



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	The Times of India		
Date	8 th July 2026	Language	English
Headline	Urban heat hotspots spreading beyond cities in Odisha: IIT Study		
Link	https://timesofindia.indiatimes.com/city/bhubaneswar/urban-heat-hotspots-spreading-beyond-cities-in-odisha-iit-study/articleshow/132264917.cms		



Bhubaneswar: Rapid urbanisation, industrial expansion and degradation of natural landscapes are driving a sharp rise in land surface thermal hotspots across [Odisha](#), with some districts witnessing hotspot expansion of up to 9% annually, according to a new study by researchers from IIT Bhubaneswar.

The study, recently published in the Royal Society of Chemistry journal *Environmental Science: Advances*, analysed satellite data and mapped the evolution of

thermal hotspots in the state. Researchers Dikshika Mahapatra and Debadatta Swain, professor at the School of Earth, Ocean and Climate Sciences, IIT Bhubaneswar, found that built-up areas consistently recorded higher thermal stress than non-built-up regions.

Districts witnessing rapid population growth, urban expansion and industrialisation, including Khurda, Ganjam, Sundargarh, Sambalpur, Angul and Jharsuguda, emerged as major thermal hotspot zones. The study found that hotspot coverage in several coastal districts increased by 2% to 9% annually between 2017 and 2023.

Swain said Khurda, home to state capital Bhubaneswar, showed a clear rise in thermal hotspot spread over the past seven years.

The researchers found that concrete structures, roads and other impervious surfaces absorb and retain more heat, resulting in higher land surface temperatures compared to vegetated areas.

However, the study highlighted that rising heat is no longer solely an urban phenomenon. Interior and hilly districts such as Balangir, Kalahandi, Rayagada, Gajapati, Nuapada and Kandhamal recorded extensive persistent thermal hotspot coverage due to forest degradation, vegetation loss, expansion of barren land and shifting cultivation practices, Swain said.

Rayagada topped the list, with 92.09% of its area identified as persistent thermal hotspots, followed by Gajapati at 86.16%, Nayagarh at 76.05% and Balangir at 75.02%.

The researchers warned that prolonged exposure to thermal hotspots can intensify heat stress, worsen public health risks and increase energy demand. Growing thermal stress may also aggravate vector-borne diseases and heat-related illnesses, especially in densely populated urban-industrial regions.

The study also assessed human exposure to thermal hotspots and found that districts such as Ganjam, Sundargarh, Khurda and Cuttack had the highest numbers of people living in hotspot-prone zones. Rayagada and Nayagarh showed persistently high proportions of their population exposed to extreme surface heat.

To tackle the challenge, the researchers recommended district-specific mitigation measures, including expansion of urban green spaces, heat-resilient infrastructure, cool roofs, restoration of mangroves and riverbank vegetation, watershed management and protection of forests in the [Eastern Ghats](#). They also advocated integrating high-resolution satellite monitoring into urban planning and climate-resilience strategies.

Swain said the findings demonstrate how satellite-based thermal hotspot detection can help identify vulnerable regions and support evidence-based policy interventions for climate adaptation and sustainable development.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	Edexlive.com		
Date	8 th July 2026	Language	English
Headline	IIT Bhubaneswar study warns of intensifying heat due to urbanisation in Odisha		
Link	https://www.edexlive.com/news/iit-bhubaneswar-study-says-urbanisation-land-degradation-intensify-heat-in-odisha		



Bhubaneswar: A recent scientific study by IIT Bhubaneswar has revealed that rapid urbanisation and fast land degradation were major factors behind the intensifying surface heat across Odisha.

The study by researchers from the School of Earth, Ocean and Climate Sciences, Indian Institute of Technology (IIT) Bhubaneswar, has revealed a significant rise in land surface thermal hotspots across Odisha, highlighting the growing

impact of rapid urbanisation and land-use changes on the state's climate, an official statement issued by the institute said.

The IIT Bhubaneswar stated that the research has been published in the prestigious Environmental Science: Advances, a journal of the Royal Society of Chemistry. The study was conducted by Dikshika Mahapatra and Debadatta Swain, and they analysed 20 years of satellite data to understand how thermal hotspots have evolved across all 30 districts of Odisha.

The findings show that rapidly growing urban and industrial areas, particularly Khordha, Ganjam, Cuttack, and Sundargarh, are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by 2 per cent to 9 per cent annually in several coastal districts.

The research also found that rising heat is no longer confined to cities. Several interior and hilly districts, including Balangir, Kalahandi, Rayagada, and Gajapati, are also experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land, the institute said.

The researchers note that prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability. The study demonstrates how satellite-based monitoring can help identify vulnerable regions and support evidence-based planning for climate resilience.

To address the challenge, the study recommends region-specific solutions, including expanding urban green spaces, adopting heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental management.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
Indian Institute of Technology Bhubaneswar

Media/Publication	Uniindia.com		
Date	8 th July 2026	Language	English
Headline	IIT Bhubaneswar study flags rising thermal hotspots across Odisha, urges region-specific action plan		
Link	https://www.uniindia.com/iit-bhubaneswar-study-flags-rising-thermal-hotspots-across-odisha-urges-region-specific-climate-action/east/news/3902701.html		

Bhubaneswar, July 8 (UNI) A study by the Indian Institute of Technology (IIT) Bhubaneswar has revealed a worrying rise in land surface thermal hotspots across Odisha, with several coastal districts recording an annual increase of 2 to 9 percent in hotspot coverage. The researchers have called for region-specific climate adaptation measures to address the growing impact of rapid urbanisation, land-use changes and environmental degradation. Published in Environmental Science: Advances, a prestigious journal of the Royal Society of Chemistry, the study was conducted by Dikshika Mahapatra and Dr. Debadatta Swain of the School of Earth, Ocean and Climate Sciences, IIT Bhubaneswar.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	Odishadiary.com		
Date	8 th July 2026	Language	English
Headline	IIT Bhubaneswar Study Maps Odisha's Rising Thermal Hotspots, Calls for Region-Specific Climate Action		
Link	https://orissadiary.com/iit-bhubaneswar-study-maps-odishas-rising-thermal-hotspots-calls-for-region-specific-climate-action/		

Bhubaneswar: A new study by researchers from the School of Earth, Ocean and Climate Sciences, Indian Institute of Technology (IIT) Bhubaneswar has revealed a significant rise in land surface thermal hotspots across Odisha, highlighting the growing impact of rapid urbanization and land-use changes on the state's climate. The research has been published in the prestigious *Environmental Science: Advances*, a journal of the Royal Society of Chemistry. The study, conducted by Ms. Dikshika Mahapatra and Dr. Debadatta Swain, analysed 20 years of satellite data to understand how thermal hotspots have evolved across all 30 districts of Odisha. The findings show that rapidly growing urban and industrial areas, particularly Khordha, Ganjam, Cuttack, and Sundargarh, are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by 2% to 9% annually in several coastal districts. Interestingly, the research also found that rising heat is no longer confined to cities. Several interior and hilly districts, including Balangir, Kalahandi, Rayagada, and Gajapati, are experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land.

The researchers note that prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability. The study demonstrates how satellite-based monitoring can help identify vulnerable regions and support evidence-based planning for climate resilience. To address the challenge, the study recommends region-specific solutions, including expanding urban green spaces, adopting heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental management.

This publication reflects IIT Bhubaneswar's continued commitment to research that addresses pressing environmental challenges and contributes to sustainable development through science and technology.



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Indian Institute of Technology Bhubaneswar

Media/Publication	PTINews.com		
Date	8 th July 2026	Language	English
Headline	IIT Bhubaneswar study says urbanisation, land degradation intensify heat in Odisha		
Link	https://www.ptinews.com/story/national/iit-bhubaneswar-study-says-urbanisation-land-degradation-intensify-heat-in-odisha/3841621		

BHUBANESWAR: (Jul 8) A recent scientific study by IIT Bhubaneswar has revealed that rapid urbanisation and fast land degradation were major factors behind the intensifying surface heat across Odisha.

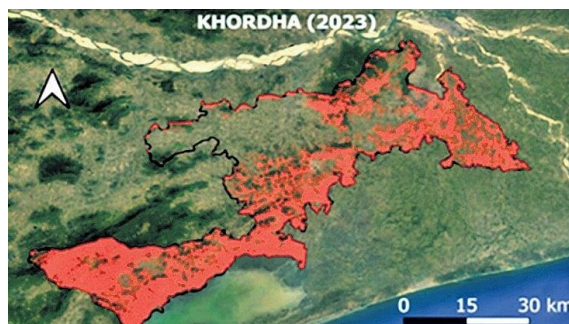
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भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	The New Indian Express		
Date	9 th July 2026	Language	English
Headline	Urbanisation, land degradation fuel surface heating; thermal hotspots grow across Odisha		
Link	https://www.newindianexpress.com/amp/story/states/odisha/2026/Jul/09/urbanisation-land-degradation-fuel-surface-heating-thermal-hotspots-grow-across-odisha		



BHUBANESWAR: Land surface thermal hotspots are expanding rapidly across Odisha, with some districts recording annual growth of up to 9 per cent, said a new study by researchers at the Indian Institute of Technology (IIT) Bhubaneswar, explaining the rising heating trends in the state.

The study attributed the trend to rapid urbanisation, industrial expansion and the degradation of natural

landscapes and warned that rising surface temperatures are increasingly affecting both cities and rural areas.

Published in *Environmental Science: Advances*, a journal of the Royal Society of Chemistry, the research analysed two decades of satellite data to map the evolution of thermal hotspots across all 30 districts of the state.

Conducted by Dikshika Mahapatra and Dr Debadatta Swain of the School of Earth, Ocean and Climate Sciences at IIT Bhubaneswar, the study highlighted the growing influence of land-use change and urbanisation on Odisha's thermal landscape.

The findings showed rapidly urbanising and industrial districts such as Khurda, Ganjam, Cuttack and Sundargarh have witnessed a steady rise in extreme land surface temperatures, with thermal hotspot coverage expanding by between 2 pc and 9 pc annually in several coastal districts.

Khurda, Cuttack, Sambalpur, Sundargarh, Angul and Jharsuguda recorded the highest concentration of hotspots over built-up areas, where impermeable surfaces such as concrete and asphalt, along with dense infrastructure, retain more heat and raise daytime temperatures.

The study found that increasing heat is no longer confined to urban centres. Interior and western districts, including Bargarh, Balangir, Kalahandi and Nuapada, have also experienced a rise in thermal hotspots over non-built-up areas due to the expansion of barren land, fallow agricultural fields and forest degradation.

Sundargarh emerged as a unique case, recording high hotspot concentrations in both urban and non-urban landscapes, reflecting the combined impact of industrialisation and environmental degradation.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Among all districts, Rayagada recorded the highest persistent thermal hotspot coverage at 92.09 pc, followed by Gajapati (86.16%), Nayagarh (76.05 %), Balangir (75.02 %), Nuapada (66.14 %), Kandhamal (62.56 %) and Kalahandi (60.87 %). In contrast, Balasore, Bhadrak, Koraput and Nabarangpur reported relatively low hotspot coverage. The study also found that population exposure to thermal stress was highest in Ganjam, Sundargarh, Khurda and Cuttack owing to their large populations and rapidly expanding urban footprints.

Researchers warned that prolonged exposure to thermal hotspots could have far-reaching implications for public health, electricity demand and environmental sustainability as climate change intensifies.

