



## **SUSTAINABLE HABITAT AND ENVIRONMENT PROTECTION WITH SPECIAL REFERENCE TO GUWAHATI CITY**

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### **Abstract**

*Rapid urbanization in Guwahati City necessitates a strong focus on sustainable habitats and environmental protection. Unplanned development particularly encroachment on wetlands and hills has significantly increased the risks of flooding and biodiversity loss. To address these challenges, it is essential to integrate ecological considerations into urban planning. This includes promoting green spaces, implementing resilient infrastructure, ensuring sustainable waste management, and encouraging the use of renewable energy. Such measures are crucial for reducing Guwahati's ecological footprint and fostering a more environmentally responsible and livable city.*

**Key words:** *Guwahati, Sustainable Habitat, Environmental Protection, Urbanization, Bio-diversity.*

### **Introduction**

A sustainable habitat is an ecosystem that provides food, shelter, and other essentials to both humans and other organisms without depleting natural resources or generating external waste. At its core, it means learning to live in harmony with nature, which is perhaps the most challenging yet essential step toward a truly sustainable future.

Human beings must realize that the Earth is not theirs alone, it is home to countless living beings, each playing a role in maintaining ecological balance. Rapid and unplanned development, driven by human ambition, has often ignored this truth, leading to environmental degradation and disturbing the natural order.

When we act against nature through deforestation, pollution, over-exploitation of resources, and reckless urbanization we trigger consequences in the form of natural disasters such as earthquakes, tsunamis, floods, and droughts. These are not merely coincidences, but often nature's response to human negligence. If such actions continue unchecked, humanity may be forced to pay a heavy price for generations to come.

On the other hand, when we respect and preserve the environment, nature responds in kind. Ecosystem stability and ecological balance are best maintained when human activity complements, rather than disrupts, natural systems. Unfortunately, modern scientific, industrial, and technological advances while offering numerous benefits have also led to heavy pollution, unregulated resource extraction, land misuse, and unchecked urban sprawl. These factors have severely disrupted the delicate relationship between humans and the environment.

Now, more than ever, it is essential to adopt sustainable practices that promote harmony with nature. The concept of a sustainable habitat must be integrated into every aspect of our lives from urban planning and agriculture to energy use and waste management. Only then can we ensure a stable, healthy planet for current and future generations.



## Objectives of the Study

- 1 To identify the root causes of the major environmental and habitat-related problems in Guwahati city, with a focus on disturbances to the natural ecosystem and inadequate environmental protection.
- 2 To explore and propose effective, sustainable solutions to address these issues and restore ecological balance in the region.

## Materials and Methods

This study is primarily based on fieldwork. For the purpose of this paper, data has been collected from two main sources

- (a) Primary Sources – These include data collected directly from the field through surveys, observations, and interactions with local residents.
- (b) Secondary Sources – These consist of information gathered from various published materials such as books, research journals, magazines, government reports, and other relevant literature.

## Guwahati City

Guwahati is often referred to as the gateway to Northeast India, owing to its strategic significance as the region's major cultural, political, educational, transportation, and commercial hub. It is the second-largest city in eastern India, after Kolkata, and plays a pivotal role in the region's development. Known for its vibrant culture, rich traditions, festive spirit, diverse cuisine, and cosmopolitan character, Guwahati stands out as one of the fastest-growing cities in the country. Often called the "City of Temples", it houses numerous ancient temples, reflecting its deep-rooted spiritual and historical legacy. The city has also been included in the list of the top 100 Smart Cities in India, further enhancing its national importance and future development prospects.

The history of Guwahati stretches back thousands of years. References to the city can be found in ancient texts such as the Puranas and epics, identifying it as one of Asia's oldest inhabited cities. Historical sites like Kamakhya, Basistha, and Navagraha temples provide strong evidence of the city's ancient origins. Archaeological excavations at Ambari have traced human settlements in the region to as early as the 6th century AD. Guwahati is closely associated with the Brahmaputra Valley Civilization and was known in ancient times as Pragjyotishpura, due to the widespread practice of JyotishShastra (astrology). It once served as the capital of ancient Assam, then called Kamrupa. The name Guwahati itself is derived from two Assamese words: "Guwa" meaning areca nut, and "Haat" meaning market—indicating its historical role as a trade center.

## Area and Population

The total area of Guwahati city at present is approximately 328 square kilometers (or 127 square miles). According to the 2011 Population Census of India, the official population of Guwahati was recorded as 9,68,549. However, unofficial estimates suggest that the current population is significantly higher, likely exceeding 20,00,000. This rapid growth in population has placed considerable pressure on the city's infrastructure, natural resources, and environment.



### **Forest area of Guwahati City**

Guwahati is surrounded by 12 reserved forests with a total area of about 261 sq. km. These forests, mostly on hills and hillocks, are home to many wild animals and birds.

### **Habitat And Environment Related Problems of Guwahati City**

1. Deforestation
2. Landslide
3. Artificial flood
4. Threat to wildlife of reserve forests and sanctuaries of Guwahati
5. All kinds of pollution: air, water, soil and noise
6. Hill cutting
7. Slum growth
8. Low land encroaching
9. Over use of plastic

### **Solutions**

Given the increasing severity of the environmental and habitat-related issues in Guwahati, it is imperative that the state government, concerned authorities, non-governmental organizations (NGOs), and responsible citizens take timely and effective action. Failure to address these problems proactively may render them unmanageable in the near future.

To combat deforestation, the Forest Department must enforce forest protection laws with greater strictness and efficiency. Afforestation and social forestry programs should be actively promoted and implemented to restore the city's green cover. Solving the issue of deforestation will, in turn, help reduce other environmental problems such as landslides, artificial flooding, habitat loss, and pollution.

Additionally, the cutting of hills must be strictly prohibited, as it not only destabilizes the terrain but also contributes to soil erosion and landslides. Encroachment on low-lying lands and wetlands should be completely stopped to preserve the city's natural drainage systems. Plastic items must be banned, and alternatives such as biodegradable disposable bags and containers should be encouraged.

Preserving natural low-lying areas, ponds, wetlands, and lakes is essential for maintaining ecological balance. A well-planned and scientifically designed drainage system is crucial to prevent artificial flooding, which has become a recurring issue in the city. Wildlife conservation should also be prioritized to maintain biodiversity and ensure the stability of ecosystems.

Ultimately, establishing and maintaining ecological balance is key to sustaining a healthy habitat and protecting the environment of Guwahati. A combined effort by all stakeholders is necessary to safeguard the city's natural heritage and secure a sustainable future.



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