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Q6

what are the environmental implications of the reclamation of the water bodies into urban land use? Explain with examples.

UPSC Civil Services Mains 2021 · GS I · 10 marks · Women, Population and Urbanisation

Role of women and women's organization, population and associated issues, poverty and developmental issues, urbanization, their problems and their remedies.

Core demand of the question

- What are the environmental implications of the reclamation of the water bodies into urban land use? Explain with examples
- Keep the explanation within a 10-mark length

Revision summary

Filling urban lakes removes flood storage and groundwater recharge.

Chennai 2015 and Bengaluru's lost lakes are the working examples.

Heat, dengue drains, and lost bird habitat follow the concrete.

Wetland Rules 2017 and lake buffers are the legal reply.

Treat water bodies as infrastructure, not as vacant plots.

Introduction

Filling a tank or marsh to build a colony is not a free plot. It removes a flood cushion, a heat sink, and a living wetland, and the city pays in the next cloudburst.

Body**Hydrology and flood**

- Reclamation cuts storage and recharge. Stormwater then runs on roads, as **Chennai 2015** showed after **Pallikaranai** and other wetlands were nibbled.
- **Bengaluru's** lost lakes, mapped by researchers and the Comptroller's urban reports, turn every extreme rain into a traffic lake.
- Encroached floodplains of the **Yamuna** in Delhi and the **Mithi** in Mumbai are the same logic in a river city.

Ecology and climate

- Wetlands filter sewage and hold birds. Filling them kills fisheries and migratory stopovers, against the spirit of the **Wetlands (Conservation and Management) Rules, 2017**.
- Open water cools a ward. Concrete in its place raises the urban heat island and dengue-friendly stagnant pockets in drains.

Examples and duty

- **East Kolkata Wetlands** still treat sewage if they are not converted; they are a working argument against fill-and-build.
- **Srinagar's** Wular and Dal edges, and **Hyderabad's** shrinking tanks, show Himalayan and Deccan versions of the same loss.
- Smart Cities and AMRUT must treat lakes as blue infrastructure, not as land banks. Restore interconnecting rajakaluves and enforce buffer zones.

Flow diagram

Reclamation -> Lost storage flood
Reclamation -> Heat island
Reclamation -> Dead wetland
Lost storage flood -> City damage

Conclusion

Reclamation turns a water body into a flood machine, a hotter ward, and a dead habitat. Chennai, Bengaluru, and Mumbai are the textbooks. Keep the tank, or buy a bigger pump forever.

Facts & figures

Chennai 2015

Catastrophic urban flood linked to rainfall plus encroached tanks and marshes.

Pallikaranai

Chennai marsh reduced by dumping and construction, a classic reclamation case.

Wetlands Rules 2017

Central rules for notification and wise use of wetlands, including urban ones.

East Kolkata Wetlands

Ramsar site that treats city sewage through fisheries if not filled.

Mithi River

Mumbai channel whose floodplain squeeze worsens monsoon floods.

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