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EDITORIAL ANALYSIS

Infrastructure Alone Cannot Secure the Ganga's Future

 DOWN TO EARTH

25 August 2026 ·

ENVIRONMENT

GS3

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Infrastructure Alone Cannot Secure the Ganga's Future

 Down to Earth

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GS3

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INTERVIEW ANGLE

"Millions of Indians revere the Ganga and very few could name a single species that lives in it. Does reverence for a river translate into protection of it, and if not, what closes that gap?"

Source: [Original editorial](#)

Down to Earth

 Every fact web-verified against primary sources

THE LIFT LINE

A river can be worshipped by millions and known by almost none. Reverence without knowledge protects the idea of the Ganga, not the Ganga.

WHY THIS EDITORIAL MATTERS FOR YOUR EXAM

River rejuvenation is among the most frequently examined GS3 environment topics, and answers usually recite the Namami Gange components. This editorial supplies the critique that turns a description into an analysis.

GS Paper 3: Conservation; environmental pollution and degradation; government policies and interventions.

GS Paper 1: Important geophysical phenomena; distribution of natural resources; Indian society and culture.

CONCEPT	MEANING	WHY IT IS TESTABLE
Indicator species	A species whose population reflects the health of the wider ecosystem	Why dolphin numbers measure the river better than effluent readings alone
Ecological flow (e-flow)	The minimum flow required to sustain a river's ecosystem	The stressor that treatment infrastructure cannot address
Nature interpretation centre	A facility explaining local ecology to visitors, converting footfall into awareness	The intervention the authors propose

BACKGROUND AND CONTEXT

The Institutional Architecture

MILESTONE	DETAIL
2008	The Ganga declared a National River, given effect through the NGRBA notified on 20 February 2009
2009	National Ganga River Basin Authority constituted; Gangetic dolphin declared the National Aquatic Animal
2014	Namami Gange Programme launched
2016	National Ganga Council constituted by order under the Environment (Protection) Act, 1986, replacing the NGRBA
2020-21	Project Dolphin announced and taken up

The **National Mission for Clean Ganga (NMCG)** is the implementing body. The **Wildlife Institute of India**, established in **1982** at **Dehradun** as an autonomous institution under the Ministry of Environment, Forest and Climate Change, has run the biodiversity conservation component of Ganga rejuvenation.

The River

The Ganga runs approximately **2,525 km** from **Gaumukh at the Gangotri glacier** to the Bay of Bengal, and its basin is the largest in India, covering roughly a quarter of the country's land area across Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal. It is formed at **Devprayag** by the **confluence** of the **Bhagirathi** and the **Alaknanda**.

The Species

SPECIES	STATUS
Ganges river dolphin (<i>Platanista gangetica</i>)	National Aquatic Animal (2009); IUCN Endangered; WLP Schedule I; CITES Appendix I
Gharial (<i>Gavialis gangeticus</i>)	IUCN Critically Endangered; WLP Schedule I
Smooth-coated otter	IUCN Vulnerable; WLP Schedule I
Freshwater turtles	Several species under WLP Schedule I

The Ganges river dolphin is **functionally blind** and navigates entirely by **echolocation**, which is why it is acutely vulnerable to noise and to physical barriers. The first comprehensive riverine dolphin estimation, surveyed over **2021-23** and released in **March 2025**, recorded **6,327** dolphins across the surveyed river systems, with Uttar Pradesh highest at about **2,397**.

THE ANALYSIS

1. The programme measures what it builds, not what it restores. Namami Gange's reported outcomes are dominated by sewage treatment capacity created, drains intercepted and ghats developed. These are real and necessary. But they are **input measures for one class of stressor**, and a programme reporting on them can post steady progress while the river's biological condition does not improve.

2. The stressors that treatment plants cannot touch are the ones killing the fauna. Flow fragmentation by barrages, abstraction for irrigation, sand mining that destroys the sandbanks gharials nest on, and entanglement in fishing gear are the principal pressures on the Ganga's large aquatic species. No amount of effluent treatment addresses any of them, which is why water quality and biodiversity can move in different directions.