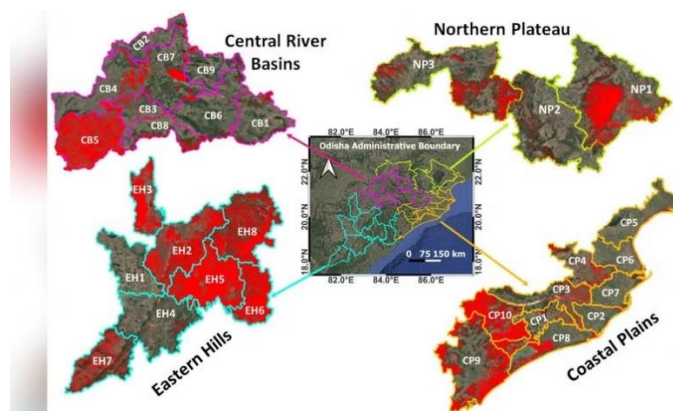
The study recommended district-specific mitigation measures, including expanding urban green spaces, promoting heat-resilient infrastructure, restoring mangroves and riverbank vegetation, protecting forests and integrating high-resolution satellite monitoring into urban planning and environmental management.

These interventions could significantly reduce surface heating, minimise heat-related health risks and strengthen Odisha's resilience to rising temperatures driven by climate change and unsustainable land-use practices.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	The Business Standard		
Date	9 th July 2026	Language	English
Headline	Rising thermal hotspots threaten productivity, public health: IIT study		
Link	https://www.business-standard.com/india-news/iit-study-finds-growing-thermal-hotspots-across-odisha-warns-of-risks-126070900679_1.html		



Researchers warn expanding heat hotspots driven by industrialisation and land-use change could threaten public health, productivity and long-term economic growth without targeted climate adaptation

Growing land-use changes, industrial expansion and rapid urbanisation are creating an alarming network of thermal hotspots across Odisha, posing an emerging threat to public health and the state's long-term economic growth, according to a study by researchers at the Indian Institute of Technology (IIT) Bhubaneswar.

The study warns that unless region-specific climate adaptation measures are integrated into urban planning and industrial development, rising land surface temperatures could significantly increase energy demand, reduce labour productivity, strain healthcare systems and undermine the sustainability of one of India's fastest-growing industrial states.

Unlike conventional studies that examine average temperatures, the IIT researchers identified localised areas consistently experiencing extreme land surface temperatures and tracked how these hotspots evolved between 2017 and 2023.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

The study found that districts witnessing rapid population growth, urbanisation, industrialisation and infrastructure expansion recorded the sharpest increase in thermal hotspots, with built-up urban areas experiencing hotspot growth of as much as 9 per cent annually.

Published in the Environmental Science: Advances journal of the Royal Society of Chemistry, the study by Dikshika Mahapatra and Debadatta Swain analysed two decades of satellite observations and mapped the evolution of thermal hotspots across all 30 districts of Odisha.

"Coastal districts undergoing rapid urban transformation and industrialisation saw hotspot coverage expand between 2 per cent and 9 per cent in just seven years. The results show that built-up areas exhibit significantly higher hotspot intensities than non-built-up regions," said Swain, associate professor at the School of Earth, Ocean and Climate Sciences.

The study identified Khordha, Ganjam, Sundargarh, Sambalpur, Angul, Jharsuguda and Cuttack among the districts where urbanisation and industrial activities are driving significant heat accumulation. Extensive concrete structures, asphalt roads, industrial facilities and shrinking vegetation have altered the land surface, enabling these areas to absorb and retain substantially more solar radiation than natural landscapes.

While urban centres emerged as major heat islands, the researchers found that Odisha's western and interior districts present an equally concerning but different challenge. Districts such as Kalahandi, Nuapada, Bargarh and Balangir recorded large thermal hotspots across non-built-up areas because of increasing barren land, degraded forests, fallow agricultural fields and declining vegetation cover.

One of the study's most striking findings is the emergence of persistent thermal hotspots in districts that remain chronically hotter than surrounding regions year after year. Rayagada recorded the highest persistent hotspot coverage, with 92.09 per cent of its geographical area affected, followed by Gajapati (86.16 per cent), Nayagarh (76.05 per cent), Balangir (75.02 per cent), Nuapada (66.14 per cent), Kandhamal (62.56 per cent) and Kalahandi (60.87 per cent).

"In contrast, coastal districts such as Balasore and Bhadrak reported relatively low persistent hotspot coverage because of the moderating influence of the Bay of Bengal and moisture-rich landscapes," said Mahapatra, a research scholar.

According to the researchers, these persistent hotspots are particularly alarming because they represent structurally stable heat reservoirs that continuously expose communities to extreme temperatures.

"These hotspots represent chronic, structurally unchanging heat reservoirs and could subject local communities to prolonged heat stress," Swain said, adding that degraded forests, exposed rocky terrain, shifting cultivation and lack of vegetation prevent natural evaporative cooling, allowing these landscapes to remain exceptionally hot year after year.

Beyond environmental implications, the study warned of substantial economic consequences if thermal hotspots continue to expand. Higher surface temperatures increase electricity consumption as households, commercial establishments and industries rely more heavily on cooling systems. Previous international studies cited in the paper showed that urban heat islands can increase annual building



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

cooling energy demand by 15-20 per cent, suggesting similar pressures could emerge in rapidly industrialising states such as Odisha.

The researchers also cautioned that rising thermal stress could directly affect labour-intensive sectors that underpin Odisha's economy. Outdoor workers engaged in mining, construction, manufacturing, transport and agriculture are likely to experience reduced productivity, shorter safe working hours and greater health risks during prolonged heat events.

With Odisha positioning itself as a major destination for investments in steel, aluminium, mining, petrochemicals, renewable energy and logistics, unchecked heat stress could increase operational costs and reduce industrial efficiency. The state has received investment proposals worth more than Rs 22 trillion over the past two years, with most projects proposed in these thermal hotspot regions.

The study also highlighted that increasing land surface temperatures worsen air quality by accelerating the formation of ground-level ozone while increasing the risks of heat exhaustion, heatstroke, and cardiovascular and respiratory illnesses. Children, the elderly and people with existing health conditions are expected to face the greatest risks.

Population exposure analysis revealed that Ganjam, Sundargarh, Khordha and Cuttack consistently recorded the highest numbers of people exposed to thermal hotspots because they combine dense populations with expanding urban and industrial infrastructure. Districts such as Rayagada and Nayagarh exhibited persistently high proportions of their populations exposed to extreme heat throughout the study period.

The researchers observed that population exposure to thermal hotspots declined sharply during 2020, attributing the reduction largely to Covid-19 lockdowns that temporarily reduced industrial operations, vehicular traffic and other anthropogenic heat sources. The finding suggests that managing urban activities during peak heat periods could help reduce thermal stress.

The study recommends district-specific mitigation strategies instead of a uniform statewide approach. For rapidly urbanising industrial districts such as Khordha, Jagatsinghpur, Jajpur and Sundargarh, the researchers advocated cool roofs, reflective construction materials, permeable pavements, vertical gardens, expanded urban forests and green corridors to reduce heat absorption.

"Coastal districts should strengthen mangrove conservation to improve natural cooling, while western and southern districts require forest restoration, watershed management and sustainable land-use practices to restore soil moisture and vegetation cover," Mahapatra said.

The researchers added that increasing urban greenery, implementing heat-resilient infrastructure and promoting sustainable land-use policies that balance development with environmental conservation would help reduce surface heating, minimise health risks and support long-term climate resilience.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	The Pioneer		
Date	9 th July 2026	Language	English
Headline	IIT study flags growing thermal hotspots in State		

IIT study flags growing thermal hotspots in State

Research links urbanisation, land degradation to rising surface temperatures

PNS ■ Bhubaneswar

Rapid urbanisation and changing land-use patterns are accelerating the spread of thermal hotspots across Odisha, with both urban centres and interior districts witnessing rising surface temperatures, according to a new study by the Indian Institute of Technology (IIT) Bhubaneswar.

Published in the Royal Society of Chemistry journal *Environmental Science: Advances*, the study analysed two decades of satellite data to assess changes in land surface temperatures across all 30 districts of the State. The research was carried out by Dikshika Mahapatra and Dr Debadatta Swain of IIT Bhubaneswar's School of Earth, Ocean and Climate Sciences.

The findings show that rapidly urbanising and industrialising districts such as Khordha, Ganjam, Cuttack and Sundargarh have recorded a steady rise in extreme surface temperatures, with thermal hotspot coverage increasing by 2 to 9 % annually in several coastal districts.

The study also found that thermal stress is no longer confined to cities. Interior and hilly districts, including Balangir, Kalahandi, Rayagada and Gajapati, are in-



creasingly experiencing persistent heat due to vegetation loss, forest degradation and expanding barren land.

Researchers warned that prolonged exposure to such thermal hotspots could adversely affect public health, increase energy demand and threaten environmental sustainability. They said satellite-based monitoring can help identify vulnerable regions and support evidence-based climate resilience planning.

The study recommended region-specific measures such as expanding urban green cover, developing heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental management.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
Indian Institute of Technology Bhubaneswar

Media/Publication	The Statesman		
Date	9 th July 2026	Language	English
Headline	Thermal hotspots expanding by 2 to 9 percent annually in parts of Odisha		

Thermal hotspots expanding by 2 to 9 percent annually in parts of Odisha

STATESMAN NEWS SERVICE

Bhubaneswar, 8 July:

A new study by researchers from the School of Earth, Ocean and Climate Sciences, Indian Institute of Technology (IIT) Bhubaneswar has revealed a significant rise in land surface thermal hotspots across Odisha, highlighting the growing impact of rapid urbanization and land-use changes on the state's climate.

The research has been published in the prestigious *Environmental Science: Advances*, a journal of the Royal Society of Chemistry.

The study, conducted by Ms. Dikshika Mahapatra and Dr. Debadatta Swain, analysed 20 years of satellite data to understand how thermal

» Need to increase urban green spaces

hotspots have evolved across all 30 districts of Odisha.

The findings show that rapidly growing urban and industrial areas, particularly Khordha, Ganjam, Cuttack, and Sundargarh, are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by 2% to 9% annually in several coastal districts.

Interestingly, the research also found that rising heat is no longer confined to cities. Several interior and hilly districts, including Balangir, Kalahandi, Rayagada, and

Gajapati, are experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land.

The researchers note that prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability.

To address the challenge, the study recommends region-specific solutions, including expanding urban green spaces, adopting heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental management.



Media/Publication	The Orissa Post		
Date	9 th July 2026	Language	English
Headline	Urbanisation, land degradation intensify heat in Odisha: Bhub IIT		

Urbanisation, land degradation intensify heat in Odisha: Bhub IIT



PRESS TRUST OF INDIA

Bhubaneswar, July 8: A recent scientific study by Indian Institute of Technology (IIT)-Bhubaneswar has revealed that rapid urbanisation and fast land degradation were major factors behind the intensifying surface heat across Odisha.

The study by researchers from the institute's School of Earth, Ocean and Climate Sciences has revealed a significant rise in land surface thermal hotspots across Odisha, highlighting the growing impact of rapid urbanisation and land-use changes on the state's climate, an official statement

issued by the institute said.

The IIT-Bhubaneswar stated that the research has been published in the prestigious *Environmental Science: Advances*, a journal of the Royal Society of Chemistry. The study was conducted by Dikshika Mahapatra and Debadatta Swain, and they analysed 20 years of satellite data to understand how thermal hotspots have evolved across all 30 districts of Odisha.

The findings show that rapidly growing urban and industrial areas, particularly Khordha, Ganjam, Kataka, and Sundargarh, are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by

2 per cent to 9 per cent annually in several coastal districts.

The research also found that rising heat is no longer confined to cities. Several interior and hilly districts, including Bolangir, Kalahandi, Rayagada, and Gajapati, are also experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land, the institute said.

