

Monday, September 14, 2009 DNA BANGALORE Page 2

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<< Back to Headlines

B'lore teeming with hot spots

An IISc study has found that a large number of heat islands have come up across Bangalore Bosky Khanna. Bangalore



The urban heat island is a phenomenon that was first described two centuries ago, as land use changed and modification of land surfaces caused pockets of metropolitan areas to record higher temperatures than areas immediately surrounding them.

A study conducted by the Indian Institute of Science (IISc) shows that there are temperature variations within the IT city, which now has a large number of heat islands. These are the result of unscientific planning, increased tarmac and glass buildings and loss of lung spaces.

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"Land Surface Temperature with land cover dynamics: Multi-Resolution, Spatio-temporal

data analysis of Greater Bangalore" is a study conducted by the Centre for Ecological Sciences (CES) of IISc. The study states that enhanced land surface temperatures (LST) have been recorded in some pockets of Bangalore, as there as has been a steady increase, over the past three decades, in paved surfaces and buildings. This is accompanied by the erosion of green cover.

In some pockets of the city, the temperature is higher by 1-3°C compared to the areas adjacent to them. Also, the number of these heat islands have been increasing, says Dr TV Ramachandra, a researcher in CES.

"The city's major heat island pockets are ITPB, Koramangala, Peenya Industrial Area, Whitefield and Tech Park. Most parts of Bangalore South are gradually becoming heat islands due to rapid loss of tree cover. If the existing Race Course too is removed, the entire stretch is likely to turn into a heat island," Dr Ramachandra said.

Unprecedented urbanisation and concentrated development activities caused a change in land use during 1973-2007, a chance that cannot be compared to developments that have occurred in years prior to this period. The period has seen a 466% increase in paved surfaces (buildings, roads), which has led to an increase in land surface temperature by about two degree Celsius in the last three decades. Vegetation cover and water bodies act as heat sinks and bring temperatures down. When the paved surfaces increase and there are buildings that use a lot of glass, solar energy is reflected. Dr Ramachandra explains that proper landscaping with parks helps reduce temperature. Small grass lawns alone will not serve that purpose. At least 30% of the area needs to be green, to control such heating, he says.

The overall mean temperature has increased due to the heat islands. Nearly 200 years ago, the maximum temperature in May in the city stood at 21°C. Now, it is 33-34°C, says Dr Ramachandra. Environmentalist Suresh Heblikar explains that radiation from glass surfaces and tarred roads, and emissions from industries and air-conditioners cause urban heat islands.

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