Join hands to fight light pollution

Earlier this week, I was part of a committee discussing the design of theater and performance spaces. There was a lot of discussion on light and the effects of light on stage- ranging from LED's & Metal halides, the pros and cons of all different sources of light were being discussed including the effect lighting has on the moods and minds of people to their direct impact on the skin. When light has the ability to alter or enhance behaviour or physiology in people, surely it must have the same effect on other creatures.

The debate on lighting and sustainability covers a large gamut. There is day-lighting and planning principles for optimum use of natural light within the built forms; Efficiency through light fixtures (LED's, CFL's and Bulbs) is another favourite energy and lighting talk; However, the one topic that gets the least attention is Light Pollution- aka photo/ luminous pollution. Simply described it is excessive, misdirected, obtrusive non-natural light which is introduced by humans to artificially light up the environment. Very often this is found to be the cause of degrading night time habitats for animals and birds thereby disrupting the natural balance of the ecosystem. By artificially illuminating the night time sky, we find that that there is a lot of energy wasted, there is an adverse effect on human health and psychology, increased pollution and other effects on astronomy as well.

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From migratory birds to plankton and algae, the effects of ecological light pollution have been well documented. Studies confirm that artificial night time lighting confuses animal navigation, alters interactions, changes predator-prey relations and causes physiological harm. The rhythm of life is orchestrated by the natural diurnal patterns of light and dark, so disruption to these patterns impacts the ecological dynamics.

Light pollution is oft considered a side effect of the industrial civilization. Lighting from buildings, advertising, offices, factories, streetlights, and illuminated sporting venues mostly contribute to this problem. Skyglow is the diffused glow that can be seen over populated areas. Light can reflect in the sky in two ways — Indirect: reflected off illuminated surfaces or Direct: by upward facing light fixtures that are not shielded. This light is then redirected by the atmosphere and clouds back toward the ground trapping it within our atmosphere. The brightness of skyglow is affected by the amount of light used, the shielding characteristics of the light fixtures, and by the color of the light sources.

Direct skyglow is reduced by selecting the right lighting fixtures which don't emit light above the horizontal. Indirect skyglow is harder to manage; the only effective method for limiting it is by reducing the number of lights. It is interesting to study the light pollution map of India — we are one of the brightest densest spots in the world! There is a uniform light intensity across the entire country vs other countries where there are hot spots around major urban centers which quickly fade out.

While this can be tied back to urbanisation and development of rural regions of the country, it is also adversely impacting the natural ecology of our land. The global dark sky movements have people campaigning to reduce light pollution with places now being certified as "Dark Sky" approved around the world. Save energy and the ecology — switch off India!