



Mains Practice Question

Q. "Urban biodiversity management is as crucial as protecting wilderness areas." In light of this statement, evaluate India's initiatives to preserve biodiversity in metropolitan areas. Cite successful examples. (250 words)

23 Oct, 2024 GS Paper 3 Bio-diversity & Environment

Approach

- Introduce the answer highlighting Urban biodiversity management as critical component for environmental conservation,
- Give Significance of Urban Biodiversity Management
- Highlight India's Initiatives for Urban Biodiversity Conservation
- Cite successful examples and their impact
- Conclude suitably.

Introduction

Urban biodiversity management has emerged as a critical component of environmental conservation, particularly in **rapidly urbanizing countries like India. Protecting biodiversity within cities is equally important as conserving wilderness areas.**

Body

Significance of Urban Biodiversity Management:

- **Human Well-being and Direct Impact:** Urban areas currently house over 55% of the global population, a figure projected to reach **68% by 2050**.
 - This rapid urbanization directly impacts human health in various ways.
 - Urban trees improve gaseous air pollution via airborne particle interception and gas absorption
 - **Mental health benefits** are also notable; studies indicate that areas with urban green spaces **report lower stress levels among residents.**
- **Ecosystem Services and Economic Benefits:** Urban biodiversity provides essential ecosystem services valued in the billions, including **pollination for urban agriculture, natural water filtration, and flood control.**
 - For example, The **East Kolkata Wetlands** with an area of 125 square km enjoys the **unique distinction of being the largest 'wastewater-fed aquaculture system'** in the world where the sewage is recycled for pisciculture and agriculture.
- **Educational and Research Opportunities:** Urban biodiversity acts as a **living laboratory**, offering educational and research opportunities.
 - It facilitates **environmental education, citizen science initiatives, and studies on adaptation and resilience.**
- **Species Preservation and Adaptation Studies:** Urban areas often harbor unique ecosystems and endemic species, with **some species thriving exclusively in urban environments** and others finding refuge from habitat loss.

- **Thousands of flamingos visit Mumbai's Thane Creek annually. Moreover, leopards in Mumbai's Sanjay Gandhi National Park** exemplify successful urban adaptation.
- **Climate Change Resilience:** Urban biodiversity also plays a crucial role in strengthening climate resilience.
 - It provides **natural cooling effects, flood mitigation, and carbon sequestration**. For instance, **Chennai's urban mangroves** protect coastal areas during cyclones.

India's Initiatives for Urban Biodiversity Conservation:

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Successful Examples and Their Impact



Conclusion

India's urban biodiversity initiatives demonstrate **growing recognition of cities as important biodiversity zones**. The successful examples from cities like Mumbai and Bangalore show that with **proper planning, community involvement, and institutional support**, urban biodiversity conservation can be achieved alongside development.

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