3. Indicator species are the honest measurement. A dolphin population is an integrated signal: it reflects prey availability, flow continuity, noise, depth and mortality pressure simultaneously. That is precisely what a single effluent parameter cannot do. The **estimation of 6,327 dolphins, released in March 2025**, matters less as a number than as the establishment of a **baseline**, since without one there is no way to say whether the programme is working in ecological terms.

4. Reverence and knowledge have come apart, which is the editorial's real insight. The Ganga commands genuine devotion from very large numbers of people. That constituency is enormous and almost entirely uninformed about the river's ecology. The result is a **paradox**: the river has more people who care about it than almost any river in the world, and almost no public pressure for e-flow guarantees or sand-mining regulation. Interpretation centres are an attempt to convert an existing emotional constituency into an informed one, which is cheaper than creating a constituency from nothing.

5. The counter-argument is correct in proportion and wrong in exclusivity. Six interpretation centres will not offset untreated sewage from dense riparian cities. Anyone who suggests otherwise is substituting sentiment for engineering. But the authors are not proposing a substitution. They are identifying what determines whether infrastructure is demanded, funded and enforced over decades, which is a public that knows what it is asking for.

DATA AND INSTITUTIONS VAULT

PRELIMS-GRADE FACTS:

Ganga declared National River: 2008. Namami Gange launched 2014; implementing body National Mission for Clean Ganga (NMCG).

National Ganga Council constituted 2016 by order under the Environment (Protection) Act, 1986, replacing the National Ganga River Basin Authority of 2009.

Ganges river dolphin (*Platanista gangetica*): declared National Aquatic Animal in 2009; IUCN Endangered; WLP Schedule I; CITES Appendix I; functionally blind, navigates by echolocation.

First comprehensive riverine dolphin estimation, surveyed 2021-23, released March 2025: 6,327 dolphins; Uttar Pradesh highest at about 2,397.

Gharial (*Gavialis gangeticus*): IUCN Critically Endangered, WLP Schedule I.

Ganga length approximately 2,525 km, from Gaumukh at the Gangotri glacier; formed at Devprayag by the confluence of the Bhagirathi and Alaknanda.

Wildlife Institute of India: established 1982, Dehradun, autonomous body under the MoEFCC.

The National Aquatic Animal is the Ganges river dolphin. Do not confuse it with the National Animal (tiger), the National Heritage Animal (Indian elephant) or the National Bird (Indian peacock). Also distinguish the National Ganga Council (2016) from the NGRBA (2009) which it replaced.

THE DEBATE

FOR (biodiversity and awareness must be central): Programme metrics track treatment capacity while the species that indicate ecosystem health decline from stressors no treatment plant addresses. A public that reveres the river without knowing its ecology cannot demand e-flow, sand-mining control or fishing-gear regulation. Interpretation centres convert an existing constituency into an effective one at low cost.

AGAINST (infrastructure is the binding constraint): The Ganga's dominant pressures are untreated sewage from dense riparian cities, industrial effluent, irrigation abstraction and barrage fragmentation. Six interpretation centres are negligible against that. Redirecting attention or funds from treatment and flow regulation toward education risks substituting sentiment for engineering.

Balanced verdict: These are complements, not alternatives, and the argument that unites them is about measurement rather than money. Sewage and effluent infrastructure remains indispensable and under-enforced. What the authors add is that **biodiversity indicators should sit alongside water-quality**