The researchers note that prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability. The study demonstrates how satellite-based monitoring can help identify vulnerable regions and support evidence-based planning for climate resilience.

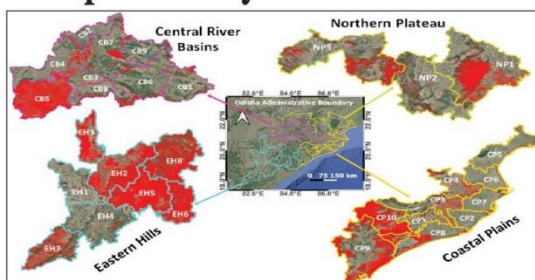
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Media/Publication	The Political & Business Daily		
Date	9 th July 2026	Language	English
Headline	IIT Bhubaneswar receives 'Prakruti Mitra' Award		

IIT Bhubaneswar study says urbanisation, land degradation help intensify heat in Odisha



PBD BUREAU/PTI

BHUBANESWAR, JUL 8

A recent scientific study by IIT Bhubaneswar has revealed that rapid urbanisation and fast land degradation were major factors behind the intensifying surface heat across Odisha.

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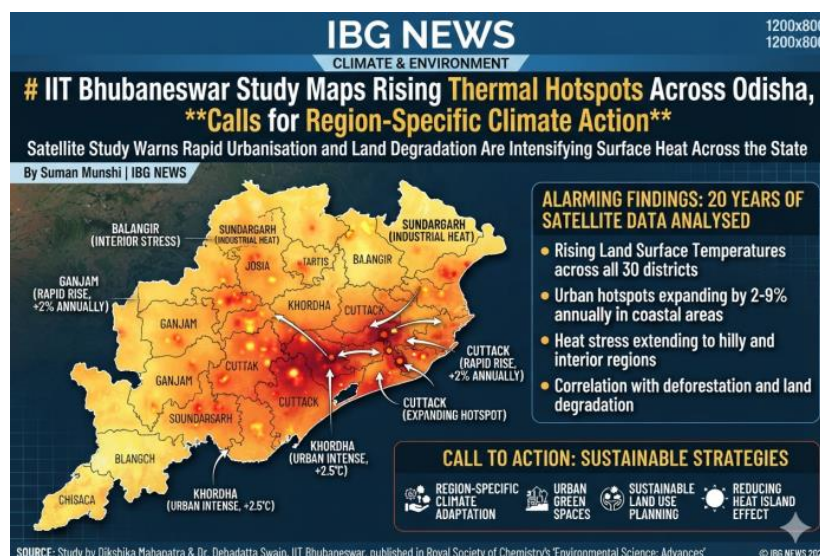
and Sundargarh, are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by 2 per cent to 9 per cent annually in several coastal districts.

The research also found that rising heat is no longer confined to cities. Several interior and hilly districts, including Balangir, Kalahandi, Rayagada, and Gajapati, are also experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land, the institute said.

The researchers note that prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability. The study demonstrates how satellite-based monitoring can help identify vulnerable regions and support evidence-based planning for climate resilience.

To address the challenge, the study recommends region-specific solutions, including expanding urban green spaces

Media/Publication	IBGNews.com		
Date	9 th July 2026	Language	English
Headline	IIT Bhubaneswar Study Maps Rising Thermal Hotspots Across Odisha, Calls for Region-Specific Climate Action		
Link	https://ibgnews.com/2026/07/09/iit-bhubaneswar-study-maps-rising-thermal-hotspots-across-odisha-calls-for-region-specific-climate-action/		



Satellite Study Warns Rapid Urbanisation and Land Degradation Are Intensifying Surface Heat Across the State

By Suman Munshi | IBG NEWS

Bhubaneswar, July 8, 2026: A groundbreaking study by researchers from the School of Earth, Ocean and Climate Sciences at the Indian Institute of Technology (IIT) Bhubaneswar has revealed a significant rise in persistent land surface thermal hotspots across Odisha, highlighting the growing impact of rapid urbanisation, industrial expansion and land-use changes on the state's climate.

The research, published in the prestigious **Royal Society of Chemistry journal, *Environmental Science: Advances***, presents one of the most comprehensive satellite-based assessments of Odisha's thermal landscape over the past two decades. The findings raise concerns about increasing heat stress, ecological degradation and the need for urgent, region-specific climate adaptation strategies.

Two Decades of Satellite Data Reveal Alarming Heat Trends



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The study, conducted by **Dikshika Mahapatra** and **Dr. Debadatta Swain**, analysed nearly **20 years of satellite observations** to map the evolution of land surface thermal hotspots across all **30 districts of Odisha**.

The researchers found that rapidly urbanising and industrialising districts—including **Khordha, Ganjam, Cuttack and Sundargarh**—have experienced a continuous rise in land surface temperatures. In several coastal districts, the geographical extent of persistent thermal hotspots has expanded by **2% to 9% annually**, reflecting the accelerating impact of urban development and changing land-use patterns.

Heat Stress No Longer Limited to Cities

One of the study's most significant findings is that rising temperatures are no longer confined to urban centres.

Several interior and hilly districts, including **Balangir, Kalahandi, Rayagada and Gajapati**, are also experiencing increasing thermal stress. Researchers attribute this trend primarily to **forest degradation, declining vegetation cover and the expansion of barren land**, which reduce the natural cooling effect of ecosystems.

This indicates that climate-related heat risks are becoming a statewide challenge, affecting both urban and rural communities.

Public Health and Environmental Risks Increasing

According to the researchers, prolonged exposure to thermal hotspots could have far-reaching consequences for:

- Public health through increased heat-related illnesses.
- Rising electricity demand due to greater cooling requirements.
- Agricultural productivity.
- Water resource management.
- Biodiversity and ecosystem stability.
- Long-term environmental sustainability.

The study demonstrates how **satellite-based thermal monitoring** can help governments identify vulnerable regions and support evidence-based planning for climate resilience.

Recommended Climate Solutions

To reduce future heat risks, the researchers recommend several region-specific mitigation strategies, including:

- Expanding urban green spaces and tree cover.
- Developing heat-resilient infrastructure.
- Restoring mangrove ecosystems and riverbank vegetation.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

- Protecting forests and preventing further land degradation.
- Integrating high-resolution satellite data into urban planning and environmental management.
- Implementing district-level climate adaptation policies tailored to local geographical conditions.

The study suggests that these measures could significantly reduce surface temperatures while strengthening Odisha's resilience against climate change.

Scientific Significance

The publication represents an important contribution to India's climate research efforts and highlights IIT Bhubaneswar's growing role in developing scientific solutions to environmental challenges.

By combining advanced satellite remote sensing with long-term climate analysis, the research provides policymakers, urban planners and environmental agencies with valuable tools for monitoring heat extremes and designing sustainable development strategies.

A Warning for India's Rapidly Growing Cities

Climate experts believe the findings extend beyond Odisha. As Indian cities continue to expand rapidly, unchecked urbanisation, shrinking green cover and changing land-use patterns could intensify heat island effects across many parts of the country.

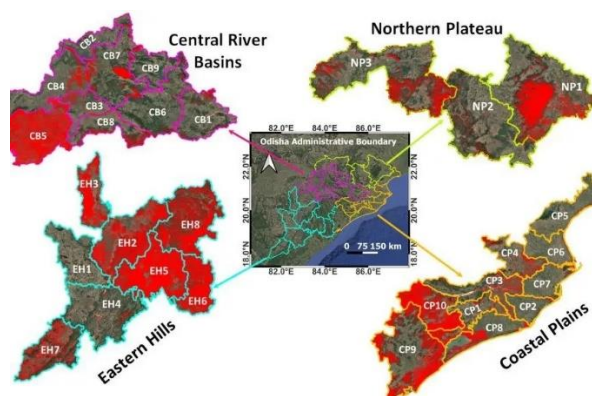
The study reinforces the need for balancing economic growth with ecological conservation, ensuring that future urban development incorporates climate-resilient infrastructure and nature-based solutions.

With global temperatures continuing to rise, the IIT Bhubaneswar research serves as a timely reminder that scientific data and satellite technology will play a crucial role in protecting communities from the growing impacts of climate change.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	Odishabytes.com		
Date	9 th July 2026	Language	English
Headline	IIT Bhubaneswar Study Identifies Odisha's Rising Thermal Hotspots, Recommends Region-Specific Action		
Link	https://odishabytes.com/iit-bhubaneswar-study-identifies-odishas-rising-thermal-hotspots-recommends-region-specific-action/		



Bhubaneswar: A recent study by researchers from the School of Earth, Ocean and Climate [Sciences](#), Indian Institute of Technology (IIT) Bhubaneswar, found a significant rise in land surface thermal hotspots across Odisha, highlighting the growing impact of rapid urbanisation and land-use changes on the state's climate.

The research, conducted by Dikshika Mahapatra and Dr Debadatta Swain, has been published in the prestigious *Environmental Science: Advances*, a journal of the Royal Society of Chemistry.

The study analysed 20 years of satellite data to understand how thermal hotspots have evolved across Odisha's 30 districts. As per the findings, rapidly-growing urban and industrial areas — particularly Khordha, Ganjam, Kataka and Sundargarh — are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by 2% to 9% annually in several coastal districts.

The research also found that rising heat is no longer confined to cities. A number of interior and hilly districts, including Balangir, Kalahandi, Rayagada and Gajapati, are experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land.

Prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability, the researchers observed.

The study has recommended region-specific solutions, including expanding urban green spaces, adopting heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental management.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	OmmCommNews.com		
Date	8 th July 2026	Language	Englis
Headline	Rapid Urbanisation And Land Degradation Driving Surge In Odisha's Surface Heat: IIT Bhubaneswar Study		
Link	https://ommcomnews.com/odisha-news/rapid-urbanisation-and-land-degradation-driving-surge-in-odishas-surface-heat-iit-bhubaneswar-study/		

Bhubaneswar: A recent study by IIT Bhubaneswar has found that rapid urbanisation and widespread land degradation are the primary drivers behind the rising surface temperatures across Odisha.

Researchers from the institute's School of Earth, Ocean and Climate Sciences analysed two decades of satellite data covering all 30 districts of the state. Their findings reveal a marked increase in land surface thermal hotspots, signalling the growing influence of land-use changes on the state's climate.

The study, published in the prestigious journal Environmental Science Advances (Royal Society of Chemistry), was led by Dikshika Mahapatra and Debadatta Swain.

According to the research, urban and industrial hubs — particularly Khordha, Ganjam, Cuttack, and Sundargarh — are experiencing a steady rise in extreme surface temperatures. Several coastal districts have seen thermal hotspot coverage expand by 2 to 9 per cent annually.

The heat is no longer limited to cities. Several interior and hilly districts, including Balangir, Kalahandi, Rayagada, and Gajapati, are also showing persistent thermal stress due to large-scale vegetation loss, forest degradation, and expanding barren lands.

The researchers warn that prolonged exposure to these intensifying thermal hotspots could have serious consequences for public health, increase energy demand, and threaten environmental sustainability.

The study highlights the value of satellite-based monitoring in identifying vulnerable areas and supporting targeted climate action.

To combat the rising heat, it recommends region-specific measures such as expanding urban green cover, implementing heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental governance.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
Indian Institute of Technology Bhubaneswar

Media/Publication	Dailiyhunt.com		
Date	10 th July 2026	Language	English
Headline	Rapid urbanisation driving rising heat across Odisha: IIT Bhubaneswar study		
Link	https://m.dailyhunt.in/news/india/english/orissa+post-epaper-orisapos/rapid+urbanisation+driving+rising+heat+across+odisha+iit+bhubaneswar+study-newsid-n718891447		

Bhubaneswar: A recent scientific study by IIT Bhubaneswar has revealed that rapid urbanisation and fast land degradation were major factors behind the intensifying surface heat across Odisha.

