the sound (produced by vibration in air or other medium) which becomes loud, or disagreeable, or unwanted. Since the unwanted sound (i.e. noise) certainly produces several undesirable effects on our body health, it is termed as an environmental pollutant. The Air (Prevention and Control of Pollution) Act 1981 added noise as one of the air pollutants.

So noise pollution may be defined as unwanted sound, which gets disposed of into the environment without monitoring its adverse effect on living being.

Sources of noise: The anthropogenic activities mainly the development of transport and the urbanization and industry are the source of origin of noise. The outdoor noise sources dominating worldwide are mainly construction and transportation systems, including aircraft noise, rail noise and motor vehicle noise (Noise Pollution and Abatement Act of 1972). Chief causes of noise generated from traffic are the exhaust systems and motors of automobiles².

Transportation Noise: The Chief source of urban and community noise are mainly motor vehicles and aircrafts.

Railway machinery has a high noise output but bring about less annoyance than either air traffic or road traffic³.

Urban Noise: The urban noise distribution patterns are quite complex and differ from city to city; yet, in general source of origin remains common. A noise base exists twenty-four hours per day, consisting of noise from household appliances, heating and ventilating, ordinary atmospheric noises, and others low level noises. This noise base is usually of low, between 30 to 35 dB³.

Specific Noise Sources: Specific cases consist of noise sources which are characterized by either intense or widespread or unavoidable nature of noise. Building demolition and construction work require powerful blows and large forces and are often carried out in congested urban locations³.

Silence Zone is zone having schools, colleges, banks, parks and hospitals.

Material and Methods

The Noise Pollution level was monitored at various parks of Allahabad City on the weekdays (Normal days) for 30 days in between 4pm to 7pm (peak period). For this purpose 6 locations comprising Silent zone (viz. Minto Park, Khusro Bagh, Chandra Shekhar Azad Park, P D Tandon Park, Sumitranandan Park and Bharadwaj Park) selected within the city. The noise levels were monitored with the aid of TES1350A sound meter. The standards of noise level were compared with that of the

standards prescribed in Environmental Protection Rules, 1986 and standards of CPCB⁴.

According to recommended noise standards, the maximum limit for noise level in Silence Zone during day is 50dB and in night is 40dB⁵.

Results and Discussion

The noise levels were monitored and measured with the aid of TES 1350A sound meter. The level of Noise Pollution during present study of parks was noticed to be higher when compared with the standards limits⁶. The sound levels reported at different parks in Allahabad City which comes under the silent zone are shown in the table 1.

Table-1
Values of L10, L90 and Lnp for six parks for week days between 4 pm to 7 pm Parameter measured in dB (A)

Parks	Parameters	Maximum	Minimum
Khusro Bagh	L ₁₀ (mean1)	61.32	53.57
	L ₉₀ (mean1)	56.63	50.78
	Lnp(1)	67.50	56.31
Chandra Shekhar Azad Park	L ₁₀ (mean2)	64.17	56.5
	L ₉₀ (mean2)	60.37	53.4
	Lnp(2)	77.68	59.73
Sumitranandan park	L ₁₀ (mean3)	68.6	61.47
	L ₉₀ (mean3)	64.84	59.8
	Lnp(3)	79.06	60.38
P D Tandon park	L ₁₀ (mean4)	70.24	61.19
	L ₉₀ (mean4)	64.94	58.13
	Lnp(4)	77.81	64.35
Parks	Parameters	Maximum	Minimum
Bharadwaj park	L ₁₀ (mean5)	64.17	58.27
	L ₉₀ (mean5)	60.32	54.98
	Lnp(5)	70.08	61.79
Minto park	L ₁₀ (mean6)	69.43	59.45
	L ₉₀ (mean6)	64.77	56.22
	Lnp(6)	75.58	61.78

In table 1 the maximum value of all parameters were recorded high around for Khusro bagh on Friday at 5pm to 6pm mainly due to people in park and noise of train horns passing by the park. The maximum value of L10 and L90 were recorded high around for Chandra Shekhar Azad Park on Tuesday at 4pm to 5pm whereas Lnp was high on Thursday at 5pm to 6pm due to heavy rush of traffic passing by the park. The value of most parameters like L10 and L90 were recorded high around for Sumitranandan Park on Thursday at 4pm to 5pm whereas Lnp was high on Tuesday at 5pm to 6pm due to heavy rush of traffic passing by the park. The maximum value of all parameters were recorded high around for P D Tandon Park on Monday at 4pm to 5pm due to heavy rush of traffic passing by the park. The value of most parameters like L10 and Lnp were recorded high around for Bharadwaj Park on Thursday at 4pm to 5pm whereas

L90 was high on Tuesday at 5pm to 6pm due to heavy rush of traffic passing by the park. The maximum value of all parameters were recorded high around for Minto Park on Friday at 5pm to 6pm due to excessive crowd passing by the park and use of loudspeakers on the event of Mahashivratri.

Recommendations: In case of Silent Zone (especially parks) the volume of traffic should be reduced by diverting the traffic passing by the Silent Zone and use of horn should be minimized. There should be plenty of trees in open space around the Silence Zone.

Conclusion

From the present Investigation it was concluded that Noise level of parks is high as per Ambient Noise Standards. From the data it was also concluded that the Lnp was found to be high at Sumitranandan Park, P D Tandon Park and Chandrashekhar Park. So the parks require Noise barriers like wall around the park or develop green zone by planting trees.

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