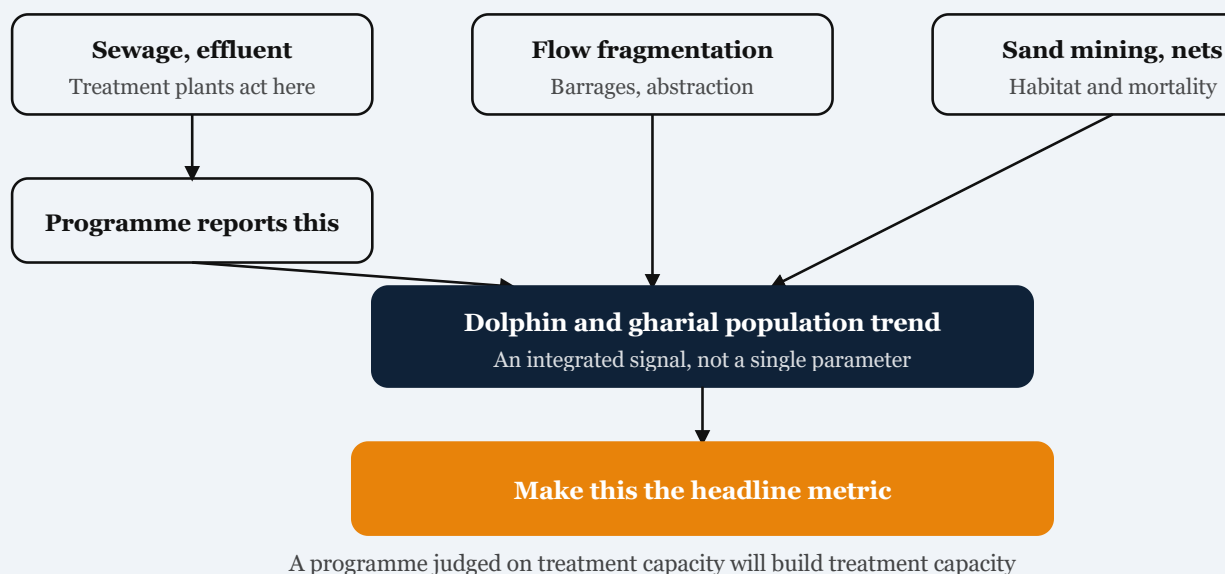
parameters as headline measures of programme success, because a programme judged on dolphin and gharial trends will pursue ecological flow and sand-mining control, while one judged on treatment capacity will build treatment capacity and report success regardless of whether the river recovers.

HOW TO THINK ABOUT THIS

When a long-running programme reports steady progress while the underlying problem appears unchanged, examine the metric before questioning the effort. Programmes are usually honest about what they measure; the failure is generally that what they measure is a **proxy** that has come apart from the outcome.

Treatment capacity is a proxy for river health that holds only if effluent is the sole stressor. Once flow, habitat and mortality pressures matter, the proxy detaches from the outcome, and the programme can succeed on its own terms indefinitely while the river does not recover. The correction is to add an integrated outcome indicator, here a population trend, that cannot be satisfied by input activity alone. That test, does the metric still track the outcome, applies to every public programme.

DIAGRAM-IN-WORDS



Three stressor classes reach the river; the current headline metric sees only one of them. An indicator species is the one measure that registers all three.

TAKEAWAY BOX

A river can be worshipped by millions and known by almost none. Reverence without knowledge protects the idea of the Ganga, not the Ganga.

Ganga declared National River 2008, NGRBA notified 20 February 2009; Namami Gange 2014 under NMCG; National Ganga Council 2016 replacing NGRBA 2009; Ganges river dolphin declared National Aquatic Animal 2009, IUCN Endangered, WLP Schedule I, CITES Appendix I, functionally blind and echolocating; dolphin estimation of 6,327 released March 2025; gharial Critically Endangered; Ganga about 2,525 km from Gaumukh, formed at Devprayag from the Bhagirathi and Alaknanda; Wildlife Institute of India established 1982 at Dehradun.

Does cultural reverence for a natural feature create any obligation to understand it ecologically, or is devotion sufficient on its own terms?

Connects to past UPSC Mains questions on the Namami Gange Programme, on river interlinking and ecological flow, and on the effectiveness of India's river conservation programmes.

"River rejuvenation in India measures what it constructs rather than what it restores." Critically examine with reference to the Ganga.