The study by researchers from the School of Earth, Ocean and Climate Sciences, Indian Institute of Technology (IIT) Bhubaneswar, has revealed a significant rise in land surface thermal hotspots across Odisha, highlighting the growing impact of rapid urbanisation and land-use changes on the state's climate, an official statement issued by the institute said.

The IIT Bhubaneswar stated that the research has been published in the prestigious Environmental Science Advances, a journal of the Royal Society of Chemistry. The study was conducted by Dikshika Mahapatra and Debadatta Swain, and they analysed 20 years of satellite data to understand how thermal hotspots have evolved across all 30 districts of Odisha.

The findings show that rapidly growing urban and industrial areas, particularly Khordha, Ganjam, Cuttack, and Sundargarh, are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by 2 per cent to 9 per cent annually in several coastal districts.

The research also found that rising heat is no longer confined to cities. Several interior and hilly districts, including Balangir, Kalahandi, Rayagada, and Gajapati, are also experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land, the institute said.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
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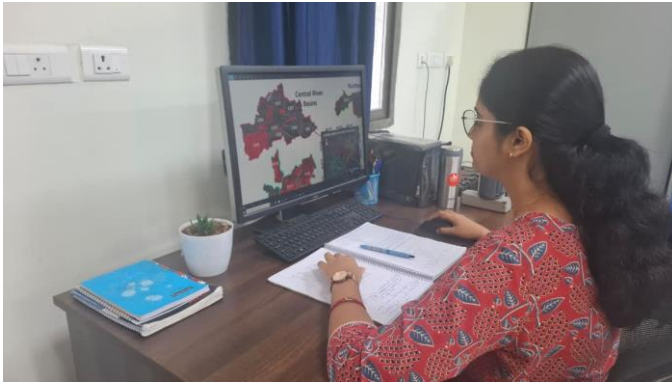
The researchers note that prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability. The study demonstrates how satellite-based monitoring can help identify vulnerable regions and support evidence-based planning for climate resilience.

To address the challenge, the study recommends region-specific solutions, including expanding urban green spaces, adopting heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental management.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	ETVBharat.com		
Date	9 th July 2026	Language	English
Headline	20 years of research reveals alarming data; Surface temperature is increasing in Odisha, several districts are under heat stress		
Link	https://www.etvbharat.com/or/state/surface-temperature-rising-in-odisha-several-districts-under-heat-stress-new-study-of-iit-bbsr-ors26070902899		



ଭୁବନେଶ୍ୱର: ଓଡ଼ିଶାରେ ଜଳବାୟୁ ପରିବର୍ତ୍ତନର ପ୍ରଭାବ ଦିନକୁ ଦିନ ସ୍ପଷ୍ଟ ହେଉଥିବା ବେଳେ ରାଜ୍ୟର ବହୁଥିବା ତାପଜ ହଟସ୍ପଟ୍ ଏବେ ଚିନ୍ତାର ବିଷୟ ପାଲଟିଛି। ଭାରତୀୟ ପ୍ରଯୁକ୍ତି ପ୍ରତିଷ୍ଠାନ (ଆଇଆଇଟି) ଭୁବନେଶ୍ୱରର ପୃଥିବୀ, ମହାସାଗର ଓ ଜଳବାୟୁ ବିଜ୍ଞାନ ସ୍କୁଲର ଗବେଷକଙ୍କ ପକ୍ଷରୁ ଏକ ନୂତନ ଅଧ୍ୟୟନ କରାଯାଇଥିଲା । ଏହି ଅଧ୍ୟୟନରୁ ରାଜ୍ୟର ବିଭିନ୍ନ ଅଞ୍ଚଳରେ ଭୂପୃଷ୍ଠ ତାପମାତ୍ରା ଲଗାତାର ବଢୁଥିବା ତଥ୍ୟ ସାମ୍ନାକୁ ଆସିଛି। ଏହି ଗବେଷଣା ରୟାଲ ସୋସାଇଟି ଅଫ୍ କେମେଷ୍ଟ୍ରିର ପ୍ରତିଷ୍ଠିତ ଜର୍ଣ୍ଣାଲ Environmental

Science: Advancesରେ ପ୍ରକାଶ ପାଇଛି।

ଗବେଷକ ସୁଶ୍ରୀ ଦୀକ୍ଷିକା ମହାପାତ୍ର ଓ ଡ଼. ଦେବଦତ୍ତ ସ୍ୱାଇଁ ୨୦ ବର୍ଷର ଉପଗ୍ରହ ତଥ୍ୟ ବିଶ୍ଳେଷଣ କରି ଓଡ଼ିଶାର ସମସ୍ତ ୩୦ଟି ଜିଲ୍ଲାର ତାପଜ ପରିସ୍ଥିତିର ଅଧ୍ୟୟନ କରିଛନ୍ତି। ଅଧ୍ୟୟନରେ ଜଣାପଡ଼ିଛି ଯେ ଖୋର୍ଦ୍ଧା, କଟକ, ଗଞ୍ଜାମ ଓ ସୁନ୍ଦରଗଡ଼ ଭଳି ଦ୍ରୁତ ସହରୀକରଣ ଓ ଶିଳ୍ପାୟନ ହେଉଥିବା ଜିଲ୍ଲାରେ ଭୂପୃଷ୍ଠ ତାପମାତ୍ରା ଲଗାତାର ବଢୁଛି । ଉପକୂଳବର୍ତ୍ତୀ ଅଞ୍ଚଳରେ ତାପଜ ହଟସ୍ପଟ୍ କଭରେଜ୍ ପ୍ରତିବର୍ଷ ୨ରୁ ୯ ପ୍ରତିଶତ ପର୍ଯ୍ୟନ୍ତ ବୃଦ୍ଧି ପାଇଛି।

ତାପ ଚାପରେ ଏହି ସବୁ ଜିଲ୍ଲା

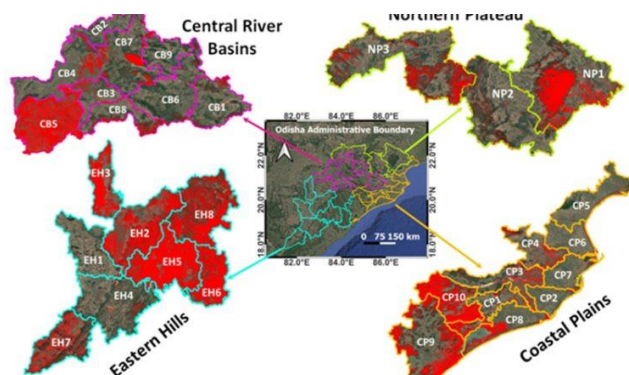
କେବଳ ସହର ନୁହେଁ, ବଲାଙ୍ଗୀର, କଳାହାଣ୍ଡି, ରାୟଗଡ଼ା ଓ ଗଜପତି ଭଳି ପାହାଡ଼ିଆ ଓ ଆଭ୍ୟନ୍ତରୀଣ ଜିଲ୍ଲାମାନେ ମଧ୍ୟ ତାପ ଚାପରେ ରହିଛନ୍ତି। ବନାଞ୍ଚଳ ହ୍ରାସ, ଉଦ୍ଭିଦ ନଷ୍ଟ ଏବଂ ଅନୁର୍ବର ଜମିର ପରିମାଣ ବଢ଼ିବା ଏହାର ପ୍ରମୁଖ କାରଣ ବୋଲି ଗବେଷକମାନେ କହିଛନ୍ତି। ଏଭଳି ତାପଜ ହଟସ୍ପଟ୍ ଜନସ୍ୱାସ୍ଥ୍ୟ, ବିଦ୍ୟୁତ୍ ଚାହିଦା ଓ ପରିବେଶ ଉପରେ ଦୀର୍ଘମିଆଦି ପ୍ରଭାବ ପକାଇପାରେ। ଏହାର ମୁକାବିଲା ପାଇଁ ସହରରେ ସବୁଜ ଅଞ୍ଚଳ ବୃଦ୍ଧି, ତାପ-ପ୍ରତିରୋଧୀ ଭିଡିଓମି, ମାଟ୍ରେକ୍ସ ଓ ନଦୀକୂଳ ବନୀକରଣ କରାଯିବା ଏବଂ ଉଚ୍ଚ-ରିଫ୍ଲେକ୍ଟିଭିଟି ଉପଗ୍ରହ ତଥ୍ୟକୁ ସହର ଯୋଜନାରେ ସାମିଲ କରିବାକୁ ଗବେଷଣାରେ ପରାମର୍ଶ ଦିଆଯାଇଛି। ଏହି ଅଧ୍ୟୟନ ଓଡ଼ିଶାରେ ଜଳବାୟୁ ସ୍ଥିରତା ପାଇଁ ବିଜ୍ଞାନଭିତ୍ତିକ ଓ ଅଞ୍ଚଳ-ନିର୍ଦ୍ଦିଷ୍ଟ ପଦକ୍ଷେପର ଆବଶ୍ୟକତାକୁ ଆହୁରି ସ୍ପଷ୍ଟ କରିଛି।

ସୂଚନା ଅନୁଯାୟୀ, ଦିନକୁ ଦିନ ରାଜ୍ୟ ତଥା ଦେଶରେ ତାପମାତ୍ରାରେ ପରିବର୍ତ୍ତନ ଘଟିଛି । କେତେବେଳେ ଅତ୍ୟଧିକ ଖରା ହେଉଛି ତ ଆଉ କେତେବେଳେ ଅତ୍ୟଧିକ ବର୍ଷା ହେଉଛି । ଯାହାକୁ ନେଇ ପରିବେଶବିଦଙ୍କ ଚିନ୍ତା ବଢ଼ି ଯାଇଛି ।



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	Kalingavoice.com		
Date	8 th July 2026	Language	English
Headline	IIT Bhubaneswar Study Maps Odisha's Rising Thermal Hotspots, Calls for Region-Specific Climate Action		
Link	https://kalingavoice.com/odisha/iit-bhubaneswar-study-maps-odishas-rising-thermal-hotspots-calls-for-region-specific-climate-action/		



Bhubaneswar, 8th July 2026: A new study by researchers from the School of Earth, Ocean and Climate Sciences, Indian Institute of Technology (IIT) Bhubaneswar has revealed a significant rise in land surface thermal hotspots across Odisha, highlighting the growing impact of rapid urbanization and land-use changes on the state's climate. The research has been published in the prestigious *Environmental Science: Advances*, a

journal of the Royal Society of Chemistry.

The study, conducted by Ms. Dikshika Mahapatra and Dr. Debadatta Swain, analysed 20 years of satellite data to understand how thermal hotspots have evolved across all 30 districts of Odisha. The findings show that rapidly growing urban and industrial areas, particularly Khordha, Ganjam, Cuttack, and Sundargarh, are witnessing a steady increase in extreme surface temperatures, with thermal hotspot coverage expanding by 2% to 9% annually in several coastal districts.

Interestingly, the research also found that rising heat is no longer confined to cities. Several interior and hilly districts, including Balangir, Kalahandi, Rayagada, and Gajapati, are experiencing persistent thermal stress due to vegetation loss, forest degradation, and increasing stretches of barren land.

The researchers note that prolonged exposure to such thermal hotspots can have serious implications for public health, energy demand, and environmental sustainability. The study demonstrates how satellite-based monitoring can help identify vulnerable regions and support evidence-based planning for climate resilience.

