

Light and noise pollution: Invisible wall between urban residents and nature

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When I was a child, I used to hope that my city could one day become developed and prosperous like New York – The City That Never Sleeps. However, as I grew older, I realized that owning that nickname came with a price: light and noise pollution.

Light and noise pollution is detrimental to humans' health. Scientists have found that artificial light exposure at night may interrupt sleep and muddle the circadian rhythm, affecting human physiological functions, like brain wave patterns, hormone production, cell regulation, etc. For example, artificial light can lower melatonin production at night, increasing the risk of developing cancers [1]. Meanwhile, noise pollution negatively affects various humans' cognitive abilities [2]. Noises were revealed to have a negative impact on the brain's verbal and working memory domains in both psychotic patients and healthy persons [3].

Are the most concerning consequences of light and noise pollution detrimental to human health? In my opinion, light and noise pollution may be causing a greater worry at the societal level by widening the gap between human generations living in cities and nature.

In the AISDL team, I got a mentor and a friend who both love nature so much. My mentor told me on some occasions that he enjoyed listening to the natural sounds since they helped grow his passion and love for nature. Still, the natural soundscapes were too scarce in Hanoi (where we worked) due to traffic and human activity noises [4]. And my friend usually commented in a nostalgic voice when looking at the sky at night that the sky in the past was

much more beautiful than in the present. Although the stars were still there, nothing could be seen from the sky because the city lights were so bright at night, he explained [5].



Pu Luong Natural Reserve, Thanh Hoa, Vietnam; The author in the middle, with AISDL colleagues Viet-Phuong La (L) and Tam-Tri Le (R).

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My mentor's and friend's thoughts have made me wonder about the perceptions of the generations born and nurtured entirely in urban areas. Humans' perceptions are sculptured by what they encountered in the past, are encountering at the moment, and anticipate encountering in the future [6,7]. Therefore, how can the generations growing up in urban

areas know the values of nature when the beauties of nature appear to be out of their perceivable ranges? [8]. How can those generations build up an eco-surplus culture and prevent the climate system from reaching the tipping points if they do not understand the values of nature? [9,10]. At the moment, the answers seem to be fairly gloomy.

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