Source: Infrastructure Alone Cannot Secure the Ganga's Future — Ujjayari.com | Free UPSC & State PCS Editorial Analysis

• KEY ARGUMENTS AT A GLANCE

Writing in *Down To Earth*, authors from the Wildlife Institute of India contend that sewage treatment plants and embankments cannot by themselves secure the Ganga's future, because the river's endangered biodiversity, including the Gangetic dolphin, gharial, otters and freshwater turtles, remains entirely invisible to the millions who revere the river spiritually, and they present six nature interpretation centres across the Uttarakhand and Uttar Pradesh stretches of the basin as a model for converting visitors into informed custodians.



SUPPORTING

- Treating river restoration as a water-quality problem measures success in effluent parameters and treatment capacity, which can improve while the aquatic species that indicate genuine ecosystem health continue to decline from causes such as flow alteration, sand mining and fishing-gear entanglement that no treatment plant addresses.
- Public reverence for the Ganga is culturally deep but ecologically uninformed, so the very large constituency that cares about the river does not translate into pressure for the specific measures the river actually needs.
- Interpretation centres address the missing link directly, because a person who has seen a Gangetic dolphin explained as a blind, echolocating, endangered mammal found in this river and almost nowhere else acquires a specific stake that generalised devotion does not create.



COUNTER

The counter-view is that awareness-building is a marginal intervention against overwhelming physical pressures, since the Ganga's principal stressors are untreated sewage from dense riparian cities, industrial effluent, abstraction for irrigation and flow fragmentation by barrages, none of which will be resolved by better-informed visitors. On this reading, diverting attention and scarce funds from treatment infrastructure and flow regulation toward education risks substituting sentiment for engineering.



WAY FORWARD

The two approaches are complementary rather than competing: continue and enforce sewage and effluent infrastructure while adopting biodiversity indicators, notably dolphin and gharial population trends, as headline measures of programme success alongside water-quality

parameters, guarantee ecological flow as an enforceable condition rather than an aspiration, and scale interpretation centres across the basin so that the constituency that already reveres the river becomes capable of demanding the right things for it.


MAINS ANSWER FRAMEWORK
QUESTION

River rejuvenation in India has been pursued primarily as a water-quality and engineering problem. Examine the case for treating it as an ecosystem and public-awareness problem instead, with reference to the Ganga. (250 words)

INTRODUCTION

India's river rejuvenation programmes have been built largely around engineering: interception of drains, sewage treatment capacity and riverfront works. Writing in Down To Earth, authors from the Wildlife Institute of India argue that this framing has left the Ganga's living systems out of the account, and that the missing input is not more concrete but a public that knows what lives in the river.

BODY

The Ganga was declared a National River in 2008, given effect through the National Ganga River Basin Authority notified on 20 February 2009, and the Namami Gange Programme was launched in 2014 as an integrated conservation mission implemented by the National Mission for Clean Ganga, with the National Ganga Council constituted in 2016 as the apex body. The programme's reported achievements are overwhelmingly infrastructural, expressed in sewage treatment capacity created, drains tapped and ghats developed.

The difficulty is that these metrics capture only one class of stressor. The species that indicate whether the river functions as an ecosystem, principally the Ganges river dolphin, declared India's National Aquatic Animal in 2009 and listed as Endangered on the IUCN Red List and in Schedule I of the Wild Life (Protection) Act, 1972, along with the Critically Endangered gharial, smooth-coated otters and freshwater turtles, are threatened by flow fragmentation from barrages, sand mining, entanglement in fishing gear and abstraction for irrigation.

No treatment plant addresses any of these. The first comprehensive riverine dolphin estimation, surveyed over 2021-23 and released in March 2025, put the population at 6,327 across the surveyed river systems, providing for the first time a biological baseline against which programme success could be judged.

The authors' proposal is to close the gap between reverence and knowledge through six nature interpretation centres along the Uttarakhand and Uttar Pradesh stretches, on the reasoning that a public which venerates the river without knowing its ecology cannot generate pressure for the specific interventions the ecology requires.

CONCLUSION

A balanced answer should refuse the false choice. Sewage and effluent infrastructure remains indispensable and its enforcement is still incomplete.

The distinctive contribution here is the measurement argument: adopting dolphin and gharial population

trends as headline indicators of programme success, alongside water-quality parameters, would align what the programme reports with what the river actually needs.

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