To address the challenge, the study recommends region-specific solutions, including expanding urban green spaces, adopting heat-resilient infrastructure, restoring mangroves and riverbank vegetation, and integrating high-resolution satellite data into urban planning and environmental management.

This publication reflects IIT Bhubaneswar's continued commitment to research that addresses pressing environmental challenges and contributes to sustainable development through science and technology.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	The Sambad		
Date	13 th July 2026	Language	Odia
Headline	IIT Bhubaneswar Study analyses 20 years satellite data: Highlights impact of rapid industrialization and land-use		



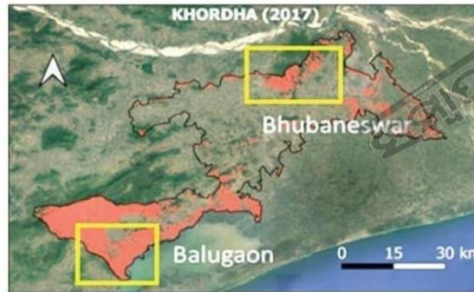
ବଦଳୁଛି ଭୁବନେଶ୍ୱର ସ୍ଥିତି

୨୦ ବର୍ଷର ସାଟେଲାଇଟ୍ ତଥ୍ୟ ବିଶ୍ଳେଷଣ

ଆଇଆଇଆଇଟି ଭୁବନେଶ୍ୱରର ଗବେଷଣା

ଦ୍ରୁତ ସହରୀକରଣ, ଜମି ଥିବକ୍ଷୟ ପ୍ରଭାବ ପଡୁଛି

ଭୁବନେଶ୍ୱର, ୧୨/୭ (ଭମିପା): ଓଡ଼ିଶାର ଭୁବନେଶ୍ୱର ଚାରି ଡିଗ୍ରୀରୁ ଉପର ଦୃଢ଼ି ପାରିଛି। ଦ୍ରୁତ ସହରୀକରଣ ଓ ଜମି ବ୍ୟବହାର ପରିବର୍ତ୍ତନ ଯୋଗୁଁ ଜଳବାୟୁ ଉପରେ ପଡୁଥିବା ପ୍ରଭାବର ପ୍ରତିପାଳନ ଦ୍ୱାରା ଏଭଳି ସମସ୍ୟା ଦେଖାଦେଉଛି। ଏପରିକି ଉପକୂଳବର୍ତ୍ତୀ ଜିଲ୍ଲାଗୁଡ଼ିକ ଏବେ ହବ୍‌ସ୍‌ପଟ୍ ପାଲଟିଛି। ଭାରତୀୟ ପ୍ରମୁଖ ପ୍ରତିଷ୍ଠାନ (ଆଇଆଇଆଇଟି)ର ଭୁବନେଶ୍ୱରର ଯାଏଁ, ଓଡ଼ିଶା ଓ କୁଳୁମ୍‌ନେଟ୍‌ର ଯାଉଛନ୍ତି ଯୁକ୍ତ ଗବେଷକଙ୍କ ଦ୍ୱାରା ହୋଇଥିବା ଅଧ୍ୟୟନରୁ ଏଭଳି ତଥ୍ୟ ସାମନାକୁ ଆସିଛି। ରୟାଲ ସୋସାଇଟି ଅଫ୍ କେମ୍ବ୍ରିଜର ଜର୍ଣ୍ଣାଲ 'ଏନଭାଇରୋନେଣ୍ଟଲ୍ ପ୍ରୋସେସ୍'ରେ ପ୍ରକାଶ ପାଇଥିବା ଏହି ଅଧ୍ୟୟନରେ ଓଡ଼ିଶାର ସମସ୍ତ ୩୦ଟି ଜିଲ୍ଲାରେ କିଲୋ ଗ୍ରାସ୍ ପ୍ରବାହ ହବ୍‌ସ୍‌ପଟ୍ ପାଲଟିଛି ତାହା ଅନୁଧ୍ୟାନ ପାଇଁ ୨୦ ବର୍ଷର ସାଟେଲାଇଟ୍ ତଥ୍ୟ ବିଶ୍ଳେଷଣ କରାଯାଇଛି। ଦାସାକା ମହାପାତ୍ର ଓ ଦେବଦତ୍ତ ମୁରାଲୀ ଦ୍ୱାରା କରାଯାଇଥିବା ଗବେଷଣାର ନିଷ୍ପତ୍ତିଗୁଡ଼ିକ ଦର୍ଶାଉଛି ଯେ ଦ୍ରୁତ ଗତିରେ ବହୁଥିବା ସହରୀକରଣ, ଶିଳ୍ପାଳୟ ଯଥା



ଖୋର୍ଦ୍ଧା, ଗଞ୍ଜାମ, କଟକ ଓ ସୁନ୍ଦରଗଡ଼ରେ ତାପମାତ୍ରାରେ ନିୟମିତ ଭାବେ ବୃଦ୍ଧି ଘଟୁଛି। ଅଧିକାଂଶ ଉପକୂଳବର୍ତ୍ତୀ ଜିଲ୍ଲାଗୁଡ଼ିକରେ ତାପମାତ୍ରା ବୃଦ୍ଧି ୨%ରୁ ୯% ବୃଦ୍ଧି ପାରିଛି। ରାଜ୍ୟ ରାଜଧାନୀ ଭୁବନେଶ୍ୱର ସହର ଥିବା ଖୋର୍ଦ୍ଧା ଜିଲ୍ଲାର ଜନସଂଖ୍ୟା ଘନତା ସବୁଠାରୁ ଅଧିକ ରହିଛି। ଜିଲ୍ଲାର ପ୍ରତି ବର୍ଗ କିଲୋମିଟରରେ ୮୦୦ରୁ ଅଧିକ ବ୍ୟବସାୟ କରୁଛନ୍ତି। ଗତ ୨୦ ବର୍ଷ ମଧ୍ୟରେ ଭୁବନେଶ୍ୱରରେ

ଜନସଂଖ୍ୟା ଆଶାଚୀତ ଭାବେ ବୃଦ୍ଧି ହୋଇଛି। ସହରୀକରଣର ବଡ଼ ପ୍ରଭାବ ଏହି ସମୟ ଉପରେ ପଡ଼ିଛି, ଯାହାକି ଭୁବନେଶ୍ୱର ତାପମାତ୍ରା ବୃଦ୍ଧିର ଅନ୍ୟତମ କାରଣ ପାଲଟିଛି। ଗତ ୨୦ ବର୍ଷ ମଧ୍ୟରେ ଖୋର୍ଦ୍ଧା ଜିଲ୍ଲାର ଭୁବନେଶ୍ୱର ଚାରି ଦୃଢ଼ି ପାରିଥିବା ଧାରା କାରି ରହିଛି। ସେତେବେଳେ ସାମାନ୍ୟ ତାପମାତ୍ରା ବର୍ଷମାନ ବୃଦ୍ଧି ପାରିଛି, ତେଣୁ ଅଧିକାଂଶ ଅଞ୍ଚଳରେ ନିରନ୍ତର ତାପମାତ୍ରା ବୃଦ୍ଧି ପାଇବା ସ୍ୱାଭାବିକ। ସେହି ସବୁ ସ୍ଥାନରେ ଉଦ୍ଭିଦ ଅଞ୍ଚଳ ଓ ପତ୍ରତ ଜମି ନଷ୍ଟ ହେଉଛି ସେଠାରେ ତାପମାତ୍ରା ନିୟମିତ ଭାବେ ବୃଦ୍ଧି ପାରିଛି। ସହରର ଉତ୍ତର ଓ ପୂର୍ବ ଦିଗରେ ଥିବା ବାଷ୍ପ ଜମି ଉପରେ ବିଶାଳ କୋଠା ନିର୍ମାଣ ହେବା ତାପମାତ୍ରା ବୃଦ୍ଧିର ଅନ୍ୟତମ କାରଣ ପାଲଟିଛି ବୋଲି ବିଶ୍ଳେଷଣମାନେ କହିଛନ୍ତି। ଗବେଷଣାରୁ ଜଣାପଡ଼ିଛି ଯେ ବୃଦ୍ଧି ପାରିଥିବା ତାପମାତ୍ରା ଆଉ କେବଳ ସହରଗୁଡ଼ିକରେ ସୀମିତ ହୋଇ ରହିନାହିଁ। ବଲାଙ୍ଗୀର, କଳାହାଣ୍ଡି, ରାୟଗଡ଼ା, ଗଜପତି ସମେତ ଅନେକ ଆନ୍ଧ୍ରପ୍ରଦେଶ ଓ ପାହାଡ଼ିଆ ଜିଲ୍ଲାରେ ମଧ୍ୟ ତାପମାତ୍ରା ବୃଦ୍ଧି ପାହାଡ଼ିଆ ଅଞ୍ଚଳରେ ଉଦ୍ଭିଦ

ହ୍ରାସ, ଜଙ୍ଗଲ କ୍ଷୟ ଯୋଗୁଁ ନିରନ୍ତର ଉତ୍ତାପ ବଢୁଛି। ଗବେଷକମାନେ ଆହୁରି ଉଲ୍ଲେଖ କରିଛନ୍ତି ଯେ ଏଭଳି ତାପ ବାର୍ଷିକ ସମୟ ଧରି କାରି ରହିବା ଦ୍ୱାରା ସ୍ୱାସ୍ଥ୍ୟ, ଶକ୍ତି ବାହାରି ଓ ପରିବେଶଗତ ପ୍ରାୟଶ୍ଚିତ ଉପରେ ଗମ୍ଭୀର ପ୍ରଭାବ ପଡ଼ିପାରେ। ଉପଗ୍ରହ-ଆଧାରିତ ନିରୀକ୍ଷଣ କିପରି ଦୂର୍ବଳ ଅଞ୍ଚଳଗୁଡ଼ିକୁ ଚିହ୍ନଟ କରିବାରେ ସାହାଯ୍ୟ କରିପାରିବ ସେନେଇ ଅଧ୍ୟୟନରେ ଦର୍ଶାଯାଇଛି। ଏହି ଆହ୍ୱାନର ମୁକାବିଲା ପାଇଁ ସହରାଞ୍ଚଳରେ ବ୍ୟାପକ ସବୁଜବାନୀୟ ସୃଷ୍ଟି, ତାପ-ପ୍ରତିରୋଧୀ ଭିଡିଓଗ୍ରାଫି ଗ୍ରହଣ, ହେଡ୍‌ଲ୍ୟାଣ୍ଡ ବନ ଓ ନଦୀକୂଳ ଉଦ୍ଭିଦ ପୁନରୁଦ୍ଧାର, ସହରାଞ୍ଚଳ ଯୋଜନା ଏବଂ ପରିବେଶ ପରିଚାଳନାରେ ଉଚ୍ଚ-ରିଜୋଲ୍ୟୁସନ୍ ସାଟେଲାଇଟ୍ ତଥ୍ୟକୁ ଏକାକୃତ କରିବାର ଆବଶ୍ୟକତା ରହିଛି ବୋଲି ରିପୋର୍ଟରେ ଦର୍ଶାଯାଇଛି।



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

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ଓଡ଼ିଶାରେ ପୃଷ୍ଠ ଉତ୍ତାପକୁ ତୀବ୍ର କରୁଛି ଦ୍ରୁତ ସହରୀକରଣ ଓ ଭୂମି ଅବକ୍ଷୟ

ଭୁବନେଶ୍ୱର, ୮୭ (ନି.ପ୍ର): ଭାରତୀୟ ପ୍ରଯୁକ୍ତି ପ୍ରତିଷ୍ଠାନ (ଆଇଆଇଟି) ଭୁବନେଶ୍ୱରର ପୃଥ୍ୱୀ, ମହାସାଗର ଏବଂ ଜଳବାୟୁ ବିଜ୍ଞାନ ଭୁଇଁର ଗବେଷକମାନଙ୍କ ଦ୍ୱାରା କରାଯାଇଥିବା ଏକ ନୂତନ ଅଧ୍ୟୟନରୁ ଜଣାପଡ଼ିଛି ଯେ ସମଗ୍ର ଓଡ଼ିଶାରେ ଭୂମିପୃଷ୍ଠ ତାପଜ ହଟ୍‌ସ୍ପଟ୍‌ରେ ଉଲ୍ଲେଖନୀୟ ବୃଦ୍ଧି ଘଟିଛି, ଯାହା ରାଜ୍ୟର ଜଳବାୟୁ ଉପରେ ଦ୍ରୁତ ସହରୀକରଣ ଏବଂ ଭୂମି-ବ୍ୟବହାର ପରିବର୍ତ୍ତନର ବହୁଥିବା ପ୍ରଭାବକୁ ଉଲ୍ଲେଖ କରିଛି। ଏହି ଗବେଷଣା ରୟାଲ ସୋସାଇଟି ଅଫ୍ କେମେଣ୍ଡ୍ରର ଏକ ପ୍ରତିଷ୍ଠିତ ଜର୍ଣ୍ଣାଲ, ଏନଭାଇରମେଣ୍ଟାଲ୍ ସାଇନ୍ସ: ଆଡ୍‌ଭାନ୍ସରେ ପ୍ରକାଶିତ ହୋଇଛି।

ଦୀକ୍ଷାକା ମହାପାତ୍ର ଏବଂ ତତ୍ତ୍ୱର ଦେବଦତ୍ତ ସ୍ୱାଇଁଙ୍କ ଦ୍ୱାରା କରାଯାଇଥିବା ଏହି ଅଧ୍ୟୟନରେ ଓଡ଼ିଶାର ସମସ୍ତ ୩୦ଟି ଜିଲ୍ଲାରେ କିପରି ତାପଜ ହଟ୍‌ସ୍ପଟ୍ ବିକଶିତ ହୋଇଛି, ତାହା ବୁଝିବା ପାଇଁ ୨୦ ବର୍ଷର ସାଟେଲାଇଟ୍ ତଥ୍ୟ ବିଶ୍ଳେଷଣ କରାଯାଇଛି। ନିଷ୍ପତ୍ତିଗୁଡ଼ିକ ଦର୍ଶାଉଛି ଯେ ଦ୍ରୁତ ଗତିରେ ବହୁଥିବା ସହରୀକରଣ ଏବଂ

ଶିଳ୍ପ ଅଞ୍ଚଳ, ବିଶେଷକରି ଖୋର୍ଦ୍ଧା, ଗଞ୍ଜାମ, କଟକ ଏବଂ ସୁନ୍ଦରଗଡ଼ରେ ପୃଷ୍ଠ ତାପମାତ୍ରାରେ ନିରନ୍ତର ବୃଦ୍ଧି ଘଟୁଛି। ଅନେକ ଉପକୂଳବର୍ତ୍ତୀ ଜିଲ୍ଲାଗୁଡ଼ିକରେ ତାପଜ ହଟ୍‌ସ୍ପଟ୍ କକରେକ୍ ବାର୍ଷିକ ୨% ରୁ ୯% ବୃଦ୍ଧି ପାଇଛି। ଆଶ୍ଚର୍ଯ୍ୟଜନକ କଥା



ହେଉଛି, ଗବେଷଣାରୁ ଏହା ମଧ୍ୟ ଜଣାପଡ଼ିଛି ଯେ ବୃଦ୍ଧି ପାଇଥିବା ତାପ ଆଉ କେବଳ ସହରଗୁଡ଼ିକରେ ସୀମିତ ନୁହେଁ। ବଲାଙ୍ଗୀର, କଳାହାଣ୍ଡି, ରାୟଗଡ଼ା ଏବଂ ଗଜପତି ସମେତ ଅନେକ ଆଖ୍ୟାତରୀଣ ଏବଂ ପାହାଡ଼ିଆ ଜିଲ୍ଲା ଉଦ୍ଭିଦ ହ୍ରାସ, ଜଙ୍ଗଲ କ୍ଷୟ ଏବଂ କୁମାରତ

ଭାବରେ ଅନୁର୍ବର ଜମି ଯୋଗୁଁ ନିରନ୍ତର ଉତ୍ତାପର ତାପ ଅନୁଭବ କରୁଛନ୍ତି।

ଗବେଷକମାନେ ଉଲ୍ଲେଖ କରିଛନ୍ତି ଯେ ଏପରି ଅର୍ମାକ୍ ହଟ୍‌ସ୍ପଟ୍‌ରେ ଦୀର୍ଘ ସମୟ ଧରି ରହିବା ଦ୍ୱାରା ଜନସ୍ୱାସ୍ଥ୍ୟ, ଶକ୍ତି ଚାହିଦା ଏବଂ

ପରିବେଶଗତ ସ୍ଥାୟୀ ଉପରେ ଗମ୍ଭୀର ପ୍ରଭାବ ପଡ଼ିପାରେ। ଏହି ଅଧ୍ୟୟନ ଦର୍ଶାଉଛି ଯେ ଉପଗ୍ରହ-ଆଧାରିତ ନିରୀକ୍ଷଣ କିପରି ଦୂର୍ବଳ ଅଞ୍ଚଳଗୁଡ଼ିକୁ ଚିହ୍ନଟ କରିବାରେ ସାହାଯ୍ୟ କରିପାରିବ ଏବଂ ଜଳବାୟୁ ସ୍ଥିରତା ପାଇଁ ପ୍ରମାଣ-ଆଧାରିତ ଯୋଜନାକୁ ସମର୍ଥନ କରିପାରିବ। ଏହି ଆହ୍ୱାନର ମୁକାବିଲା ପାଇଁ ଅଧ୍ୟୟନଟି ଅଞ୍ଚଳ-ନିର୍ଦ୍ଦିଷ୍ଟ ସମାଧାନ ସୁପାରିଶ କରେ, ଯେଉଁଥିରେ ସହରୀକରଣ ସହଜ ସ୍ଥାନର ବିସ୍ତାର, ତାପ-ପ୍ରତିରୋଧୀ ଭିଡିଓ ମିଶ୍ରଣ, ମାଟ୍ଟୋକ୍ ଏବଂ ନଦୀକୂଳ ଉଦ୍ଭିଦ ପୁନରୁଦ୍ଧାର ଏବଂ ସହରୀକରଣ ଯୋଜନା ଏବଂ ପରିବେଶ ପରିଚାଳନାରେ ଉଚ୍ଚ-ରିଜୋଲ୍ୟୁସନ୍ ସାଟେଲାଇଟ୍ ତଥ୍ୟକୁ ଏକୀକୃତ କରିବା ଅନ୍ତର୍ଭୁକ୍ତ।



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
Indian Institute of Technology Bhubaneswar

Media/Publication	Odishastand.com		
Date	8 th July 2026	Language	English
Headline	Rapid Urbanization and Deforestation Driving Severe Heat Hotspots Across Odisha, Warns IIT Bhubaneswar Study		
Link	https://odishastand.com/odisha-heat-hotspots-iit-bhubaneswar-climate-action-2026		



BHUBANESWAR, July 8, 2026: Accelerating urbanization and widespread land degradation are dramatically expanding surface heat zones across Odisha, according to a landmark 20-year satellite data analysis released by the Indian Institute of Technology (IIT) Bhubaneswar. The research, published in *Environmental Science: Advances*—a peer-reviewed journal of the Royal Society of Chemistry—calls for immediate, localized climate

interventions to counter a steady rise in extreme surface temperatures threatening both coastal and interior districts.

The extensive climate study was spearheaded by Ms. Dikshika Mahapatra and Dr. Debadatta Swain of the School of Earth, Ocean and Climate Sciences at IIT Bhubaneswar. By evaluating two decades of high-resolution spaceborne observations, the research duo tracked the shifting footprint of thermal hotspots across all 30 districts of the state. The data revealed that major urban and industrial hubs, including Khordha, Ganjam, Cuttack and Sundargarh, are bearing the brunt of this thermal expansion, with hotspot coverage in several coastal areas growing by 2% to 9% every year.

Breaking away from historical patterns, the study reveals that severe thermal stress is no longer a phenomenon unique to concrete cities. Interior and hilly regions, such as Balangir, Kalahandi, Rayagada and Gajapati, are now facing prolonged, intense thermal conditions. The researchers identified the primary drivers behind this inland warming as accelerating vegetation loss, forest degradation and the continuous conversion of fertile terrain into barren land.

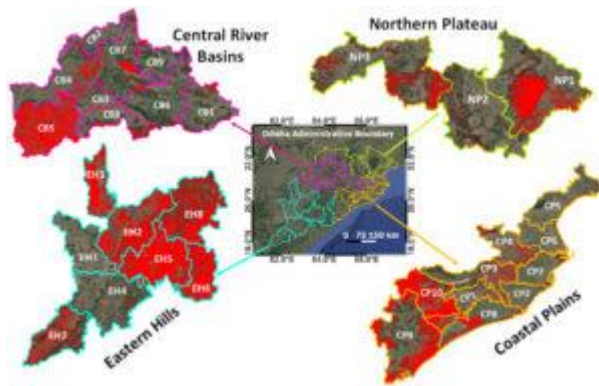


Figure: A geographical breakdown of persistent thermal hotspots (in red) in Odisha. The figure visualizes how varied topographies, spanning the districts in Coastal Plains, Central River Basins, Eastern Hills and Northern Plateau regions, are currently experiencing severe and persistent land surface heating.

According to the authors, allowing these thermal hotspots to expand unchecked presents a looming crisis for public health, will heavily strain regional power grids due to soaring cooling demands and undermines broader environmental sustainability. On a positive note, the paper illustrates how leveraging satellite-based monitoring allows policymakers to pinpoint exact micro-climatic vulnerabilities, laying the groundwork for highly targeted, data-driven resilience strategies.

To combat the compounding heat, the IIT Bhubaneswar study outlines a series of tailor-made ecological fixes. Key recommendations include the rapid expansion of urban green canopies, the adoption of heat-resilient construction materials, the rehabilitation of degraded riverbanks and coastal mangroves and the mandatory integration of satellite mapping into urban zoning laws. This publication highlights IIT Bhubaneswar's focal role in delivering actionable, high-tech scientific research aimed at solving urgent environmental challenges and securing a sustainable future for the region.



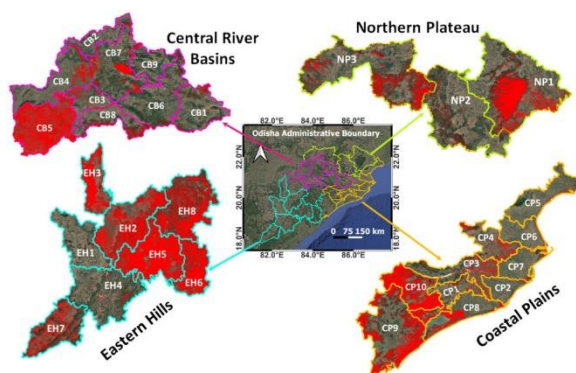
भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	Odishahaat.com		
Date	8 th July 2026	Language	English
Headline	IIT Bhubaneswar Study Maps Odisha's Rising Thermal Hotspots, Urges Regional Climate Action		
Link	https://odishahaat.com/iit-bhubaneswar-odisha-thermal-hotspots-climate-study-2026		



BHUBANESWAR, July 8, 2026: A pioneering study by researchers at the Indian Institute of Technology (IIT) Bhubaneswar has revealed a significant rise in land surface thermal hotspots across Odisha, underscoring the escalating impact of rapid urbanization and severe land-use modifications on the state's climate. Published in the prestigious Royal Society of Chemistry journal, *Environmental Science: Advances*, the

comprehensive research highlights how human-driven landscape changes are intensifying surface heat, creating urgent environmental and public health concerns across the region.



The rigorous study, conducted by Ms. Dikshika Mahapatra and Dr. Debadatta Swain from the School of Earth, Ocean and Climate Sciences at IIT Bhubaneswar, meticulously analyzed two decades of satellite data to map the evolution of thermal hotspots across all 30 districts of Odisha. Their critical findings demonstrate that

rapidly expanding urban and industrial centers most notably Khordha, Ganjam, Cuttack and Sundargarh are witnessing a steady escalation in extreme surface temperatures. In several vulnerable coastal districts, the coverage of these dangerous thermal hotspots is expanding at an alarming rate of 2% to 9% annually.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Crucially, the research establishes that rising thermal stress is no longer isolated to heavily populated cities. Multiple interior and hilly districts, including Balangir, Kalahandi, Rayagada and Gajapati, are now experiencing persistent thermal stress. The authors attribute this interior warming primarily to extensive vegetation loss, severe forest degradation and rapidly widening stretches of barren land, which absorb and radiate solar heat far more intensely than natural forest cover.

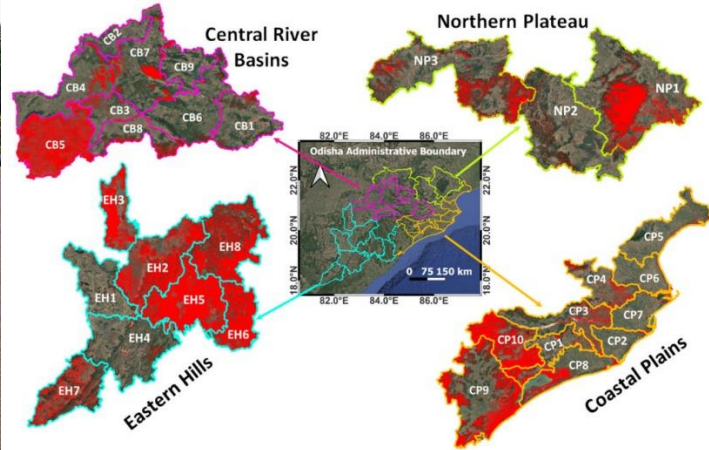
The researchers explicitly warn that prolonged exposure to expanding thermal hotspots carries severe implications for public health, exponentially raises seasonal energy demands and threatens overall environmental sustainability. However, the study also demonstrates how high-resolution satellite-based monitoring can serve as a vital tool to identify highly vulnerable regions and provide state authorities with the data necessary for evidence-based planning.

To mitigate these escalating risks, the study advocates for immediate, region-specific climate interventions. The researchers recommend expanding urban green spaces, constructing heat-resilient infrastructure, aggressively restoring coastal mangroves and riverbank vegetation and systematically integrating high-resolution satellite data into modern urban planning and environmental management. This landmark publication reflects IIT Bhubaneswar's ongoing commitment to driving advanced scientific research that directly addresses pressing environmental challenges and fosters sustainable regional development.



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

Media/Publication	Yuvasamaya.com		
Date	8 th July 2026	Language	Odia
Headline	IIT Bhubaneswar research: Thermal hotspots increasing at alarming rate in Odisha, calls for climate action		
Link	https://yuvasamay.com/iit-bhubaneswar-odisha-thermal-hotspots-climate-change-study		



ଭୁବନେଶ୍ୱର, ୮ ଜୁଲାଇ ୨୦୨୬: ଓଡ଼ିଶାରେ ଦ୍ରୁତ ସହରୀକରଣ ଏବଂ ଭୂମି ଅବକ୍ଷୟ ଯୋଗୁଁ ସମଗ୍ର ରାଜ୍ୟରେ ପୃଷ୍ଠ ଉତ୍ତାପ ତୀବ୍ର ଗତିରେ ବୃଦ୍ଧି ପାଇଛି। ଭାରତୀୟ ପ୍ରଯୁକ୍ତି ପ୍ରତିଷ୍ଠାନ (ଆଇଆଇଟି) ଭୁବନେଶ୍ୱରର ପୃଥ୍ବୀ, ମହାସାଗର ଏବଂ ଜଳବାୟୁ ବିଜ୍ଞାନ ସ୍କୁଲର ଗବେଷକମାନଙ୍କ ଦ୍ୱାରା କରାଯାଇଥିବା ଏକ ନୂତନ ଅଧ୍ୟୟନରୁ ସମଗ୍ର ଓଡ଼ିଶାରେ ଭୂମିପୃଷ୍ଠ ତାପଜ (ଥର୍ମାଲ୍) ହଟସ୍ପଟ୍ରେ ଉଲ୍ଲେଖନୀୟ ବୃଦ୍ଧି ଘଟିଥିବା ଜଣାପଡ଼ିଛି। ଏହି ଗବେଷଣା ରାଜ୍ୟର ଜଳବାୟୁ ଉପରେ ଦ୍ରୁତ ସହରୀକରଣ ଏବଂ ଭୂମି-ବ୍ୟବହାର ପରିବର୍ତ୍ତନର ବହୁଥିବା ଗୁରୁତର ପ୍ରଭାବକୁ ସୂଚାଉଛି। ରୟାଲ ସୋସାଇଟି ଅଫ୍ କେମେଷ୍ଟ୍ରିର ଏକ ପ୍ରତିଷ୍ଠିତ ଜର୍ଣ୍ଣାଲ 'ଏନଭାଇରମେଣ୍ଟାଲ୍ ସାଇନ୍ସ: ଆଡ଼ଭାନ୍ସେସ୍'ରେ ଏହି ଗବେଷଣା ପତ୍ର ପ୍ରକାଶିତ ହୋଇଛି।

ସୁଗ୍ରୀଢ଼ୀ ଦୀକ୍ଷୀକା ମହାପାତ୍ର ଏବଂ ତତ୍ତ୍ୱର ଦେବଦତ୍ତ ସ୍ୱାଇଁଙ୍କ ନେତୃତ୍ୱରେ କରାଯାଇଥିବା ଏହି ଗବେଷଣାରେ ଓଡ଼ିଶାର ସମସ୍ତ ୩୦ଟି ଜିଲ୍ଲାରେ କିପରି ତାପଜ ହଟସ୍ପଟ୍ ବିକଶିତ ହୋଇଛି, ତାହା ଅନୁଧ୍ୟାନ କରିବା ପାଇଁ ଦୀର୍ଘ ୨୦ ବର୍ଷର ସାଟେଲାଇଟ୍ ତଥ୍ୟର ବିଶ୍ଳେଷଣ କରାଯାଇଛି। ଅଧ୍ୟୟନର ନିଷ୍ପତ୍ତିରୁ ଜଣାପଡ଼ିଛି ଯେ ଦ୍ରୁତ ଗତିରେ ବହୁଥିବା ସହରୀକରଣ ଏବଂ ଶିଳ୍ପାଞ୍ଚଳ, ବିଶେଷକରି ଖୋର୍ଦ୍ଧା, ଗଞ୍ଜାମ, କଟକ ଏବଂ ସୁନ୍ଦରଗଡ଼



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

ଜିଲ୍ଲାରେ ପୃଷ୍ଠ ତାପମାତ୍ରା କ୍ରମାଗତ ଭାବେ ବୃଦ୍ଧି ପାଇଛି। ଏପରିକି ଅନେକ ଉପକୂଳବର୍ତ୍ତୀ ଜିଲ୍ଲାଗୁଡ଼ିକରେ ତାପଜ ହଟସ୍ପଟ୍ କଭରେଜ୍ ବାର୍ଷିକ ୨ ପ୍ରତିଶତରୁ ୯ ପ୍ରତିଶତ ପର୍ଯ୍ୟନ୍ତ ବୃଦ୍ଧି ପାଇଥିବା ରେକର୍ଡ୍ କରାଯାଇଛି।

ତେବେ ଏହି ଗବେଷଣାରୁ ଏକ ଆଶ୍ଚର୍ଯ୍ୟଜନକ ତଥ୍ୟ ସାମ୍ନାକୁ ଆସିଛି ଯେ, ବୃଦ୍ଧି ପାଇଥିବା ଏହି ଉତ୍ତାପ ଆଉ କେବଳ ସହରଗୁଡ଼ିକ ମଧ୍ୟରେ ସୀମିତ ହୋଇ ରହିନାହିଁ। ଓଡ଼ିଶାର ଆଭ୍ୟନ୍ତରୀଣ ଏବଂ ପାହାଡ଼ିଆ ଅଞ୍ଚଳ ଯେପରିକି ବଲାଙ୍ଗୀର, କଳାହାଣ୍ଡି, ରାୟଗଡ଼ା ଏବଂ ଗଜପତି ଜିଲ୍ଲା ମଧ୍ୟ ଏବେ କ୍ରମାଗତ ଉତ୍ତାପର ତାପ ଅନୁଭବ କରୁଛନ୍ତି। ଏହି ଅଞ୍ଚଳଗୁଡ଼ିକରେ ଉଦ୍ଭିଦ ହ୍ରାସ, ବ୍ୟାପକ ଜଙ୍ଗଲ କ୍ଷୟ ଏବଂ ଜମି କ୍ରମାଗତ ଭାବେ ଅନୁର୍ବର ହେବା ଯୋଗୁଁ ତାପଜ ହଟସ୍ପଟ୍ ସୃଷ୍ଟି ହେଉଛି।

ଗବେଷକମାନଙ୍କ କହିବା ଅନୁଯାୟୀ, ଏପରି ଥର୍ମାଲ୍ ହଟସ୍ପଟ୍ରେ ଦୀର୍ଘ ସମୟ ଧରି ରହିବା ଦ୍ୱାରା ଜନସ୍ୱାସ୍ଥ୍ୟ ବିପନ୍ନ ହେବା ସହ ବିଦ୍ୟୁତ୍ ଶକ୍ତିର ଚାହିଦା ବୃଦ୍ଧି ପାଇବ ଏବଂ ପରିବେଶଗତ ସ୍ଥାୟୀତ୍ୱ ଉପରେ ଏହାର ଗମ୍ଭୀର ପ୍ରଭାବ ପଡ଼ିବ। ଏହି ଅଧ୍ୟୟନଟି ଦର୍ଶାଉଛି ଯେ କିପରି ଉପଗ୍ରହ-ଆଧାରିତ ନିରୀକ୍ଷଣ ମାଧ୍ୟମରେ ଦୁର୍ବଳ ଓ ବିପଦପୂର୍ଣ୍ଣ ଅଞ୍ଚଳଗୁଡ଼ିକୁ ଚିହ୍ନଟ କରାଯାଇପାରିବ ଏବଂ ଜଳବାୟୁ କ୍ଷିରତା ପାଇଁ ପ୍ରମାଣ-ଆଧାରିତ ଯୋଜନା ପ୍ରସ୍ତୁତ କରାଯାଇପାରିବ।

ଏହି ବଡ଼ ଜଳବାୟୁ ଆହ୍ୱାନର ମୁକାବିଲା ପାଇଁ ଗବେଷଣା ପତ୍ରରେ କେତେକ ଅଞ୍ଚଳ-ନିର୍ଦ୍ଦିଷ୍ଟ ସମାଧାନର ସୁପାରିଶ କରାଯାଇଛି। ସେଗୁଡ଼ିକ ମଧ୍ୟରେ ସହରାଞ୍ଚଳରେ ସବୁଜ ସ୍ଥାନ ବା ଗ୍ରୀନ୍ ସ୍ୱେସ୍ଚର ବିସ୍ତାର, ତାପ-ପ୍ରତିରୋଧୀ ଭିଡିଭୁମିର ବିକାଶ, ମାଙ୍ଗ୍ରୋଭ୍ ଏବଂ ନଦୀକୂଳ ଉଦ୍ଭିଦର ପୁନରୁଦ୍ଧାର କରିବା ଅନ୍ତର୍ଭୁକ୍ତ। ଏହାସହିତ ଆଗାମୀ ଦିନରେ ସହରାଞ୍ଚଳ ଯୋଜନା ଏବଂ ପରିବେଶ ପରିଚାଳନାରେ ଉଚ୍ଚ-ରିଜୋଲ୍ୟୁସନ୍ ସାଟେଲାଇଟ୍ ତଥ୍ୟକୁ ଏକୀକୃତ କରିବା ପାଇଁ ଆହ୍ୱାନ ଦିଆଯାଇଛି। ଏହି ଗୁରୁତ୍ୱପୂର୍ଣ୍ଣ ପ୍ରକାଶନଟି ଆଇଆଇଟି ଭୁବନେଶ୍ୱରର ପରିବେଶଗତ ସମସ୍ୟାର ସମାଧାନ କରିବା ଏବଂ ବିଜ୍ଞାନ ଓ ପ୍ରଯୁକ୍ତିବିଦ୍ୟା ମାଧ୍ୟମରେ ସ୍ଥାୟୀ ବିକାଶ ଦିଗରେ ନିରନ୍ତର ପ୍ରତିବଦ୍ଧତାକୁ ପ୍ରତିଫଳିତ କରୁଛି।



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर Indian Institute of Technology Bhubaneswar

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Headline	Surface heat is intensifying in Odisha, alarming data from research by IIT Bhubaneswar		
Link	https://prajuktiodisha.com/iit-bhubaneswar-study-odisha-global-warming-surface-temperature-rise		

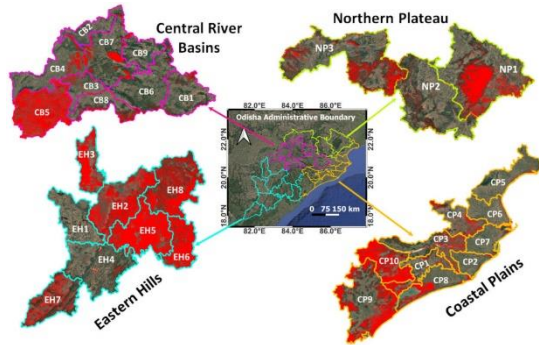
ଭୁବନେଶ୍ୱର, ୮ ଜୁଲାଇ ୨୦୨୬: ରାଜ୍ୟରେ ଅଣାୟତ୍ତ ହେବାରେ ଲାଗିଛି ଜଳବାୟୁ ପରିବର୍ତ୍ତନର ପ୍ରଭାବ। ହ୍ରାସ ସହରୀକରଣ ଏବଂ ଭୂମିର ଅବକ୍ଷୟ ଯୋଗୁଁ



ଓଡ଼ିଶାର କୋଣ ଅନୁକୋଣରେ ଭୂମିପୃଷ୍ଠର ଉତ୍ତାପ ବା ତାପଜ ହ୍ରାସ ଚିତ୍ରାଙ୍କନକ ଭାବେ ବୁଝି ପାରିଛି। ଭାରତୀୟ ପ୍ରଯୁକ୍ତି ପ୍ରତିଷ୍ଠାନ (ଆଇଆଇଟି) ଭୁବନେଶ୍ୱରର ପୃଥ୍ବୀ, ମହାସାଗର ଏବଂ ଜଳବାୟୁ ବିଜ୍ଞାନ ସ୍କୁଲର ବିଜ୍ଞାନୀମାନଙ୍କ ଦ୍ୱାରା କରାଯାଇଥିବା ଏକ ବଡ଼ ଅଧ୍ୟୟନରୁ ଏହି ସାଂଘାତିକ ସତ୍ୟ ପ୍ରକାଶ ପାଇଛି। ରୟାଲ ସୋସାଇଟି ଅଫ୍ କେମେଣ୍ଟ୍ରିର ପ୍ରତିଷ୍ଠିତ ଜର୍ଣ୍ଣାଲ 'ଏନଭାଇମେଣ୍ଟାଲ୍ ସାଇନ୍ସ: ଆଡ଼ଭାନ୍ସେସ'ରେ ଏହି ରିପୋର୍ଟ ସ୍ଥାନ ପାଇବା ପରେ ଏବେ ସ୍ଥାନୀୟ ଜଳବାୟୁକୁ ନେଇ ଚିନ୍ତା ବଢ଼ିଯାଇଛି।

ଏହି ସ୍ୱତନ୍ତ୍ର ଅଧ୍ୟୟନକୁ ଗବେଷକ ସୁଶ୍ରୀ ଦୀକ୍ଷୀତା ମହାପାତ୍ର ଏବଂ ତତ୍କାଳୀନ ଦେବଦତ୍ତ ସ୍ୱାଇଁ ପରିଚାଳନା କରିଛନ୍ତି। ଓଡ଼ିଶାର ସମସ୍ତ ୩୦ଟି ଜିଲ୍ଲାର ତାପମାତ୍ରା ବଦଳିବାର ଶୈଳୀକୁ ବୁଝିବା ପାଇଁ ଗବେଷକ ଦଳ ଦୀର୍ଘ ୨୦ ବର୍ଷର ସାଟେଲାଇଟ୍ ତଥ୍ୟକୁ ପୁଞ୍ଜୀନୁପୁଞ୍ଜ ବିଶ୍ଳେଷଣ କରିଛନ୍ତି। ଏହି ତଥ୍ୟ ଅନୁଯାୟୀ, ଶିଖାଞ୍ଚଳ ଓ ସହରୀକରଣର କେନ୍ଦ୍ରବିନ୍ଦୁ ସାଜିଥିବା ଖୋର୍ଦ୍ଧା, ଗଞ୍ଜାମ, କଟକ ଏବଂ ସୁନ୍ଦରଗଡ଼ ଜିଲ୍ଲାରେ ପୃଷ୍ଠ ତାପମାତ୍ରା

ସବୁଠୁ ଅଧିକ ବଢ଼ିବାରେ ଲାଗିଛି। ବିଶେଷ କରି ଉପକୂଳବର୍ତ୍ତୀ ଜିଲ୍ଲାଗୁଡ଼ିକରେ ତାପଜ ହ୍ରାସର ପରିସର ବାର୍ଷିକ ୨ ପ୍ରତିଶତରୁ ଆରମ୍ଭ କରି ପ୍ରାୟ ୯ ପ୍ରତିଶତ ପର୍ଯ୍ୟନ୍ତ ବୃଦ୍ଧି ପାଇଥିବା ଦେଖାଯାଇଛି।



ରିପୋର୍ଟରୁ ମିଳିଥିବା ସବୁଠାରୁ ଉଦ୍‌ବେଗଜନକ ତଥ୍ୟ ହେଉଛି, ଏହି ପ୍ରାଣନ୍ଧାତା ଉତ୍ତାପର ପ୍ରଭାବ କେବଳ ସହରାଞ୍ଚଳରେ ସୀମିତ ହୋଇ ରହିନାହିଁ। ବଲାଙ୍ଗୀର, କଳାହାଣ୍ଡି, ରାୟଗଡ଼ା ଏବଂ ଗଜପତି ଭଳି ଆଭ୍ୟନ୍ତରୀଣ ତଥା ପାହାଡ଼ିଆ ଅଞ୍ଚଳ ମଧ୍ୟ ଏବେ କ୍ରମାଗତ ତାପଜ ତାପ ଦେଇ ଗତି କରୁଛନ୍ତି। ସବୁଜିମା ହ୍ରାସ, ଜଙ୍ଗଲ କ୍ଷୟ ଏବଂ ଜମି ବାରମ୍ବାର ଅନୁର୍ବର ହେବା ଯୋଗୁଁ ଏହି ଅଞ୍ଚଳଗୁଡ଼ିକ ଏବେ ଉତ୍ତପ୍ତ କୁଣ୍ଡରେ ପରିଣତ ହେଉଛନ୍ତି। ଏହିପରି ହ୍ରାସର ଗୁଡ଼ିକରେ ଦୀର୍ଘ ସମୟ ରହିବା ଦ୍ୱାରା ଆଗାମୀ ଦିନରେ ଜନସାଧାରଣ ବିପର୍ଯ୍ୟୟ, ଶକ୍ତିର ବ୍ୟାପକ ଚାହିଦା ଏବଂ ପରିବେଶର ସନ୍ତୁଳନ ସମ୍ପୂର୍ଣ୍ଣ ବିଚ୍ଛିନ୍ନିତ ହେବା ଆଶଙ୍କା ରହିଛି। ଅଞ୍ଚଳ ଭିତରେ ଏହି ଦୁର୍ବଳ ସ୍ଥାନଗୁଡ଼ିକୁ ଚିହ୍ନଟ

କରିବାରେ ଉପଗ୍ରହ ଆଧାରିତ ନିରୀକ୍ଷଣ ବେଶ୍ ସହାୟକ ହେବ ବୋଲି ବୈଜ୍ଞାନିକମାନେ କହିଛନ୍ତି।

ଏହି ସମସ୍ୟାର ସ୍ଥାୟୀ ସମାଧାନ ପାଇଁ ତୁରନ୍ତ ଅଞ୍ଚଳ-ନିର୍ଦ୍ଦିଷ୍ଟ ପଦକ୍ଷେପ ନେବାକୁ ଅଧ୍ୟୟନରେ ପରାମର୍ଶ ଦିଆଯାଇଛି। ସହରଗୁଡ଼ିକରେ ବ୍ୟାପକ ଗଛ ଲଗାଇ ସବୁଜ ବଳୟ ସୃଷ୍ଟି କରିବା, ଉତ୍ତାପ ସହ୍ୟ କରିପାରୁଥିବା ତାପ-ପ୍ରତିରୋଧୀ ଭିଡିଓମି ଡିଆଁ କରିବା ଏବଂ ସମୁଦ୍ର କୂଳରେ ମାଙ୍ଗ୍ରୋଭ୍ ବା ହେଡ୍‌ଲ୍ୟାଣ୍ଡ ସହ ନଦୀକୂଳ ସବୁଜିମାର ପୁନରୁଦ୍ଧାର କରିବା ପାଇଁ ଆହ୍ୱାନ ଦିଆଯାଇଛି। ସହରୀ ଯୋଜନାରେ ଉଚ୍ଚ କ୍ଷମତା ସମ୍ପନ୍ନ ସାଟେଲାଇଟ୍ ତଥ୍ୟ ବ୍ୟବହାର କରି ପରିବେଶ ପରିଚାଳନାକୁ ଅଧିକ ସୁଦୃଢ଼ କରିବାକୁ ଏଥିରେ କୁହାଯାଇଛି। ପରିବେଶ ସୁରକ୍ଷା ଓ ବିଜ୍ଞାନ-ପ୍ରଯୁକ୍ତି ମାଧ୍ୟମରେ ସ୍ଥାୟୀ ବିକାଶ ଦିଗରେ ଆଇଆଇଟି ଭୁବନେଶ୍ୱରର ଏହି ପ୍ରୟାସ ବେଶ୍ ପ୍ରଶଂସନୀୟ।